

Traffic Impact Analysis Report

**REVISED REPORT**

**Burlingame Bay Office Building at  
567 Airport Blvd**

City of Burlingame, California

September 24, 2021



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## EXECUTIVE SUMMARY

This report summarizes the results of the Traffic Impact Study (TIS) conducted for the proposed 241,054 sq. ft. office building, to be located at 567 Airport Blvd in the City of Burlingame. The proposed office building would be located between the existing 555 and 577 Airport Blvd office buildings. In addition, the project would also construct a 5.5 level parking garage with 1,132 spaces plus 387 surface stalls for a total of 1,519 parking spaces to serve all three buildings. Both the proposed office building and parking garage would utilize the existing access points to the 555 and 577 Airport Blvd site.

The purpose of this report is to evaluate the project's traffic impacts to the surrounding transportation system pursuant to requirements under CEQA. To evaluate the impacts on the transportation infrastructure due to the addition of traffic from the proposed project, the study intersections were evaluated in accordance with the standards set forth by the level of service (LOS) policies of the City of Burlingame and the City/County Association of Governments of San Mateo County (C/CAG). Additionally, because three of the study intersections are located in the City of San Mateo, LOS policies from this jurisdiction were also considered for these intersections.

### ***Project Trip Generation***

TJKM developed estimated project trip generation for the proposed project based on published trip generation rates from the ITE publication *Trip Generation (10<sup>th</sup> Edition)*. TJKM used published trip rates for the ITE land use General Office Building (710) for this project. The proposed project is expected to generate 2,338 total daily trips, including 278 net new a.m. peak hour trips (239 in, 39 out) and 276 net new p.m. peak hour trips (44 in, 232 out).

### ***Vehicle Miles Traveled***

In the project vicinity, the C/CAG-VTA Travel Demand Model generates daily commute VMT per employee of 17.92 for the baseline model year of 2015. With the incorporation of the Transportation Demand Management (TDM) plan required by the City's 2030 Climate Action Plan the daily commute VMT per employee is expected to be 12.45. This is more than 15 percent below the countywide average of 16.74. Based on the OPR recommended significance threshold, the proposed project would have a **less-than-significant impact** on VMT.

### ***Existing Conditions***

Under this scenario, all of the study intersections operate within applicable jurisdictional standards during the a.m. peak hour, and all study intersections operate acceptably in the p.m. peak hour.

### ***Existing plus Project Conditions***

Under this scenario, all of the study intersections would continue to operate within applicable jurisdictional standards during a.m. peak hour, and all study intersections operate acceptably in the p.m. peak hour. The addition of project trips caused the intersection of Airport Blvd & Anza Blvd to experience an increase in delay (by 20.6 seconds), however the intersection continues to operate acceptably. Based on the City of Burlingame and City of San Mateo level of service criteria, the project is expected to have a **less-than-significant impact** at all the study intersections.

***Background Conditions***

Background Conditions are similar to Existing Conditions, but with the addition of traffic from approved and other reasonably foreseeable developments within the vicinity of the proposed project. The projects included in Background Conditions were selected in consultation with City of Burlingame staff.

Under this scenario, all of the study intersections would continue to operate within applicable jurisdictional standards during the a.m. peak hour, and all study intersections would operate acceptably in the p.m. peak hour. Traffic conditions would be more constrained under this scenario than in Existing Conditions, but would still operate acceptably based on jurisdictional level of service criteria.

***Background plus Project Conditions***

Under this scenario, all of the study intersections would continue to operate within applicable jurisdictional standards during the a.m. peak hour and the p.m. peak hour. TJKM revised the peak hour factor at two intersections which resulted in an acceptable LOS D for both intersections. Based on the City of Burlingame level of service criteria, the project is expected to have a **less-than-significant impact** at all study intersections in this scenario.

***Cumulative Conditions***

The Cumulative No-Project Conditions analysis forecasts how the study area’s transportation system would operate with the full build-out of the project in combination with the growth and changes of the surrounding community by the year 2040.

Under this scenario, all project intersections except one operate acceptably in both peak hours. The signalized intersection of Broadway & Carolan Ave operates at LOS E in the a.m. peak hour and LOS D in the p.m. peak hour under this scenario.

***Cumulative plus Project Conditions***

Under this scenario, all project intersections except one operate acceptably in both peak hours. The signalized intersection of Broadway & Carolan Ave would continue to operate unacceptably in the a.m. peak hour (LOS E in the a.m. peak hour, and LOS D in the p.m. peak hour). The increase in delay at the intersection operating at unacceptable LOS would be less than five seconds. Based on the City of Burlingame level of service criteria, the project is expected to have a **less-than-significant impact** at all the study intersections.

***Site Access and On-Site Circulation***

Access to the proposed office buildings will utilize two existing driveways from Airport Blvd that currently provide access to both 555 and 577 Airport Blvd. Sight distance at the western driveway is considered to be adequate; however, at the eastern driveway there are two trees obscuring eastbound traffic from the driveway. It is recommended that both trees be heavily trimmed to provide adequate sight distance at the eastern driveway. For the on-site circulation, TJKM concluded that the site plan will operate acceptably and provide adequate on-site circulation and access to parking spaces. The proposed project does not conflict with existing and planned pedestrian or bicycle facilities and will add trips to existing transit facilities, which can be accommodated by the existing transit capacity. Site access and circulation are considered **adequate**, provided that the sight distance issue at the eastern driveway is resolved.

### **Parking**

Based on the City of Burlingame's Zoning Code, the project would require a 1/300 sq. ft. ratio for parking spaces, which totals 1,683 spaces. However, the project is proposing a 3/1,000 sq. ft. parking ratio based on the implementation of the TDM plan that will reduce the need for parking. Based on this proposal, the project would require 724 parking spaces for the proposed office building, plus an additional 780 parking spaces for the existing office buildings, and 15 parking spaces for recreational shoreline access. The proposed project would utilize 387 surface parking spaces, as well as construct a 5.5-level parking structure with 1,132 spaces, meeting City requirements. The proposed parking supply of 1,519 stalls would therefore be **adequate** under City of Burlingame requirements and would not produce any parking impacts on surrounding parcels or roadways.

### **Queuing Analysis**

Queuing operations were analyzed at all signalized study intersections with dedicated left- and right-turn lanes, under Existing, Background, and Cumulative Conditions, with and without the proposed project. Although not a significant impact under CEQA; the analysis is presented for informational purposes. Under Existing Conditions, the intersections of Broadway & Rollins Rd, Broadway & US-101 SB Ramps, Bayshore Hwy & US-101 NB Ramps, Airport Blvd & Anza Blvd, N. Bayshore Blvd & Peninsula Ave, and Airport Blvd & Coyote Point Dr/Peninsula Ave. experience queue overflows at one or more turn lanes, during one or both peak hours. Under Existing plus Project Conditions, the same turn lanes would experience overflows during the same peak hours, plus the addition of the westbound left movement at Airport Blvd & Anza Blvd. The addition of project trips would create a new queue overflow of 65 feet at this turn lane, an 85 foot increase from Existing Conditions. A split phase signal timing with the conversion of the westbound through lane to a shared westbound through/left lane would help to mitigate the queues; however, the intersection still operates acceptably from an LOS standpoint.

Elsewhere, the project would increase queues outside of the storage pocket by more than one car length at one additional intersection: Airport Blvd & Coyote Point Dr. /Peninsula Ave. However, at Airport Blvd & Coyote Point Dr/Peninsula Ave, the movement was already experiencing overflows in the Existing Conditions, and the project would only increase the queue by slightly over one car length. TJKM adjusted the peak hour factor at this intersection, and the queue reduced below Existing No Project conditions. The project would increase all other Existing queue lengths by no more than one car length.

Under Background Conditions, six study intersections experienced overflowing queues at one or more movements in the a.m. or p.m. peak hour, or both. The addition of project trips would cause one additional intersection to experience queue overflows: Airport Blvd & US-101 NB Ramps. Three movements in this scenario would experience queue increases by more than one car length with the addition of project trips, at Airport Blvd & US-101 NB Ramps, and Airport Blvd & Anza Blvd. The project would increase all other Background queue lengths by no more than one car length.

Under Cumulative Conditions, nine study intersections experienced overflowing queues at one or more movements in the a.m. or p.m. peak hour, or both. The addition of project trips would cause three movements at three different intersections to increase queues by more than one car length: at Airport

Blvd & Anza Blvd, Airport Blvd & US-101 NB Ramps, and Airport Blvd & Coyote Point Dr/Peninsula Ave. The project would increase all other Cumulative queue lengths by no more than one car length.

### **North Shoreview Neighborhood**

The N. Shoreview neighborhood in San Mateo has substantial issues related to cut-through traffic, but the 567 Airport project traffic will not significantly exacerbate the issues. It was observed that about two-thirds of the traffic entering the neighborhood is from the west of freeway, not from Burlingame's Bayfront area. TJKM offers the following related recommendations:

1. The City of San Mateo should continue to evaluate the origin and destination of traffic entering the N. Shoreview neighborhood in the afternoon commute to determine what share is actually cut-through traffic vs. residents returning to their homes from work.
2. TJKM does not recommend improving the overflowing westbound left turn lane on Peninsula Avenue serving N. Bayshore-bound traffic. It would be difficult to make improvements, but the on-going congestion could deter that portion of the traffic that might intend to cut through the neighborhood.

The freeway improvements described in this report are all important, but the addition of southbound ramps on Peninsula Avenue would seem to significantly improve freeway access, potentially reducing the cut-through issue in the North Shoreview neighborhood.

### **Recommendations**

Trim the trees to the west of the East Project Driveway to mitigate sight distance issues for eastbound traffic along Airport Blvd.

## 1.0 INTRODUCTION

This report summarizes the results of the Traffic Impact Study (TIS) conducted for the proposed office building, located at 567 Airport Blvd in the City of Burlingame. The project would add an additional 241,054 sq. ft. building adjacent to the two existing buildings at 555 and 577 Airport Blvd, which have a combined square footage of 259,733. The existing buildings are currently occupied by a mixture of office tenants. Primary access to the project site would be provided by two existing driveways off of Airport Blvd that currently provide access to 555 and 577 Airport Blvd.

This chapter discusses the TIS purpose, project study area, analysis scenarios and methods, and criteria used to identify significant impacts. **Figure 1** shows the study area and project site location. **Figure 2** shows the project's conceptual site plan.

### 1.1 STUDY INTERSECTIONS AND SCENARIOS

TJKM evaluated traffic conditions at 12 study intersections during the a.m. and p.m. peak hours on a typical weekday. The study intersections were selected in consultation with the City of Burlingame staff.

The peak periods observed for purposes of taking local traffic counts were between 7-9 a.m. and 4-6 p.m. on weekdays. Although two-hour peak period traffic counts were conducted, the highest single one-hour period recorded for each was used in the analysis. Throughout this report, these peak hours are identified as the a.m. and p.m. peak hours, respectively.

The study intersections and associated traffic controls are as follows:

1. Airport Blvd at Project Driveway W (One-Way Stop)
2. Airport Blvd at Project Driveway E (One-Way Stop)
3. Bayshore Hwy at Broadway/Airport Blvd (Signalized)
4. California Dr at Broadway (Signalized)
5. Carolan Ave at Broadway (Signalized)
6. Rollins Rd at Broadway (Signalized)
7. Broadway at US-101 SB Ramps (Signalized)
8. Bayshore Hwy at US-101 NB Ramps (Signalized)
9. Airport Blvd at Anza Blvd (Signalized)
10. Airport Blvd at US-101 NB Ramps (Signalized)
11. N. Bayshore Blvd at Peninsula Ave (Signalized)
12. Airport Blvd at Coyote Point Dr/Peninsula Ave (Signalized)

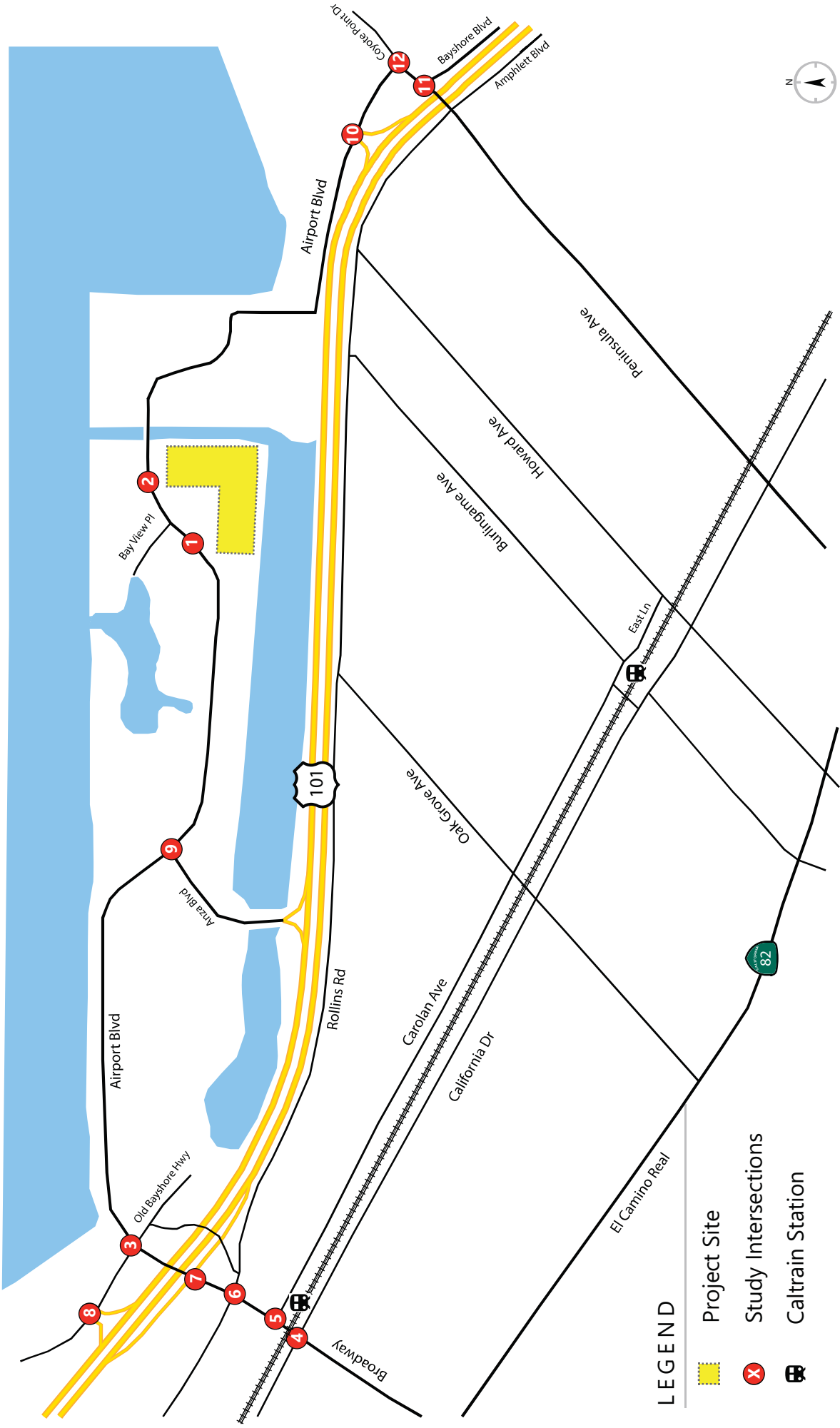
The traffic analysis is based on the weekday a.m. and p.m. peak hour levels of service for ten signalized intersections and two unsignalized intersections. Of the twelve study intersections, none are designated as a Congestion Management Program (CMP) intersection.

This study addresses the following six traffic scenarios:

- **Existing Conditions** – This scenario evaluates the study intersections based on existing traffic volumes, lane geometry and traffic controls.

- **Existing plus Project Conditions** – This scenario is identical to Existing Conditions, but with the addition of traffic from the proposed project.
- **Background (Existing plus Approved Projects) Conditions** – This scenario is similar to Existing Conditions, but with the addition of traffic from approved and reasonably foreseeable developments within the vicinity of the proposed project.
- **Background plus Project Conditions** – This scenario is identical to Background Conditions, but with the addition of traffic from the proposed project.
- **Cumulative Conditions (2040)** – This scenario considers the development of the city and surrounding communities to the year 2040. Traffic volumes for nine of the study intersections under Cumulative 2040 conditions were taken from the City’s recent General Plan Update EIR. The remaining three intersections were expanded using growth factors.
- **Cumulative plus Project Conditions** – This scenario is identical to Cumulative Conditions, but with the addition of traffic from the proposed project.

Figure 1: Vicinity Map



LEGEND




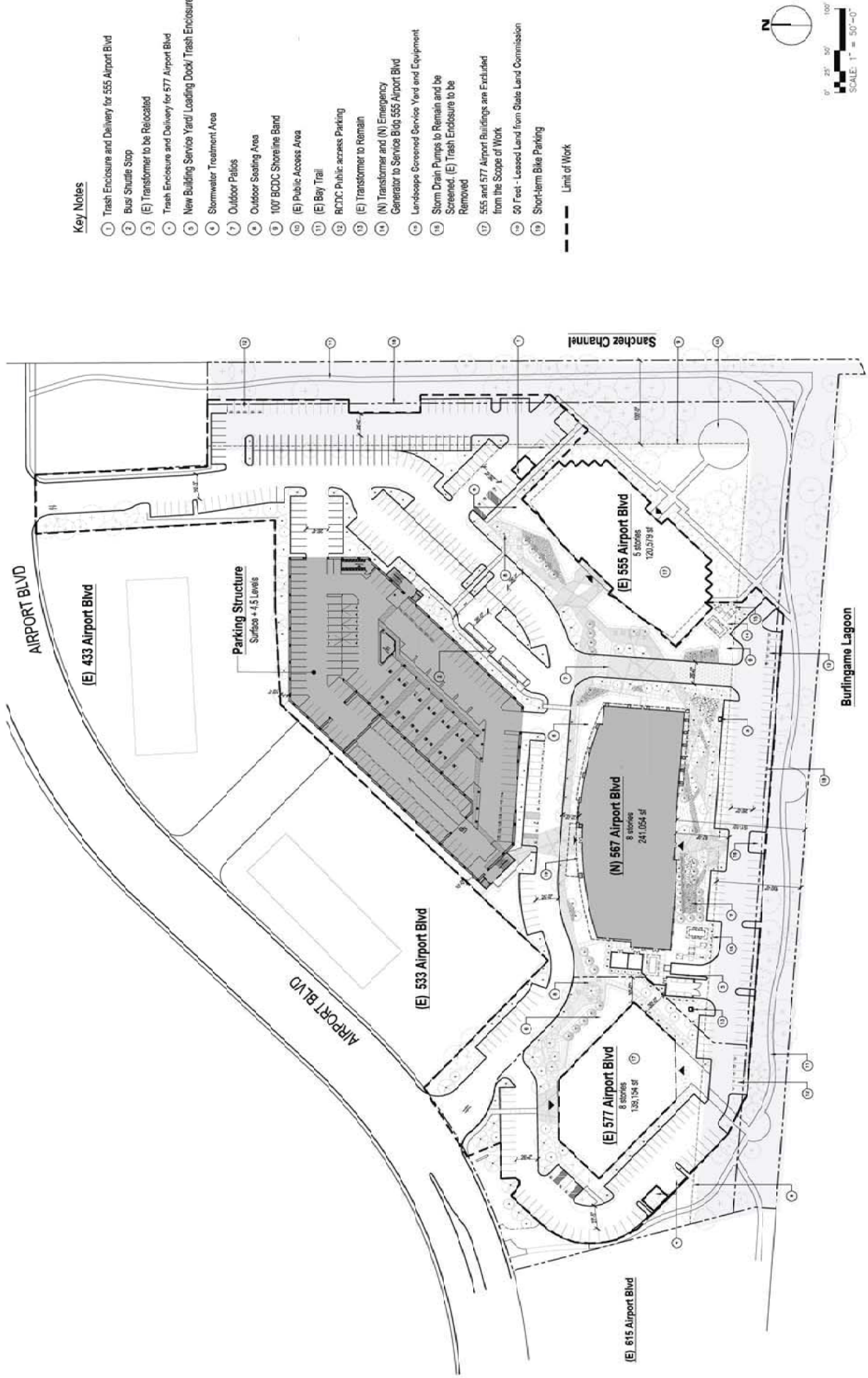
-  Project Site
-  Study Intersections
-  Caltrain Station



Figure 2: Project Site Plan



## 2.0 STUDY METHODOLOGY

Traffic impacts related to the proposed project were evaluated for both compliance with applicable regulatory documents and environmental significance as defined in the California Environmental Quality Act (CEQA). In accordance with the *Technical Advisory* published by the Governor’s Office of Planning and Research (OPR), a qualitative and quantitative VMT analysis forms the basis of the CEQA analysis for the proposed project. As of July 1, 2020, intersection level of service (LOS) can no longer be used to determine significant impacts for the purpose CEQA. Although level of service is no longer used for identifying impacts under CEQA, level of service analysis is still used for determining consistency with adopted agency plans and standards.

### 2.1 VEHICLE MILES TRAVELED

This study includes a qualitative and quantitative analysis of VMT generated by the proposed project. The qualitative analysis discusses the general characteristics of daily VMT generated by the proposed land use and how VMT characteristics of the project site would be changed with the proposed project. Because SB 743 is intended to encourage the development of communities that reduce vehicular GHG with land use patterns that site residences near the employment and commercial sites residents visit frequently, and because the VMTs of freight/delivery trips are not relevant to this purpose, those trips were not included in this VMT analysis. As the City of Burlingame does not have an adopted VMT standard or guidelines, this study uses guidelines and recommendations provided in the OPR *Technical Advisory*.

For office projects, the OPR *Technical Advisory* recommends that lead agencies analyze the home-based commute VMT per employee that would be generated at the project site. The advisory provides several recommended screening criteria lead agencies may consider in determining whether detailed VMT analysis is required. When such analysis is required, projects that are similar to existing nearby uses can be evaluated based on existing VMT at the project location. Existing VMT may be determined through use of a travel demand model. The City/County Association of Governments of San Mateo County (C/CAG) licenses the countywide travel demand model for San Mateo County from the Santa Clara County Valley Transportation Authority (VTA). The C/CAG-VTA model is optimized for use in Santa Clara and San Mateo Counties.

#### **Recommended Screening Criteria**

The OPR advisory suggests the following screening criteria that lead agencies may use for identifying projects that can be presumed to have a less-than-significant impact:

- Small projects, typically generating or attracting fewer than 110 trips per day
- Map based screening: residential and office projects located in areas with low VMT, and that incorporate similar features, will tend to exhibit similarly low VMT.
- Near high quality transit stop/station, if certain density, land use, and parking criteria are met
- Locally serving retail projects up to 50,000 sq. ft.
- 100 percent affordable housing units at infill locations
- Institutional/government and public service uses
- Projects located in low VMT zones (residential, office, and mixed use)

### **Significance Standards**

The state of California provides lead agencies latitude in adopting standards of significance for evaluating VMT impacts associated with land use projects. For office projects, the OPR advisory recommends the following threshold:

- A proposed project exceeding a level of 15 percent below existing regional VMT per employee may indicate a significant transportation impact.

Lead agencies are provided latitude in determining the appropriate region for considering employment VMT. Consistent with methodologies adopted by congestion management agencies in Santa Clara County (VTA), Alameda County (Alameda CTC), and Contra Costa County (CCTA), this study uses the countywide employment VMT of 16.74 as the basis for findings of significance.

### **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 best operating conditions (free-flow) and F the worst (severely congested flow with high delays). Intersections generally are the capacity-controlling locations with respect to traffic operations on arterial and collector streets in urban areas.

#### **Signalized Intersections**

The study intersections under traffic signal control were analyzed using either the 2010 Highway Capacity Manual (HCM) Operations Methodology for signalized intersections described in Chapter 18 (HCM 2010), or the HCM 2000 methodology. Three of the study intersections (Broadway & US-101 SB Ramps, N. Bayshore Blvd & Peninsula Ave, and Airport Blvd & Coyote Point Dr/Peninsula Ave) use non-standard signal phasing and as such were unable to be analyzed using HCM 2010. For these three intersections, HCM 2000 was utilized. In all scenarios, signal timing was optimized where appropriate.

These methodologies determine LOS based on average control delay per vehicle for the overall intersection during peak hour intersection operating conditions. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The average control delay for signalized intersections was calculated using Synchro 10 analysis software and was correlated to a LOS designation as shown in **Table 1**.

#### **Unsignalized Intersections**

The study intersections under stop control (unsignalized) were analyzed using the 2010 HCM Operations Methodology for unsignalized intersections described in Chapter 20 (HCM 2010). LOS ratings for stop-sign controlled intersections are based on the average control delay expressed in seconds per vehicle. At the side street, one-way or two-way stop controlled intersections, the control delay is calculated for each movement, not for the intersection as a whole. For approaches composed of a single lane, the control delay is computed as the average of all movements in that lane. The weighted average delay for the entire intersections is presented for all-way stop controlled intersections. The average control delay for

unsignalized intersections was calculated using Synchro 10 analysis software and was correlated to a LOS designation as shown in **Table 2**.

**Table 1: Signalized Intersection Delay and LOS Definitions**

Level of Service	Description	Average Control Delay
A	Signal progression is extremely favorable. Most vehicles arrive during the green phase and do not stop at all. Short cycle lengths may also contribute to the very low vehicle delay.	10.0 or less
B	Operations characterized by good signal progression and/or short cycle lengths. More vehicles stop than with LOS A, causing higher levels of average vehicle delay.	10.1 to 20.0
C	Higher delays may result from fair signal progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, though may still pass through the intersection without stopping.	20.1 to 35.0
D	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable signal progression, long cycle lengths, or high volume-to-capacity (V/C) ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 to 55.0
E	This is considered to be the limit of acceptable delay. These high delay values generally indicate poor signal progression, long cycle lengths, and high volume-to-capacity (V/C) ratios. Individual cycle failures occur frequently.	55.1 to 80.0
F	This level of delay is considered unacceptable by most drivers. This condition often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of the intersection. Poor progression and long cycle lengths may also be major-contributing causes of such delay levels.	greater than 80.0

Source: Highway Capacity Manual 2010, Chapter 18 (Transportation Research Board, 2010)  
Average Control Delay per Vehicle in seconds

**Table 2: Unsignalized Intersection Delay and LOS Definitions**

Level of Service	Description	Average Control Delay
A	Little or no traffic delay	≤10
B	Short Traffic delays	>10 – 15
C	Average traffic delays	>15 – 25
D	Long traffic delays	>25 – 35
E	Very long traffic delays	>35 – 50
F	Extreme traffic delays	>50

Source: Highway Capacity Manual 2010, Chapter 20 (Transportation Research Board, 2010)  
Average Control Delay per Vehicle in seconds

## 2.3 LEVEL OF SERVICE STANDARDS

Although level of service is no longer used for identifying impacts under CEQA, level of service analysis is still used for determining consistency with adopted agency plans and standards. Where standards refer to significant environmental impacts, this analysis instead identifies these as significant inconsistencies with adopted plans.

### **City of Burlingame**

The City of Burlingame General Plan EIR establishes significant impact criteria to determine if a project has significant adverse impacts on traffic conditions at a signalized or unsignalized intersection. Citywide, the LOS standard is LOS D. The projected-generated increase in traffic is considered to have a significant impact if it meets either of the following criteria:

- Degrades the AM or PM peak hour from an acceptable LOS D (55 seconds/vehicle) or better under Existing or No Project Conditions to an unacceptable LOS E or worse under Project Conditions except when LOS E is determined by the City of Burlingame as acceptable due to costs of mitigation or when there would be unacceptable impacts; or
- Degrades the AM or PM peak hour operating at LOS E or F under Existing or No Project Conditions by increasing the delay per vehicle by five seconds or more.

The City of Burlingame does not have specified criteria for determining significant impacts to unsignalized intersections. However, previous traffic studies completed for projects in the City of Burlingame have stated that a project would have a significant adverse impact on traffic conditions at an unsignalized intersection with an unacceptable level of service (LOS E or F) on any approach if the project adds at least 10 trips for any peak hour.

### **City of San Mateo**

The City of San Mateo has set the following guidelines to determine if a project creates a significant adverse impact on traffic conditions at a signalized intersection if for any peak-hour:

- The level of service at the intersection degrades from an acceptable mid-LOS D (average delay of less than 45 seconds) or better under existing conditions to an average delay of longer than 45 seconds; or
- The level of service at the intersection has an average delay longer than 45 seconds under existing conditions and the addition of the project trips causes the average delay at the intersection to increase by four (4) or more seconds

For unsignalized intersections, a significant impact is said to be satisfactorily mitigated when measures are implemented that would restore intersection level of service to pre-project Background or Cumulative conditions, or better.

## 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, existing traffic volumes and operations are presented for the study intersections, including the results of LOS calculations.

### 3.1 EXISTING SETTING AND ROADWAY SYSTEM

Relevant roadways adjacent to the project site are discussed below:

**US Highway 101 (US-101)** is an eight- to ten-lane freeway with a posted speed limit of 65 miles per hour (mph). The north-south freeway connects Burlingame with nearby cities, such as South San Francisco and San Mateo, and regional destinations, such as San Francisco and San Jose. It also provides access to the greater freeway network with direct connections to Interstate 80, Interstate 380, Interstate 280, State Route 92, and State Route 84.

**Airport Blvd** is a four lane arterial road that provides access to several hotels and office parks along the Burlingame shoreline, including the proposed project site. There is currently a dedicated left-turn lane near the project's western driveway, which provides direct access to the proposed project site. The posted speed limit along Airport Blvd is 35 mph. Airport Blvd has no on-street vehicle parking, but does include Class II bike lanes and continuous sidewalks directly adjacent to the project (east of the project, current construction activities temporarily interrupt the continuity of the sidewalks and bike lanes). The current project being constructed directly east of the proposed 567 Airport Blvd has resulted in a new alignment for Airport Blvd. just east of the project in conjunction with the construction of a new office complex. The alignment has changed by eliminating a 90 degree intersection and replacing it with a curving diagonal alignment located within the new office complex.

**Anza Blvd** is a short four-lane, north-south collector with a posted speed limit of 35 miles per hour near the project site. The facility provides direct access between Airport Blvd and NB US-101. Anza Blvd has no on-street parking south of Airport Blvd, but does have a Class I path along the west side of the roadway, providing pedestrian and bicycle access.

**Old Bayshore Highway** is a four to six-lane, east-west arterial with a posted speed of 35 mph. The facility provides access between Broadway and Airport Blvd to US-101 NB, as well as several hotels in the area. North of Burlingame, Old Bayshore Highway provides access to San Francisco International Airport. Near the study intersections, there are sidewalks on both sides of the street and bike lanes between Broadway and US-101 NB Ramps, and painted sharrows west of US-101 NB Ramps.

**Broadway** is a two to six-lane, north-south arterial with a posted speed of 25 to 35 mph. Broadway provides access to Burlingame's Broadway business district, the Broadway Caltrain station, and to US-101 SB ramp intersections. Sidewalks are provided on both sides, and bike lanes exist north of Rollins Way. Adjacent to Broadway is a pedestrian overpass over US-101.

**California Drive** is a two to four-lane arterial with a posted speed of 35 mph. California Drive extends from Millbrae BART to Peninsula Ave, where it continues into San Mateo as San Mateo Dr. It provides access between Broadway and Burlingame's downtown, as well as both Broadway and Burlingame Caltrain

stations. Sidewalks are provided on at least one side for the majority of California Dr, and bike lanes are provided on both sides west of Broadway.

**Rollins Road** is a two to four-lane, generally east-west arterial with a posted speed limit of 35 mph. Rollins Road runs parallel to US-101 and connects Burlingame to both Millbrae and San Mateo. The facility has sidewalks on at least one side for most of its length, and connects to the Broadway/US-101 pedestrian bridge.

**Carolan Dr** is a two-lane arterial/collector roadway that extends from Broadway to North Ln, where it becomes East Ln. West of Oak Grove Ave, Carolan Dr is designated as a Neighborhood Arterial, while east of Oak Grove Ave it is a designated Neighborhood Collector. It provides access to residential uses and Burlingame High School. Bike lanes are provided on both sides between Broadway and Oak Grove Ave, as well as sidewalks on at least one side. Carolan Ave has a speed limit of 35 mph.

**Peninsula Ave/Coyote Point Dr** is a two to four-lane arterial roadway in San Mateo that extends from El Camino Real to just north of US-101, where it dead ends at Coyote Point Recreation Area. For part of its length, Peninsula Ave forms the boundary between Burlingame and San Mateo. Sidewalks are provided on both sides for the majority of its length. Peninsula Ave has a speed limit of 35 mph.

**N. Bayshore Blvd** is a two-lane arterial roadway in San Mateo that acts as a frontage road for US-101 NB. It extends from Peninsula Ave to the US-101/3<sup>rd</sup> Ave interchange, where it bends and becomes 2<sup>nd</sup> Ave. N. Bayshore Blvd provides access for nearby residential areas to US-101 NB. A Class I path is available on the north side of the roadway between Peninsula Ave and E. Poplar Ave. N. Bayshore Blvd has a speed limit of 35 mph.

### 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 consist 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.

In the project vicinity, most of the study intersections which are signalized are equipped with countdown pedestrian signal heads and cross walks. Only the intersection of Old Bayshore Hwy & US-101 NB does not have crosswalks or pedestrian signal heads. It should be noted that not all of the signalized study intersections have crosswalks on all legs of the intersection. Crosswalks are not present at either of the unsignalized intersections, located at both of the project driveways. The project area has a mostly complete network of sidewalks. Currently, there are continuous sidewalks on both sides of the roadway on Broadway, Peninsula Ave, and parts of Airport Blvd, Rollins Rd, and Old Bayshore Hwy. Sidewalks are present on one side of the street on portions of Airport Blvd, Rollins Rd, Carolan Ave, California Dr, and Bayshore Blvd. There is a sidewalk gap of approximately 0.4 miles on Airport Blvd between Peninsula Ave and the Burlingame City Limit. Several off-street Class I paths exist in the area of Airport Blvd; most of

which provide access to the San Francisco Bay shoreline. At the project site, there is direct access to the San Francisco Bay Trail on the project's eastern and southern boundaries. There is also a Class I pedestrian bridge over US-101 at Broadway. The existing pedestrian facilities in the study area are shown in **Figure 3a**.

### 3.3 EXISTING BICYCLE FACILITIES

Bicycle paths, lanes and routes are typical examples of bicycle transportation facilities, which are defined by Caltrans as being in one of the following four classes:

Class I Multiuse Trail – a completely separated facility designed for the exclusive use of bicyclists and pedestrians with crossing points minimized.

Class II Bike Lane – a designated lane for the exclusive or semi-exclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited, but with vehicle parking and cross-flows by pedestrians and motorists permitted.

Class III Bike Route – a route designated by signs or pavement markings and shared with pedestrians and motorists.

Class IV Separated Bikeway – an on-street facility reserved for use by bicyclists, with physical separation between the bikeway and travel lanes. Physical separation consists of vertical elements that may include curbs, landscaping, bollards, or parking lanes.

The San Francisco Bay Trail is a Class I multiuse trail that passes close to the project site, running approximately parallel to Airport Blvd along the San Francisco Bay shoreline to the north and south of the project site. A small amount of parking at the project site is provided for trail users and direct access is located along the southern and eastern boundaries of the project site. Class I paths also exist east of Airport Blvd and continue into San Mateo, where they connect with Coyote Point Recreation Area. Additional Class I connections are proposed in the project area in the Burlingame General Plan; mostly to connect existing trails with one another and provide more shoreline access.

Class II bike lanes are provided on portions of Airport Blvd, California Dr, Rollins Rd, Carolan Ave, Howard Ave, and Peninsula Ave. On California Dr and Carolan Ave, the Class II bike facilities have been enhanced with high-visibility green paint. Currently, the City of Burlingame is updating its Bicycle and Pedestrian Master Plan; which will include new projects proposed for implementation. The most recent update to this plan occurred in 2004. The existing bicycle facilities in the study area are shown in **Figure 3b**.

### 3.4 EXISTING TRANSIT FACILITIES

Existing transit service to the project area is provided by the San Mateo County Transit District (SamTrans), Caltrain, the Burlingame Trolley, and the Burlingame Bayside Shuttle. Such services are described below and in **Table 3**.

**SamTrans** - SamTrans provides bus service to various communities in San Mateo County, including Burlingame. It operates local, express, and school buses and is a paratransit service provider. Buses are generally equipped with front-loading racks that can hold up to two bicycles. In the immediate vicinity of the proposed project, Routes ECR, #46, #292, #397, and #398 provide service to the project site and vicinity. The closest SamTrans bus stop is located 500' west of the Bayshore Hwy & Airport Blvd/Broadway intersection, served by Route 292.

**Caltrain** - Caltrain provides commuter rail service in and between San Francisco, the Peninsula, and the South Bay. Caltrain currently operates between downtown San Francisco and San Jose Diridon station, with limited trips further south to Gilroy. Caltrain operates between 4:30 a.m. and 1:30am on weekdays. During the a.m. and p.m. peak commute periods, train service runs at 30-minute intervals to each destination. The closest Caltrain stations to the project site are the Broadway station (located at Broadway & California Dr) and the Burlingame Station (located at Burlingame Ave & California Dr). However, the Broadway station currently only has weekend service between the hours of 8:00am and 11:00pm, operating at 60-minute intervals. The closest station to the project site with weekday service is Burlingame station. Caltrain also provides a direct connection to Bay Area Rapid Transit (BART) at the Millbrae station.

**Burlingame Trolley** – The Burlingame Trolley is a free service provided by the City of Burlingame, the Broadway Business Improvement District, the Downtown Burlingame Improvement District, and several hotels in the area. It currently operates between 11:50am and 9:44pm, seven days a week, circulating between Downtown Burlingame, the Broadway Business District, Burlingame Caltrain, and several hotels along Airport Blvd. Currently, the closest stop to the project area is located at the Hilton Hotel, directly across the street from the project site.

**Burlingame Bayside Shuttle** – The Burlingame Bayside Shuttle is a commuter shuttle operated by the San Mateo County Transportation Demand Management Agency, also known as Commute.org. The shuttle operates during the peak commute hours of 7:00am-9:45am and 3:52pm-6:53pm, and connects commuters between the Millbrae BART/Caltrain station and office parks and hotels along Rollins Rd, Adrian Rd, Bayshore Hwy, and Airport Blvd. The closest stop to the project site is located directly adjacent to the project at the corner of Airport Blvd and Bay View Pl.

The existing transit facilities in the study area are shown in **Figure 3c**.

**Table 3: Existing Transit Services**

Route #	From	To	Weekdays		Weekend	
			Operating Hours	Headway (minutes)	Operating Hours	Headway (minutes)
ECR	Daly City BART	Palo Alto Transit Center	4:00 a.m. – 1:45 a.m.	15-30	4:45 a.m. – 2:00 a.m.	20-30
46	California/Broadway	Burlingame School	AM/PM peak only	2 AM runs, 4 PM runs	...	...
292	Hillsdale Mall San Mateo	Drumm/Clay San Francisco	4:00 a.m.-2:40 a.m.	30 peak/60 off peak	4:00 a.m.- 2:30 a.m.	30 peak/60 off peak
397	Palo Alto Transit Center	Drumm/Clay San Francisco	12:45 a.m.- 6:15 a.m.	60	...	...
398	Redwood City Transit Center	Mission/Clay San Francisco	5:00 a.m. – 11:00 p.m.	45 peak/ 60 off-peak	6:00 a.m. – 11:00 p.m.	60
Caltrain	San Jose/Gilroy	San Francisco	5:30 a.m.- 12:35 a.m.	30 peak/60 off peak	8:00 a.m. – 11:40 p.m.	90
Trolley	Downtown Burlingame	Airport/Bay View	11:50 a.m.- 9:45 p.m.	45	11:50 a.m.- 9:45 p.m.	45
Bayside Shuttle	Millbrae BART	Airport/Bay View	AM/PM peak only	15-30 min in each peak	...	...

Source: SamTrans, Caltrain, San Mateo Silicon Valley Visitors Bureau, Commute.org

### 3.5 EXISTING TRAFFIC CONDITIONS

TJKM evaluated existing traffic conditions at selected study intersections during the a.m. and p.m. peak hours on a typical weekday. Intersection turning movement counts of vehicles, bicycles, and pedestrians were collected during weekday a.m. peak period (7:00-9:00 a.m.) and p.m. peak period (4:00-6:00 p.m.) on May 30, 2018. For ten of the study intersections, counts were utilized from the Burlingame Topgolf TIS completed by Fehr & Peers as it was recent and close to the proposed project. For the two project driveways, counts were estimated based on ITE Trip Generation rates and counts from nearby intersections.

Turning movement counts and all traffic count data sheets that were available to TJKM are included in **Appendix A**. Note that in the Topgolf study the volumes along the Broadway corridor were balanced to account for driveway access, and in TJKM’s study volumes were balanced at study intersections #3, 8, 9, and 10; therefore some intersections may not exactly match the volumes found in **Appendix A**. Lane geometries and traffic control at each study intersection are illustrated in **Figure 3d** and in each subsequent figure with turning movement counts.

Figure 3a: Existing Pedestrian Facilities



LEGEND







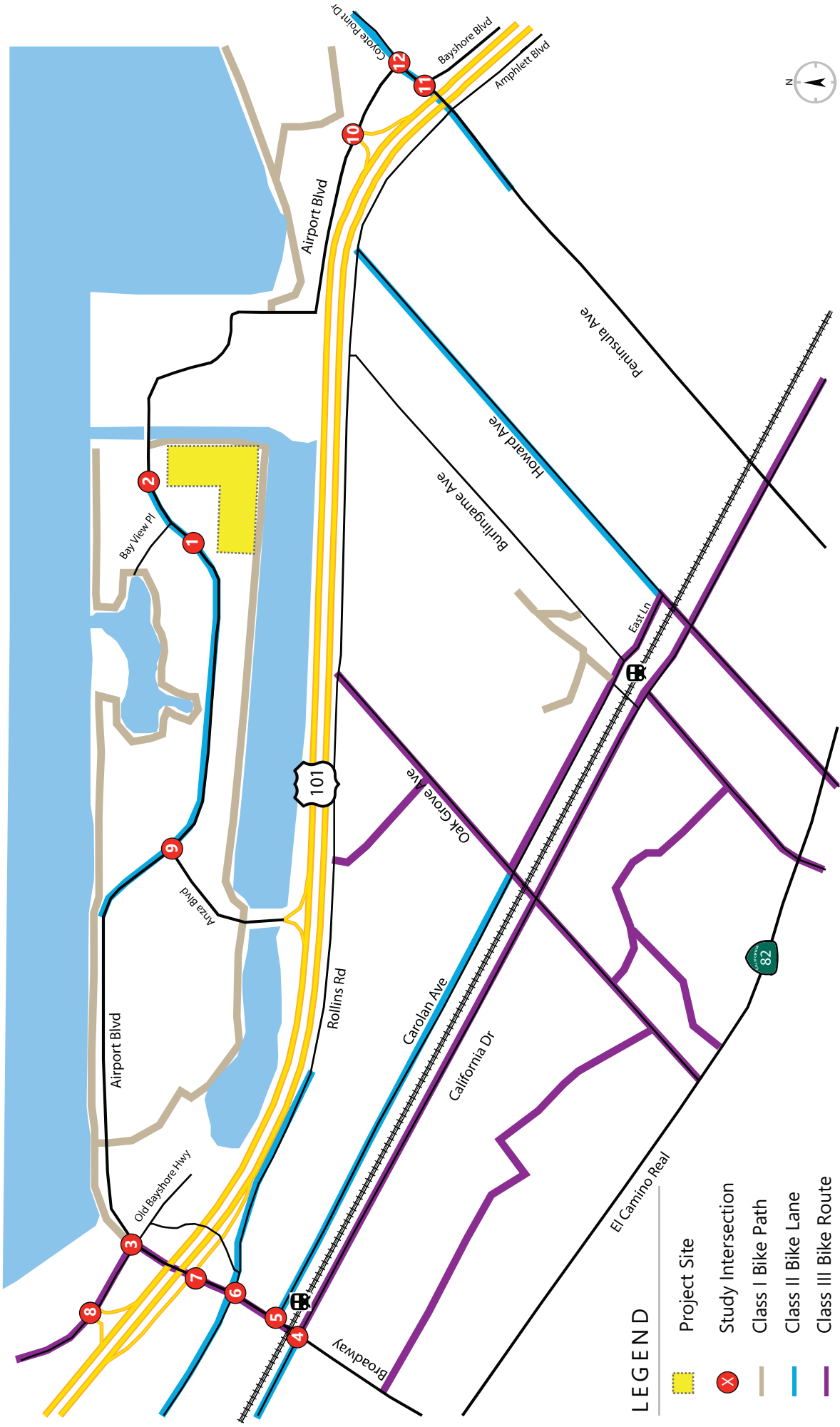
-  Project Site
-  Study Intersection
-  Sidewalk (Both Sides)
-  Sidewalk (One Side)
-  Crosswalk
-  Sidewalk Gap

Figure 3b: Existing Bicycle Facilities



LEGEND

-  Project Site
-  Study Intersection
-  Class I Bike Path
-  Class II Bike Lane
-  Class III Bike Route

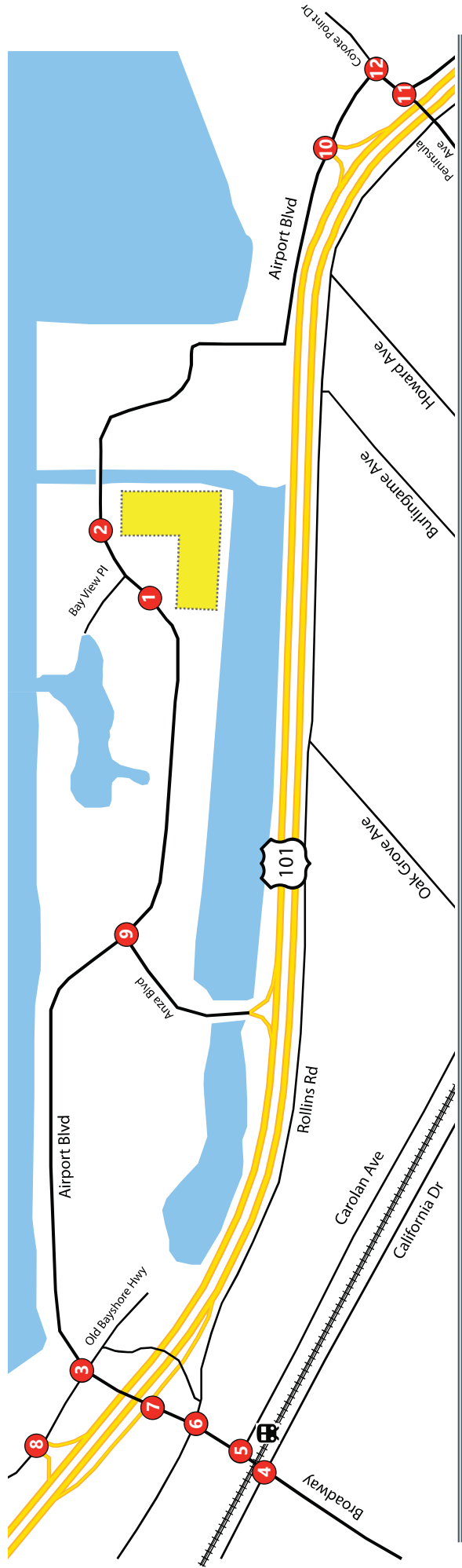
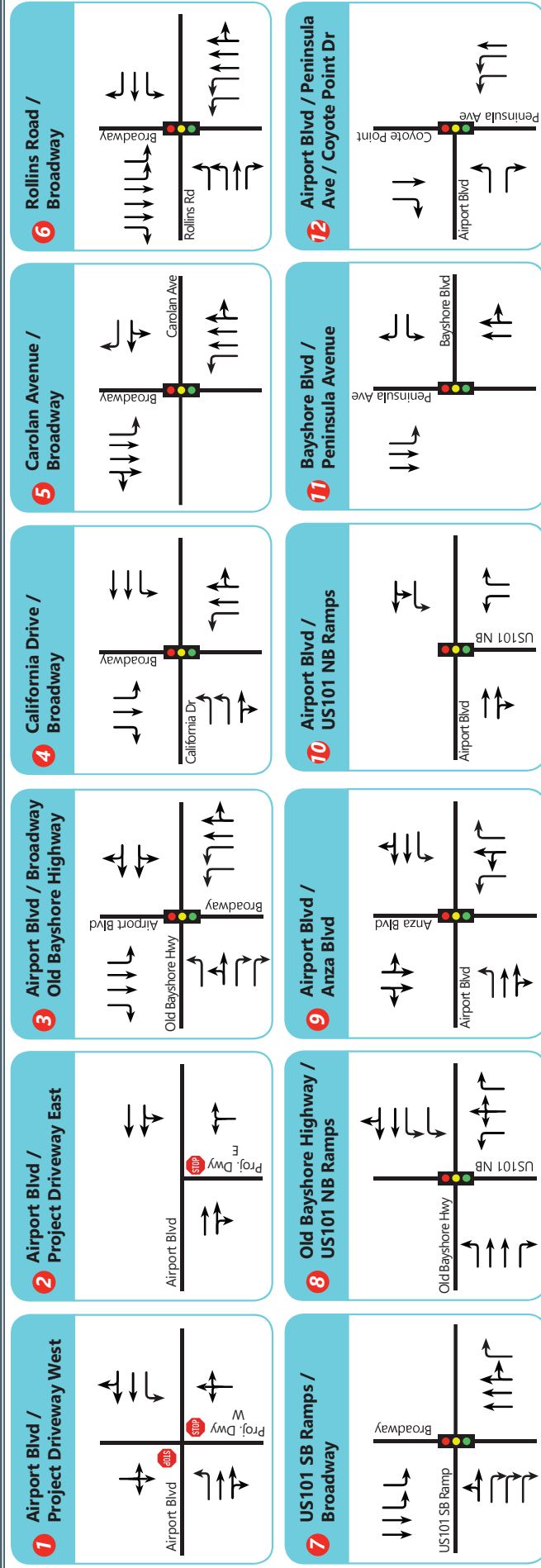


Figure 3c: Existing Transit Facilities



Figure 3d: Existing Conditions Lane Geometry

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

Caltrain Station

Study Intersections

Project Site



### 3.6 INTERSECTION LEVEL OF SERVICE ANALYSIS – EXISTING CONDITIONS

This scenario evaluates the study intersections based on existing traffic volumes, lane geometry and traffic controls, as described above. The results of the LOS analysis using the HCM 2010, HCM 2000 methodology and Synchro 10 software program for Existing Conditions are summarized in **Table 4**. Field verification of existing intersections, lane configurations, and traffic controls were also conducted and provided the basis for the LOS analysis for Existing Conditions. Where appropriate, signal timing was optimized in Synchro 10.

Under this scenario, all of the study intersections operate within applicable jurisdictional standards during the a.m. peak hour, and all study intersections operate acceptably in the p.m. peak hour. LOS worksheets are provided in **Appendix B**.

**Table 4: Intersection Level of Service Analysis – Existing Conditions**

ID	Intersection	Intersection Control	Peak Hour	Existing Conditions	
				Average Delay <sup>1</sup>	LOS <sup>2</sup>
1	Airport Blvd & Project Driveway W	One-Way Stop Control	AM	12.3	B
			PM	13.6	B
2	Airport Blvd & Project Driveway E	One-Way Stop Control	AM	9.2	A
			PM	9.8	A
3	Bayshore Hwy & Broadway/Airport Blvd	Signal	AM	24.3	C
			PM	30.1	C
4	California Dr & Broadway	Signal	AM	31.9	C
			PM	31.0	C
5	Carolan Dr & Broadway	Signal	AM	14.5	B
			PM	12.4	B
6	Rollins Rd & Broadway	Signal	AM	21.5	C
			PM	22.2	C
7	Broadway & US-101 SB Ramps*	Signal	AM	25.6	C
			PM	20.5	C
8	Bayshore Hwy & US-101 NB Ramps	Signal	AM	25.2	C
			PM	28.9	C
9	Airport Blvd & Anza Blvd	Signal	AM	30.1	C
			PM	32.2	C
10	Airport Blvd & US-101 NB Ramps	Signal	AM	15.3	B
			PM	17.1	B
11	N. Bayshore Blvd & Peninsula Ave*	Signal	AM	14.3	B
			PM	16.2	B
12	Airport Blvd & Coyote Point Dr/Peninsula Ave*	Signal	AM	17.4	B
			PM	16.6	B

Notes:

AM – morning peak hour, PM – evening peak hour

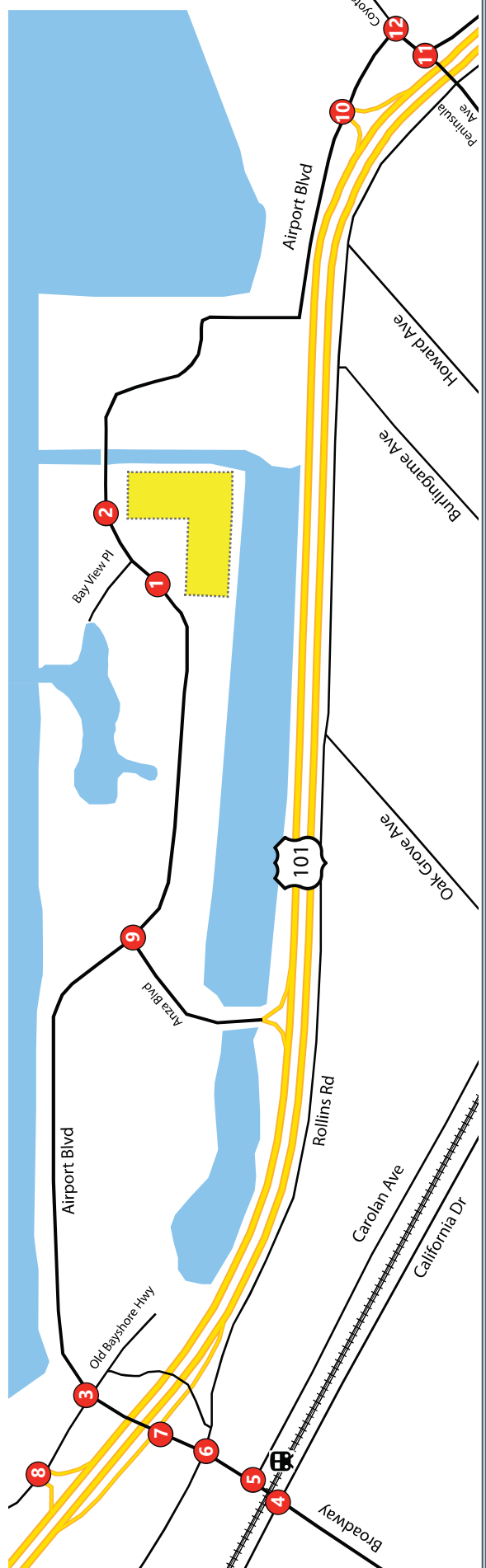
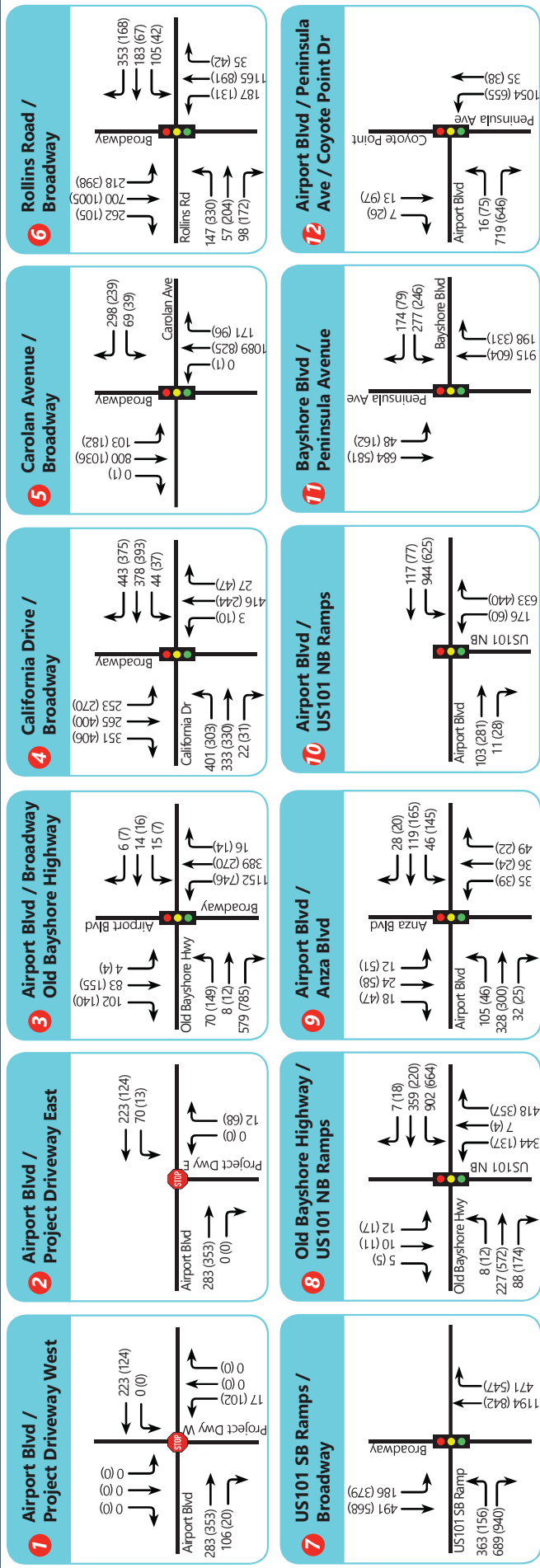
1. Whole intersection weighted average control delay expressed in seconds per vehicle for signalized and all-way stop controlled intersections. Total control delay for the worst movement is presented for side-street stop – controlled intersections.

2. LOS = Level of Service

\* LOS calculated using HCM 2000 methodology

**Bold** indicates unacceptable operational conditions based on applicable jurisdictional standards.

Figure 4: Existing Conditions Peak Hour Traffic Volumes



## 4.0 EXISTING PLUS PROJECT CONDITIONS

This analysis scenario presents the impacts of the proposed project at the study intersections and surrounding roadway system. This scenario is identical to Existing Conditions, but with the addition of traffic from the proposed project. The project would add a 241,054 square foot (sq. ft.) office building adjacent to two existing office buildings with a combined square footage of 259,733. The existing buildings are currently occupied by a mixture of office tenants.

### 4.1 PROJECT TRIP GENERATION

TJKM developed estimated project trip generation for the proposed project based on published trip generation rates from the ITE publication *Trip Generation (10<sup>th</sup> Edition)*. TJKM used published trip rates for the ITE land use General Office Building (ITE Code 710) for this project. The proposed project is expected to generate 2,338 total daily trips, including 278 new a.m. peak hour trips (239 in, 39 out) and 276 new p.m. peak hour trips (44 in, 232 out).

Since the proposed project is not replacing any existing uses, existing driveway counts had to be estimated, in order to establish the peak hour trips generated by the existing uses. The counts were generated through the use of ITE Trip Generation rates and based on occupancy rates of the existing buildings provided by the property managers. These counts were incorporated into the Existing Conditions traffic counts and utilized under the Existing Conditions and Background Conditions scenarios. For the Cumulative Conditions scenario, full occupancy of the existing buildings was assumed and driveway counts were based on the full square footage of the buildings, calculated using ITE rates. No new driveway counts were collected, due to the inability to collect traffic counts during the COVID-19 pandemic.

It should be noted that for the purposes of this analysis, the square footage of the building was assumed to be 240,000 sq. ft. based on a now outdated plan. Subsequent design refinements (after these analyses were completed) resulted in an actual square footage of the proposed building of 241,054 sq. ft. The slight increase in building area does not impact the results and conclusions of this analysis.

**Table 5** shows the trips expected to be generated by the proposed project.

**Table 5: Project Trip Generation**

Land Use (ITE Code)	Size	Daily		A.M. Peak					P.M. Peak				
		Rate	Trips	Rate	In:Out	In	Out	Total	Rate	In:Out	In	Out	Total
General Office Building (710)	240.00 KSF	9.74	2,338	1.16	86:14	239	39	278	1.15	16:84	44	232	276
<b>Total Trips</b>			<b>2,338</b>			<b>239</b>	<b>39</b>	<b>278</b>			<b>44</b>	<b>232</b>	<b>276</b>

Notes:

1. *Trip Generation, 10<sup>th</sup> Edition*, Institute of Transportation Engineers (ITE), 2017

## 4.2 PROJECT TRIP DISTRIBUTION AND ASSIGNMENT

Trip distribution is a process that determines in what proportion vehicles would be 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 calculated trip distribution. Trip distribution assumptions for the proposed development project were developed based on the existing travel patterns and TJKM's knowledge of the study area.

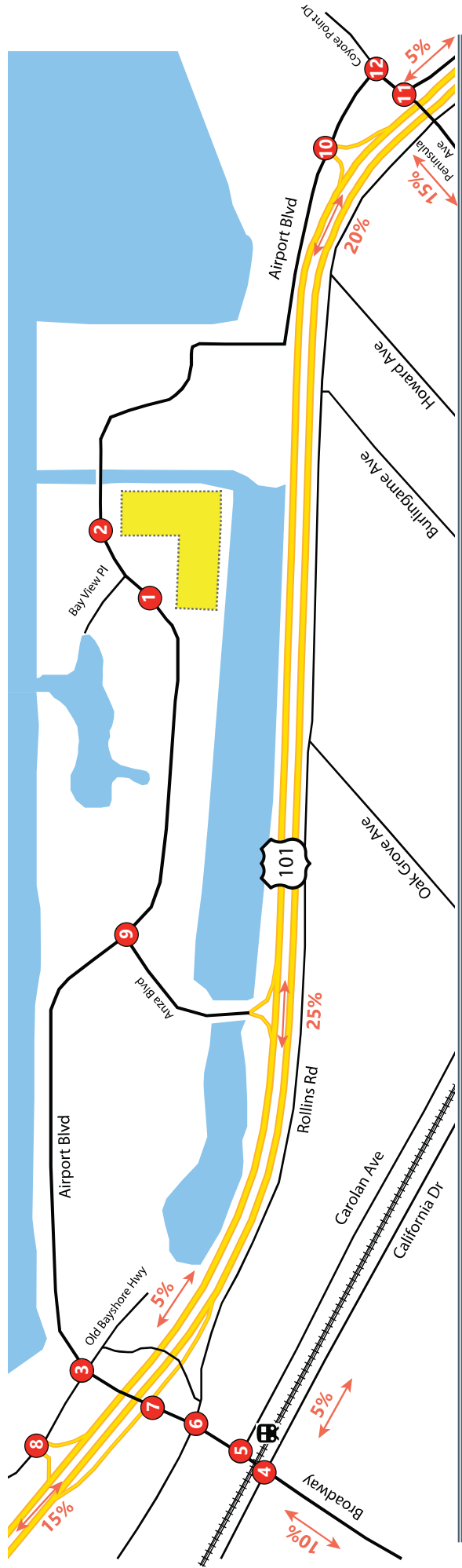
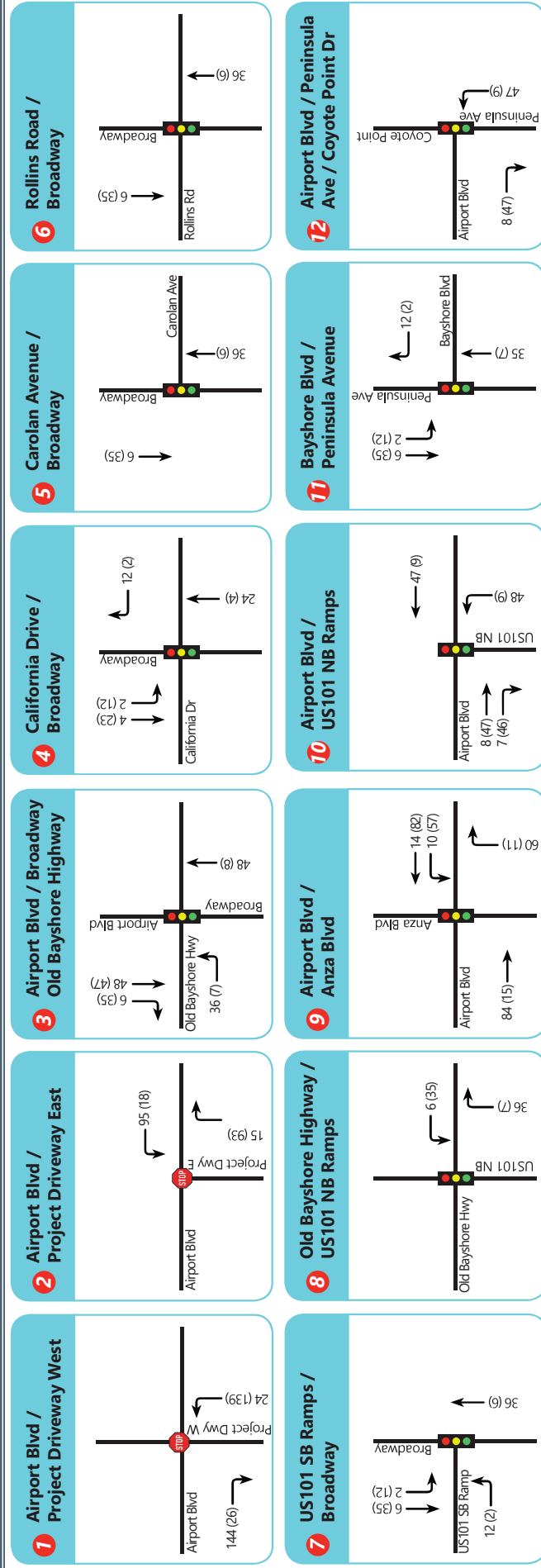
The distribution assumptions for the proposed project are as follows:

- 25 percent to/from Anza Blvd & US-101 NB to the west
- 20 percent to/from Airport Blvd & US-101 NB to the east
- 15 percent to/from Bayshore Hwy & US-101 NB to the west
- 15 percent to/from Peninsula Ave to the southeast
- 10 percent to/from Broadway to the southwest
- 5 percent to/from US-101 SB via Broadway
- 5 percent to/from California Dr east of Broadway
- 5 percent to/from N. Bayshore Blvd east of Peninsula Ave

**Figure 5** illustrates the trip distribution and net project trip assignment at the study intersections expected from the proposed development. The assigned project trips were then added to traffic volumes under Existing Conditions to generate Existing plus Project Conditions traffic volumes.

Figure 5: Project Trip Distribution and Assignment

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- Project Site
- Caltrain Station
- Study Intersections
- AM Peak Hour Volumes
- PM Peak Hour Volumes
- Trip Distribution



4.3 INTERSECTION LEVEL OF SERVICE ANALYSIS – EXISTING PLUS PROJECT CONDITIONS

The intersection LOS analysis results for Existing plus Project Conditions are summarized in **Table 6**.

Under this scenario, all of the study intersections would continue to operate within applicable jurisdictional standards during a.m. peak hour, and all study intersections operate acceptably in the p.m. peak hour. The addition of project trips caused the intersection of Airport Blvd & Anza Blvd. to experience a large increase in delay of 20.6 seconds. However the intersection would continue to operate acceptably. Based on the City of Burlingame and City of San Mateo level of service criteria, the project is expected to have a **less-than-significant impact** at all the study intersections.

**Figure 6** shows projected turning movement volumes at all the study intersections for Existing plus Project Conditions. LOS and queueing worksheets are provided in **Appendix C**.

**Table 6: Intersection Level of Service Analysis – Existing plus Project Conditions**

ID	Intersection	Intersection Control	Peak Hour	Existing Conditions				
				Average Delay <sup>1</sup>	LOS <sup>2</sup>	Average Delay <sup>1</sup>	LOS <sup>2</sup>	Change in Delay <sup>3</sup>
1	Airport Blvd & Project Driveway W	One-Way Stop Control	AM	12.3	B	13.8	B	1.5
			PM	13.6	B	18.9	C	5.3
2	Airport Blvd & Project Driveway E	One-Way Stop Control	AM	9.2	A	9.3	A	0.1
			PM	9.8	A	10.6	B	0.8
3	Bayshore Hwy & Broadway/Airport Blvd	Signal	AM	24.3	C	24.2	C	-0.1
			PM	30.1	C	30.0	C	-0.1
4	California Dr & Broadway	Signal	AM	31.9	C	32.0	C	0.1
			PM	31.0	C	31.2	C	0.2
5	Carolan Dr & Broadway	Signal	AM	14.5	B	14.6	B	0.1
			PM	12.4	B	12.3	B	-0.1
6	Rollins Rd & Broadway	Signal	AM	21.5	C	21.7	C	0.2
			PM	22.2	C	22.2	C	0.0
7	Broadway & US-101 SB Ramps*	Signal	AM	25.6	C	27.1	C	1.5
			PM	20.5	C	20.9	C	0.4
8	Bayshore Hwy & US-101 NB Ramps	Signal	AM	25.2	C	26.1	C	0.9
			PM	28.9	C	30.9	C	2.0
9	Airport Blvd & Anza Blvd	Signal	AM	30.1	C	30.7	C	0.6
			PM	32.2	C	52.8	D	20.6
10	Airport Blvd & US-101 NB Ramps	Signal	AM	15.3	B	16.0	B	0.7
			PM	17.1	B	18.7	B	1.6
11	N. Bayshore Blvd & Peninsula Ave*	Signal	AM	14.3	B	14.6	B	0.3
			PM	16.2	B	16.4	B	0.2
12	Airport Blvd & Coyote Point Dr/Peninsula Ave*	Signal	AM	17.4	B	18.2	B	0.8
			PM	16.6	B	16.6	B	0.0

Notes: AM – morning peak hour, PM – evening peak hour, Weekend – Saturday noon peak hour,

**Bold** indicates unacceptable operational conditions based on applicable jurisdictional standards. **Red** indicates significant impact.

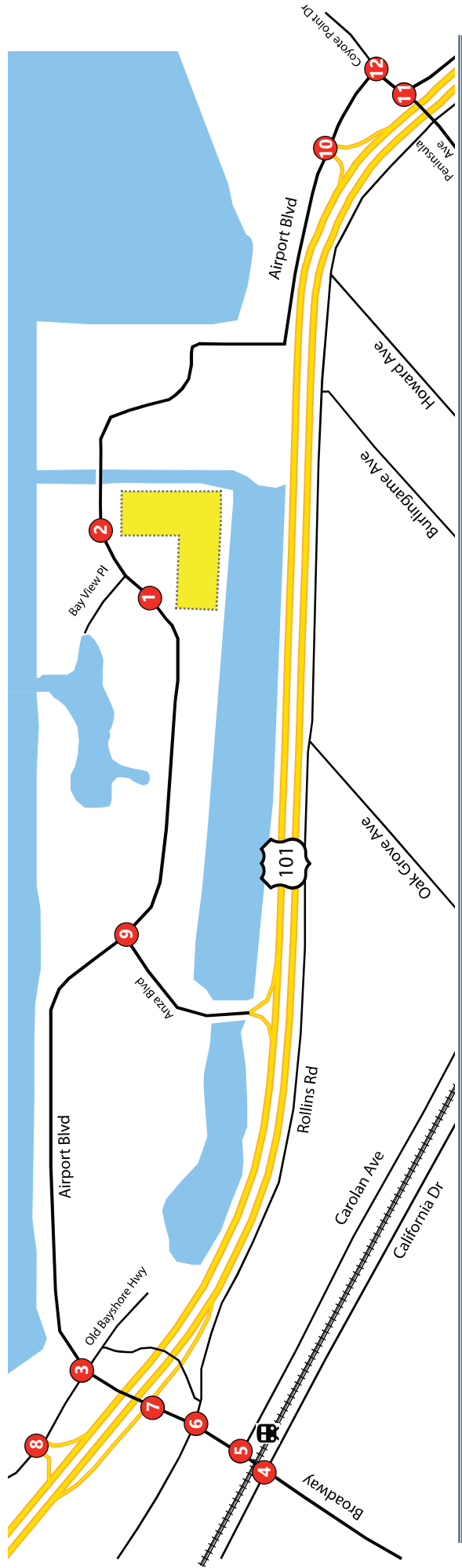
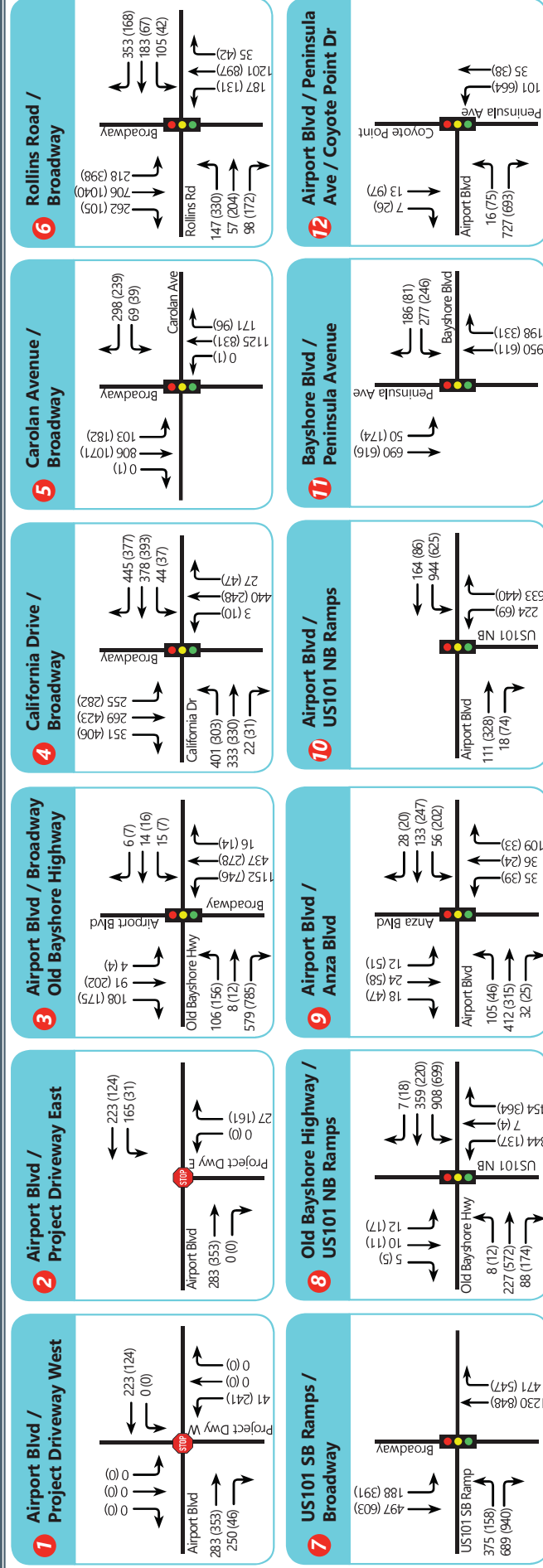
1. Whole intersection weighted average control delay expressed in seconds per vehicle for signalized and all-way stop controlled intersections. Total control delay for the worst movement is presented for side-street stop – controlled intersections.

2. LOS = Level of Service

3. Change in average delay between Existing and Existing plus Project Conditions. Average delay may be reduced with the addition of project traffic to non-critical movements.

\*LOS calculated using HCM 2000 methodology

Figure 6: Existing Plus Project Peak Hour Traffic Volumes



## 4.2 INTERSECTION QUEUING ANALYSIS

The 95<sup>th</sup> percentile queue lengths were calculated for informational purposes at the signalized study intersections under Existing and Existing plus Project Conditions. **Table 7** details the existing traffic volumes, added project trips, and queue lengths at all dedicated turn lanes at the signalized study intersections. For locations with dual turn lanes providing varying amounts of storage, the average storage length is provided. The 95<sup>th</sup> percentile queue lengths are rounded to the nearest five feet and assume an average vehicle length of 25 feet. Queue lengths are averaged among all lanes within a lane group.

Queuing operations were analyzed at all signalized study intersections with dedicated left- and right-turn lanes, under Existing, Background, and Cumulative Conditions, with and without the proposed project. Under Existing Conditions, the intersections of Broadway & Rollins Rd, Broadway & US-101 SB Ramps, Bayshore Hwy & US-101 NB Ramps, Airport Blvd & Anza Blvd, N. Bayshore Blvd & Peninsula Ave, and Airport Blvd & Coyote Point Dr/Peninsula Ave would experience queue overflows at one or more turn lanes, during one or both peak hours.

Under Existing plus Project Conditions, the same turn lanes would experience overflows during the same peak hours, plus the addition of the westbound left movement at Airport Blvd & Anza Blvd. The addition of project trips would create a new queue overflow of 65 feet at this turn lane, an 85 feet increase from Existing Conditions. A split phase signal timing with the conversion of the westbound through lane to a shared westbound through/left lane would help to mitigate the queues; however, the intersection still operates acceptably from an LOS standpoint. Elsewhere, the project would increase queues outside of the storage pocket by more than one car length at one additional intersection: Airport Blvd & Coyote Point Dr. /Peninsula Ave. However, at Airport Blvd & Coyote Point Dr/Peninsula Ave, the movement was already experiencing overflows in the Existing Conditions, and the project would only increase the queue by slightly over one car length. Nonetheless, TJKM adjusted the peak hour factor from 0.92 to 1.0 and the queue reduced below Existing No Project conditions. The project would increase all other Existing queue lengths by no more than one car length. Queuing worksheets for each scenario are provided in **Appendix B** and **Appendix C**.

Table 7. 95<sup>th</sup> Percentile Queue Lengths at Selected Turn Lanes

ID	Study Intersection	Lane Group	Storage Length	Peak Hour	Existing Volume	Existing Conditions	Existing plus Project Conditions	
						Queue Length	Queue Length	Change in Queue
3	Bayshore Hwy & Broadway/Airport Blvd	Eastbound Left	360	AM	70	55	75	20
				PM	149	75	80	5
		Southbound Left	210	AM	4	15	15	0
				PM	4	10	10	0
		Southbound Right	115	AM	102	25	30	5
				PM	140	30	50	20
4	Broadway & California Dr	Eastbound Left	225	AM	401	190	190	0
				PM	303	145	145	0
		Westbound Left	95	AM	44	55	55	0
				PM	37	50	50	0
		Westbound Right	350	AM	443	125	140	15
				PM	375	70	70	0
Northbound Left	50	AM	3	10	10	0		
		PM	10	15	15	0		
5	Broadway & Carolan Dr	Westbound Right	200	AM	298	60	60	0
				PM	239	45	45	0
		Northbound Left	40	AM	0	0	0	0
				PM	1	5	5	0
		Southbound Left	125	AM	103	80	80	0
				PM	182	115	115	0
6	Broadway & Rollins Rd	Eastbound Left	130	AM	147	70	70	0
				PM	330	<b>145</b>	<b>145</b>	0
		Eastbound Right	110	AM	98	15	15	0
				PM	172	35	35	0
		Westbound Right	160	AM	353	135	135	0
				PM	168	35	35	0
		Northbound Left	90	AM	187	75	75	0
				PM	131	60	60	0
		Southbound Left	200	AM	218	105	105	0
				PM	398	180	180	0
		Southbound Right	155	AM	262	50	50	0
				PM	105	20	20	0
7	Broadway & US-101 SB Ramps	Eastbound Right	200	AM	689	80	80	0
				PM	940	125	125	0
		Northbound Right	105	AM	471	<b>125</b>	<b>140</b>	15
				PM	547	65	65	0
8	Old Bayshore Hwy & US-101 NB Ramps	Eastbound Left	205	AM	8	20	20	0
				PM	12	25	25	0
		Eastbound Right	170	AM	88	5	5	0
				PM	174	50	50	0
		Northbound Left	130	AM	344	305	320	15
				PM	137	115	110	-5
9	Airport Blvd & Anza Blvd	Eastbound Left	90	AM	105	130	135	5
				PM	46	55	60	5
		Westbound Left	210	AM	46	55	65	10
				PM	145	190	130	-60

ID	Study Intersection	Lane Group	Storage Length	Peak Hour	Existing Volume	Existing Conditions	Existing plus Project Conditions	
						Queue Length	Queue Length	Change in Queue
10	Airport Blvd & US-101 NB Ramps	Northbound Left	230	AM	176	130	185	55
		Northbound Right		PM	60	45	55	10
11	N. Bayshore Blvd & Peninsula Ave	Southbound Left	100	AM	48	50	50	0
				PM	162	145	160	15
12	Airport Blvd & Coyote Point Dr/Peninsula Ave	Northbound Left	85	AM	1054	400	365	-35
				PM	655	<b>210</b>	<b>220</b>	10

Notes:

- 95<sup>th</sup> percentile queue lengths expressed in feet, rounded to the nearest five feet
- \* Average storage per lane, where dual turn lanes provide different storage lengths
- Bold** indicates queue length exceeds storage capacity
- Red** indicates queue length increases by more than one vehicle length

### 4.3 VEHICLE MILES TRAVELED

Compliance with Senate Bill (SB) 743 included replacement of LOS with VMT for purposes of assessing traffic impacts under CEQA described in new Section 15064.3 of the CEQA Guidelines that applied statewide beginning on July 1, 2020. Lead agencies have discretion to choose the most appropriate methodology to evaluate a project’s vehicles miles traveled, including whether to express the change in absolute terms, per capita, per household or any other measure. Most jurisdictions, including the City of Burlingame, do not yet have an adopted VMT threshold. For the purposes of this study, the screening guidelines and significance thresholds recommended in the OPR *Technical Advisory* are utilized, as discussed in section 2.1.

As noted above, the OPR advisory recommends a significance threshold for office projects of 15 percent below existing regional VMT per employee. For office projects, OPR also recommends home-based work (commute) VMT per employee as the appropriate metric for evaluating impacts. TJKM used the C/CAG-VTA travel demand model to determine the existing commute VMT per employee at the project location and countywide. TJKM also took into account the effect of the proposed TDM plan required under the City’s 2030 Climate Action Plan. Under City requirements, the TDM program would need to peak hour trips by at least 20 percent, via strategies that encourage mode shifting and which would thus also reduce VMT.

As the proposed project would construct a new office building in a location containing primarily other office buildings, the proposed project would normally be expected to generate the same 17.92 average commute VMT per employee as existing uses in the project location. As discussed below, with the measures included in the required TDM plan, the daily commute VMT per employee for the Project is expected to be 12.45.

With a countywide average commute VMT per employee of 16.74, the significance threshold 15 percent below that average would be 14.23. As the proposed project would construct a new office building in a

location containing primarily other office buildings, the proposed project would normally be expected to generate the same average commute VMT per employee. In order to fall below the significance threshold, the project's VMT per employee would need to be reduced by at least 20.6 percent. As discussed below, the required TDM plan is expected to reduce the project's VMT generation by approximately 30.5 percent. With this program in place, the project is expected to generate 12.45 VMT per employee. Based on the OPR recommended significance threshold, the proposed project would have a **less-than-significant impact** on VMT.

In summary, the key metrics for this VMT analysis are:

- Countywide average: 16.74 VMT per employee
  - a. Significance threshold: 14.23 (85 percent of countywide average)
- TAZ #1949, existing: 17.92 VMT per employee
- Required VMT reduction to avoid impact: 20.6%
- VMT reduction from TDM plan: 30.5%
- Project VMT with TDM plan: **12.45 VMT per worker**

VMT outputs from the C/CAG-VTA travel demand model are attached in **Appendix D**.

#### **Effects of Required TDM Program on Project VMT**

Based on research summarized by Fehr & Peers in 2019 (included in **Appendix E**), a robust TDM program has the potential to substantially reduce employee VMT. The project applicant has prepared a TDM plan, which focuses on mode shifting commute trips from single occupancy vehicles to alternate modes including transit, carpools, and biking or walking. The proposed TDM plan, dated November 6, 2020, is included in **Appendix F**. The proposed plan was prepared in accordance with strategies and guidance provided in the *C/CAG Guidelines for Implementing the Land Use Component of the Congestion Management Program*. **Table 8** provides a summary of specific VMT-reduction measures that are included in the proposed TDM plan, with their corresponding estimated reductions. It should be noted that the C/CAG Guidelines provide generous estimates of trip credits for a variety of TDM measures, and that the City requires that peak hour trips be reduced by at least 20% via a TDM plan. The proposed plan would provide credits in excess of the entire peak hour trip generation, with all credits due to mode shifting.

The proposed TDM program would include measures such as subsidized transit passes, facilitating ride sharing, providing information on local transportation facilities and services, providing on-site amenities for bicycle commuters including showers and changing areas, and recommending telecommuting and alternative work schedules. In particular, the TDM plan requires a TDM coordinator, a minimum level of transit subsidy, provision of a shuttle to Caltrain/BART, and ongoing monitoring via employee surveys about travel behavior. As discussed in section 3.4, there is currently a free shuttle that connects the Millbrae BART/Caltrain station with Airport Boulevard, with the nearest stop located at Bay View Place. The City of Burlingame also operates a free shuttle to the Broadway Caltrain station with the nearest stop at the Hilton Hotel across the street from the project site. These shuttles provide crucial last mile connectivity and make it more likely that employees would utilize transit-related benefits such as free or discounted transit passes for Caltrain and/or BART. Although these shuttle stops exist already, the project TAZ does not include these as transit connections, and the travel demand model predicts only three percent transit

use among employees. As such, the actual VMT reduction for the proposed project due to these shuttle stops is assumed to be moderate. As of 2021 it appears that a large proportion of office workers intend to work from home full or part time indefinitely, and so the relative VMT reduction for telecommuting and alternative work schedules is assumed to be high. Estimated reductions for other measures, within the range provided by Fehr & Peers, were conservative and generally based on the trip credit assumptions outlined in the C/CAG guidelines.

As shown in **Table 8**, relatively conservative VMT reduction estimates, based on the proposed TDM plan, would result in a total reduction of 30.5 percent. This would reduce the project’s VMT generation to 12.45 VMT per worker, below the applicable significance threshold of 14.23.

**Table 8: VMT Reductions & Proposed TDM Measures**

CAPCOA Strategies <sup>1</sup>			VMT Reductions				Comments
Category	#	Strategy	F&P Range <sup>2</sup>	Min.	Max.	Project Estimate <sup>3</sup>	
Land Use/Location	3.1.5	LUT-5 Increase Transit Accessibility	0-5.8%	0%	5.8%	3%	Existing stops for two free shuttle routes within ½ mile. Not accounted for in existing TAZ data...
Commute Trip Reduction	3.4.3	TRT-3 Provide Ride-Sharing Programs	2.5-8.3%	2.5%	8.3%	3%	
	3.4.4	TRT-4 Implement Subsidized or Discounted Transit Program	0-16%	0%	16%	8%	Tenants required to provide minimum transit subsidy of \$20/month for 25% of employees
	3.4.6	TRT-6 Encourage Telecommuting and Alt. Work Schedules	0.2-4.5%	0.2%	4.5%	4.5%	TDM plan lists as optional. Recommend this be required.
	3.4.7	TRT-7 Implement CTR Marketing	0.9-26%	0.6%	26%	8%	Marketing organized by required TDM coordinator. TDM plan lists as optional. Recommend this be required.
	3.4.11	TRT-11 Employer-sponsored vanpool/shuttle	1.4-6.8%	1.4%	6.8%	4%	Required under TDM plan.
<b>Total</b>				<b>5%</b>	<b>67.4%</b>	<b>30.5%</b>	

Notes:

<sup>1</sup> Quantifying Greenhouse Gas Mitigation Measures, California Air Pollution Control Officers Association (CAPCOA), August 2010

<sup>2</sup> SB 743 Implementation TDM Strategy Assessment, Fehr & Peers, February 2019

<sup>3</sup> Based on trip credit guidelines in C/CAG Guidelines for Implementing the Land Use Component of the Congestion Management Program, C/CAG, 2000

## 5.0 BACKGROUND (EXISTING PLUS APPROVED AND REASONABLY FORESEABLE PROJECTS) CONDITIONS

This scenario is similar to Existing Conditions, but with the addition of traffic from approved and other reasonably foreseeable developments within the vicinity of the proposed project that would use the roadway network under review for this project. The projects included in Background Conditions were selected in consultation with City of Burlingame staff. Approved and other reasonably foreseeable developments located within the immediate vicinity of the project and relevant to this analysis are:

- 1 & 45 Adrian Court residential development
- 1095 Rollins Road Apartments
- SFO Technology Center, 1300 Bayshore Hwy
- 1499 Bayshore Hwy Hotel
- Burlingame Point Office Park, 300 Airport Blvd
- Burlingame Topgolf, 250 E. Anza Blvd
- 1008-1028 Carolan Ave & 1007-1025 Rollins Rd Multi-Family Development

**Figure 7** shows projected turning movement volumes at all the study intersections for Background No-Project Conditions for a.m. and p.m. peak hours. The turning movement counts under Background No-Project Conditions are a combinations of Background counts and Existing Conditions – No Project Counts. The Background conditions were developed using available turning movement counts from each project's Traffic Impact Analysis. The trips were distributed throughout the network based on that available information from the Traffic Impact Analysis reports.

### 5.1 INTERSECTION LEVEL OF SERVICE ANALYSIS – BACKGROUND NO-PROJECT CONDITIONS

The results of the LOS analysis using the HCM 2010 & 2000 methodology and Synchro 10 software program for Background Conditions are summarized in **Table 9**. Where appropriate, signal timing was optimized. Under this scenario, all of the study intersections would continue to operate within applicable jurisdictional standards during the a.m. peak hour, and all study intersections would operate acceptably in the p.m. peak hour. Traffic conditions would be more constrained under this scenario than in Existing Conditions, but would still operate acceptably based on jurisdictional level of service criteria.

LOS and queueing worksheets are provided in **Appendix G**.

**Table 9: Intersection Level of Service Analysis –Background Conditions**

ID	Intersection	Intersection Control	Peak Hour	Background Conditions	
				Average Delay <sup>1</sup>	LOS <sup>2</sup>
1	Airport Blvd & Project Driveway W	One-Way Stop Control	AM	15.8	C
			PM	15.2	C
2	Airport Blvd & Project Driveway E	One-Way Stop Control	AM	9.9	A
			PM	10.2	B
3	Bayshore Hwy & Broadway/Airport Blvd	Signal	AM	28.9	C
			PM	48.6	D
4	California Dr & Broadway	Signal	AM	40.3	D
			PM	32.0	C
5	Carolan Dr & Broadway	Signal	AM	19.0	B
			PM	12.9	B
6	Rollins Rd & Broadway	Signal	AM	25.4	C
			PM	23.1	C
7	Broadway & US-101 SB Ramps*	Signal	AM	51.9	D
			PM	22.9	C
8	Bayshore Hwy & US-101 NB Ramps	Signal	AM	29.0	C
			PM	32.6	C
9	Airport Blvd & Anza Blvd	Signal	AM	34.6	C
			PM	35.0	D
10	Airport Blvd & US-101 NB Ramps	Signal	AM	19.0	B
			PM	19.6	B
11	N. Bayshore Blvd & Peninsula Ave*	Signal	AM	14.0	B
			PM	16.1	B
12	Airport Blvd & Coyote Point Dr/Peninsula Ave*	Signal	AM	17.8	B
			PM	17.9	B

Notes:

AM – morning peak hour, PM – evening peak hour

1. 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.

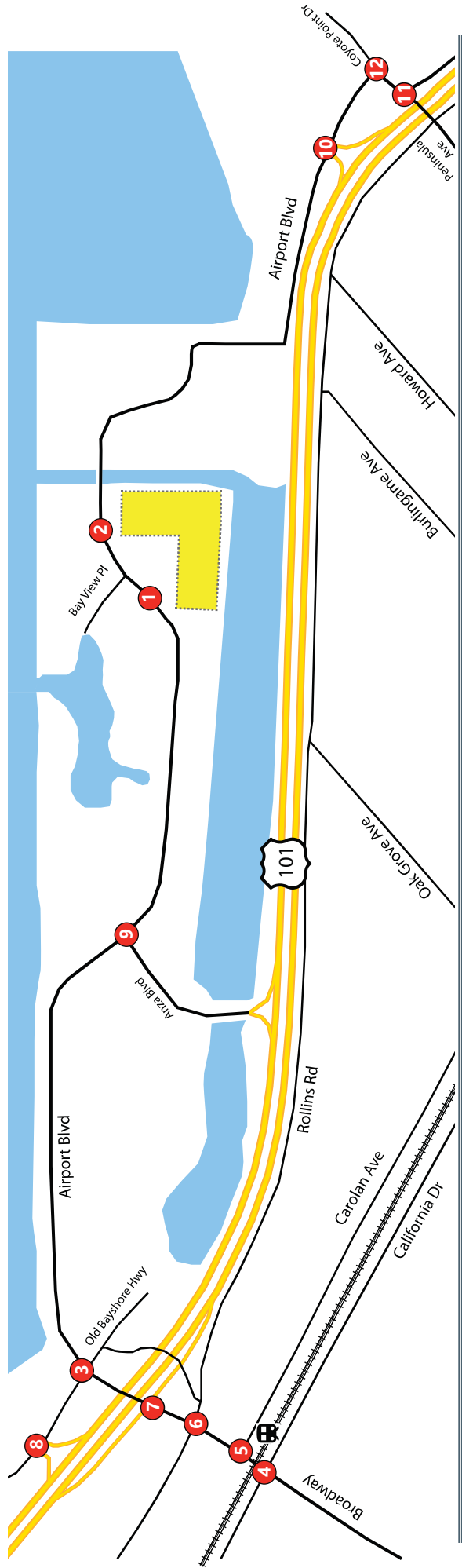
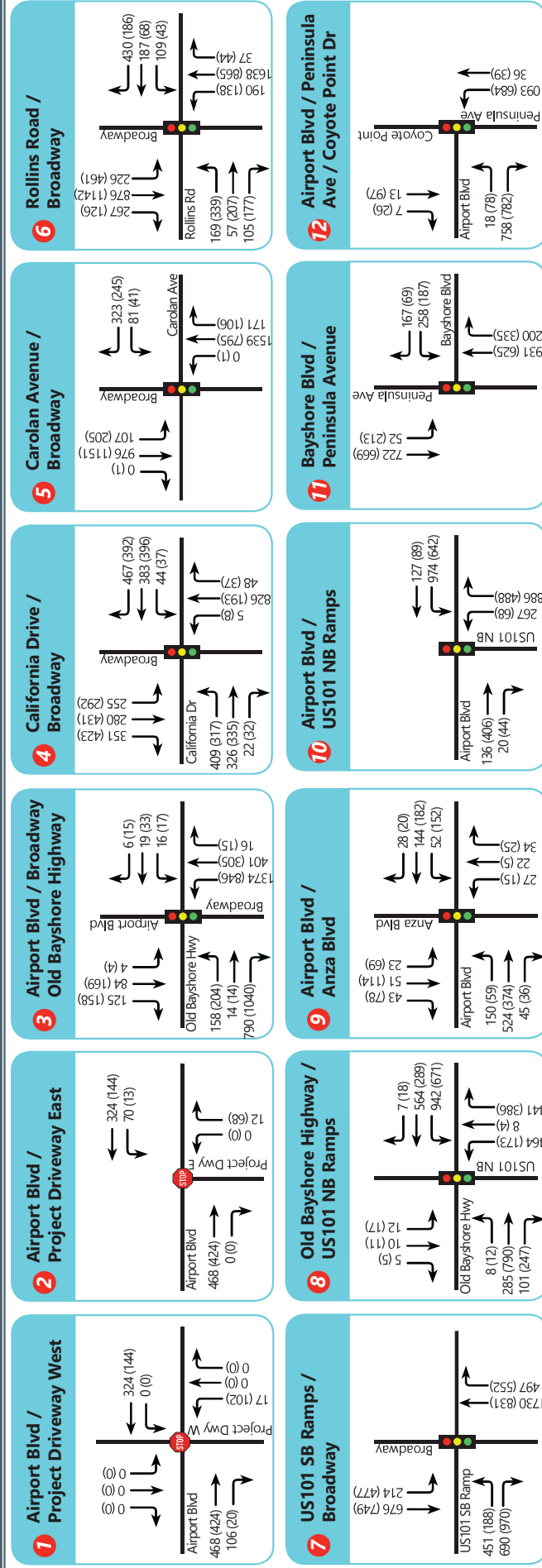
2. LOS = Level of Service

\* HCM 2000 methodology used

**Bold** indicates unacceptable operational conditions based on applicable jurisdictional standards.

Figure 7: Background Peak Hour Traffic Volumes

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■ Project Site  
⊗ Study Intersections  
⊞ Caltrain Station  
XX AM Peak Hour Volumes  
(XX) PM Peak Hour Volumes

## 6.0 BACKGROUND PLUS PROJECT CONDITIONS

This scenario is identical to Background No-Project Conditions, but with the addition of projected traffic from the proposed project. 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 – BACKGROUND PLUS PROJECT CONDITIONS

The intersection LOS analysis results for Background plus Project Conditions are summarized in **Table 10**.

Under this scenario, all but one of the study intersections would continue to operate within applicable jurisdictional standards during the a.m. peak hour, and all of the study intersections would operate acceptably in the p.m. peak hour. At the signalized intersections of Broadway & US-101 SB Ramps and Airport Blvd & Anza Blvd TJKM adjusted the peak hour factor to bring the intersections into acceptable levels of service. Adjusting the peak hour factor is standard practice when an intersection nears unacceptable operating conditions. Based on the City of Burlingame and City of San Mateo level of service criteria, the project is expected to have a **less-than-significant impact** at all study intersections in this scenario.

**Figure 8** shows projected turning movement volumes at all the study intersections for Background plus Project Conditions. LOS and queueing worksheets are provided in **Appendix H**.

**Table 10: Intersection Level of Service Analysis – Background plus Project Conditions**

ID	Intersection	Intersection Control	Peak Hour	Background Conditions		Background plus Project Conditions		
				Average Delay <sup>1</sup>	LOS <sup>2</sup>	Average Delay <sup>1</sup>	LOS <sup>2</sup>	Change in Delay <sup>3</sup>
1	Airport Blvd & Project Driveway W	One-Way Stop Control	AM	12.3	B	18.4	C	2.6
			PM	13.6	B	23.1	C	7.9
2	Airport Blvd & Project Driveway E	One-Way Stop Control	AM	9.2	A	10.0	B	0.1
			PM	9.8	A	11.0	B	0.8
3	Bayshore Hwy & Broadway/Airport Blvd	Signal	AM	24.3	C	28.8	C	-0.1
			PM	30.1	C	48.0	D	-0.6
4	California Dr & Broadway	Signal	AM	31.9	C	41.3	D	1.0
			PM	31.0	C	32.7	C	0.7
5	Carolan Dr & Broadway	Signal	AM	14.5	B	19.5	B	0.5
			PM	12.4	B	12.8	B	-0.1
6	Rollins Rd & Broadway	Signal	AM	21.5	C	25.7	C	0.3
			PM	22.2	C	23.1	C	0.0
7	Broadway & US-101 SB Ramps*	Signal	AM	25.6	C	42.0	D	16.4
			PM	20.5	C	23.9	C	1.0
8	Bayshore Hwy & US-101 NB Ramps	Signal	AM	25.2	C	29.6	C	0.6
			PM	28.9	C	34.5	C	1.9
9	Airport Blvd & Anza Blvd	Signal	AM	30.1	C	37.6	D	3.0
			PM	32.2	C	52.1	D	19.9
10	Airport Blvd & US-101 NB Ramps	Signal	AM	15.3	B	19.8	B	0.8
			PM	17.1	B	21.7	C	2.1
11	N. Bayshore Blvd & Peninsula Ave*	Signal	AM	14.3	B	14.3	B	0.3
			PM	16.2	B	16.4	B	0.3
12	Airport Blvd & Coyote Point Dr/Peninsula Ave*	Signal	AM	17.4	B	18.1	B	0.3
			PM	16.6	B	18.6	B	0.7

Notes: AM – morning peak hour, PM – evening peak hour, Weekend – Saturday noon peak hour,

**Bold** indicates unacceptable operational conditions based on applicable jurisdictional standards. **Red** indicates significant impact.

1. 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.

2. LOS = Level of Service

3. Change in average delay between Background and Background plus Project Conditions. Average delay may be reduced with the addition of project traffic to non-critical movements.

4. Change in critical volume to capacity ratio between Background and Background plus Project Conditions

\* HCM 2000 methodology used

## 6.2 INTERSECTION QUEUING ANALYSIS

The 95<sup>th</sup> percentile queue lengths were calculated for informational purposes at the signalized study intersections under Background and Background plus Project Conditions. The project would add trips to dedicated left- and right-turn lanes at two of the four intersections with dedicated turn lanes. **Table 11** details the existing traffic volumes, added project trips, and queue lengths at all dedicated turn lanes at the signalized study intersections. For locations with dual turn lanes providing varying amounts of storage, the average storage length is provided. The 95<sup>th</sup> percentile queue lengths are rounded to the nearest five feet and assume an average vehicle length of 25 feet. Queue lengths are averaged among all lanes within a lane group.

Under Background Conditions, six study intersections experienced overflowing queues at one or more movements in the a.m. or p.m. peak hour, or both. The addition of project trips would cause one additional intersection to experience queue overflows: Airport Blvd & US-101 NB Ramps. Three movements in this scenario would experience queue increases by more than one car length with the addition of project trips at Airport Blvd & US-101 NB Ramps, and Airport Blvd & Anza Blvd. The project would increase all other Background queue lengths by no more than one car length. Queuing worksheets for each scenario are provided in **Appendix G** and **Appendix I**.

Table 11. 95<sup>th</sup> Percentile Queue Lengths at Selected Turn Lanes

ID	Study Intersection	Lane Group	Storage Length	Peak Hour	Background Conditions	Background plus Project Conditions	
					Queue Length	Queue Length	Change in Queue
3	Bayshore Hwy & Broadway/Airport Blvd	Eastbound Left	360	AM	115	135	20
		Left		PM	100	105	5
		Southbound Left	210	AM	15	15	0
		Left		PM	10	10	0
		Southbound Right	115	AM	55	55	0
		Right		PM	40	50	10
4	Broadway & California Dr	Eastbound Left	225	AM	220	220	0
		Left		PM	160	165	5
		Westbound Left	95	AM	70	70	0
		Left		PM	50	50	0
		Westbound Right	350	AM	270	285	15
		Right		PM	75	70	-5
Northbound Left	50	AM	10	10	0		
Left		PM	15	15	0		
5	Broadway & Carolan Dr	Westbound Right	200	AM	115	125	10
		Right		PM	50	50	0
		Northbound Left	40	AM	0	0	0
		Left		PM	5	5	0
		Southbound Left	125	AM	115	120	5
		Left		PM	<b>150</b>	<b>150</b>	0
6	Broadway & Rollins Rd	Eastbound Left	130	AM	105	110	5
		Left		PM	<b>155</b>	<b>155</b>	0
		Eastbound Right	110	AM	35	35	0
		Right		PM	40	40	0
		Westbound Right	160	AM	<b>350</b>	<b>355</b>	5
		Right		PM	50	50	0
		Northbound Left	90	AM	<b>95</b>	95	0
		Left		PM	70	70	0
Southbound Left	200	AM	135	135	0		
Left		PM	<b>200</b>	<b>200</b>	0		
7	Broadway & US-101 SB Ramps	Eastbound Right	200	AM	90	95	5
		Right		PM	130	130	0
		Northbound Right	105	AM	<b>325</b>	<b>365</b>	<b>40</b>
		Right		PM	65	65	0
8	Old Bayshore Hwy & US-101 NB Ramps	Eastbound Left	205	AM	20	20	0
		Left		PM	25	25	0
		Eastbound Right	170	AM	25	25	0
		Right		PM	85	90	5
		Northbound Left	130	AM	<b>390</b>	<b>415</b>	25
		Left		PM	<b>160</b>	<b>155</b>	-5
9	Airport Blvd & Anza Blvd	Eastbound Left	90	AM	<b>195</b>	<b>195</b>	0
		Left		PM	70	70	0
		Westbound Left	210	AM	75	85	10
		Left		PM	200	<b>285</b>	<b>85</b>

ID	Study Intersection	Lane Group	Storage Length	Peak Hour	Background Conditions	Background plus Project Conditions	
					Queue Length	Queue Length	Change in Queue
10	Airport Blvd & US-101 NB Ramps	Northbound	230	AM	200	<b>295</b>	<b>95</b>
		Left		PM	55	60	5
		Northbound	230	AM	200	<b>245</b>	<b>45</b>
11	N. Bayshore Blvd & Peninsula Ave	Southbound	100	AM	50	50	0
		Left		PM	<b>185</b>	<b>195</b>	10
12	Airport Blvd & Coyote Point Dr/Peninsula Ave	Northbound	85	AM	<b>425</b>	<b>450</b>	25
		Left		PM	<b>240</b>	<b>240</b>	0

Notes:

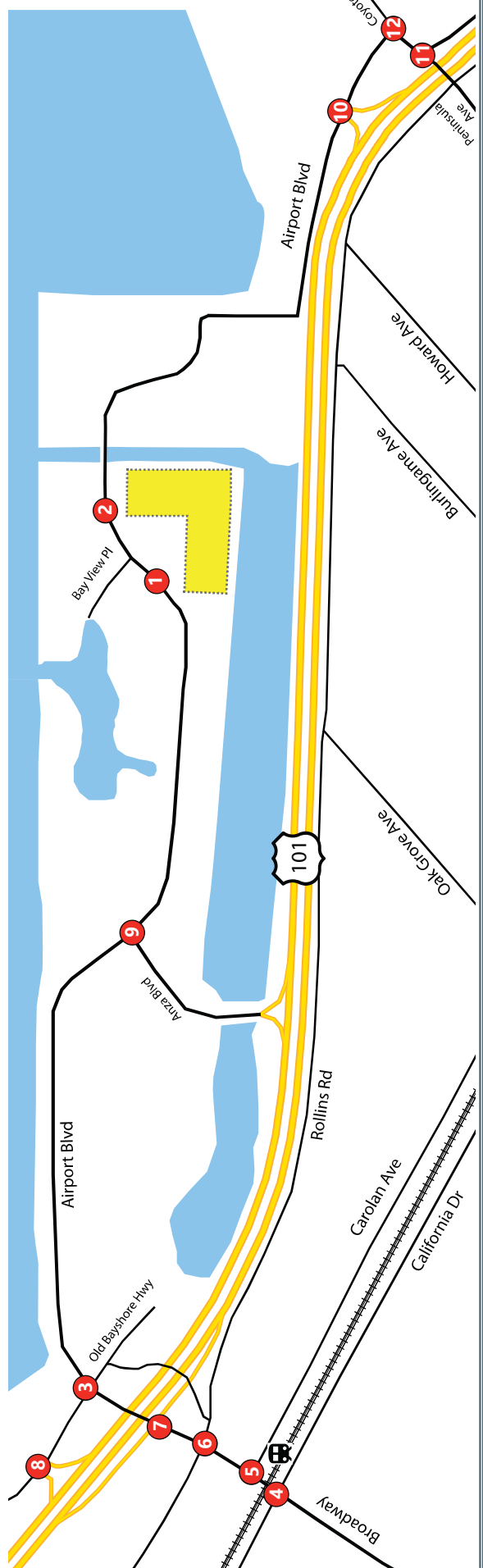
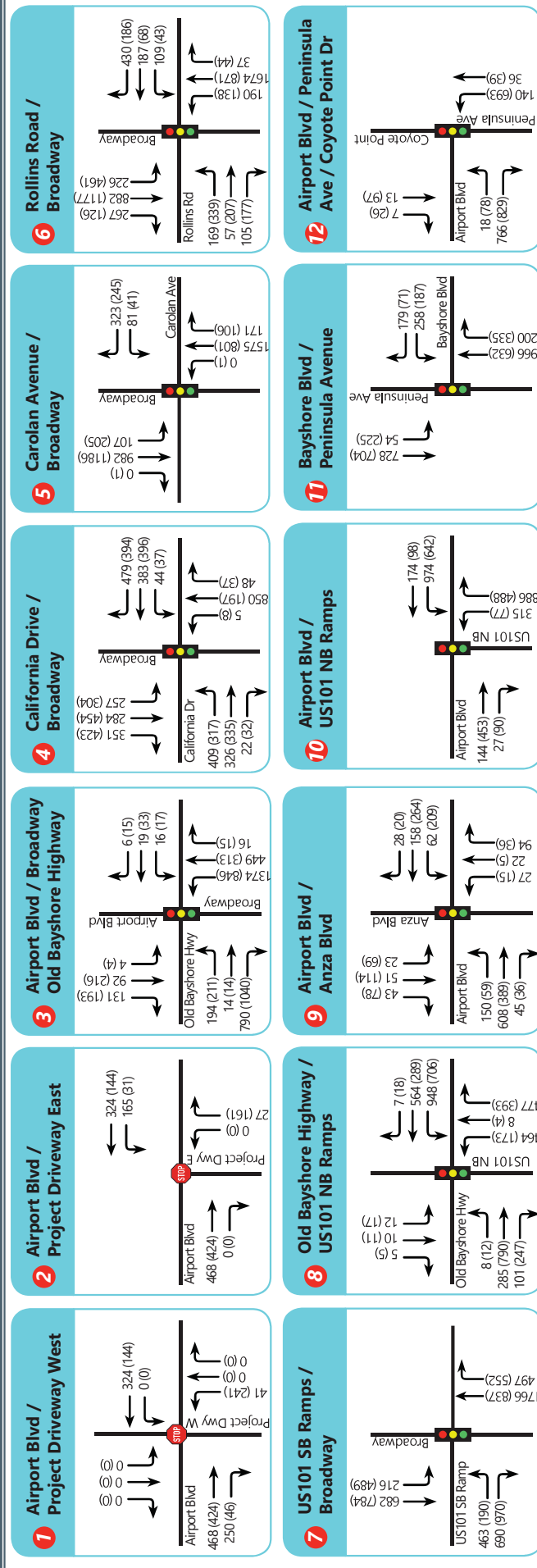
95<sup>th</sup> percentile queue lengths expressed in feet, rounded to the nearest five feet

\* Average storage per lane, where dual turn lanes provide different storage lengths.

**Bold** indicates queue length exceeds storage capacity

**Red** indicates queue length increases by more than one vehicle length

Figure 8: Background Plus Project Peak Hour Traffic Volumes



## 7.0 CUMULATIVE NO-PROJECT CONDITIONS (2040)

The Cumulative No-Project Conditions analysis forecasts how the study area's transportation system would operate with the full build-out of the project in combination with the growth and changes of the surrounding community by the year 2040. The City of Burlingame recently updated their General Plan and as part of the EIR completed a traffic study that projected traffic conditions to 2040 at nine of the study intersections. For the remaining three intersections, traffic conditions were projected to 2040 using a yearly growth factor. Total peak hour intersection entering volumes at four nearby intersections on Airport Blvd and Peninsula Ave were used to establish an average annual traffic growth factor of 1.03 percent per year. This growth factor was applied to 2018 intersection turning movement volumes at the remaining three intersections not covered by the General Plan study to project estimated 2040 conditions.

Trips from the near term developments in the Background Conditions were not included in this scenario, as it is assumed that they are included in the fully built 2040 scenario of the General Plan, and as such included in the General Plan's 2040 traffic counts.

As noted above, TJKM adjusted the peak hour factor to 1.00 and used optimized signal timings instead of existing signal timings where appropriate. This may result in a Level of Service improvement when comparing the Cumulative and Background conditions for both with and without project scenarios.

**Figure 9** shows projected turning movement volumes at all the study intersections for Cumulative Conditions for a.m., p.m. and weekend peak hours.

### 7.1 INTERSECTIONS LEVEL OF SERVICE ANALYSIS – CUMULATIVE NO-PROJECT CONDITIONS

The intersection LOS analysis results for Cumulative No-Project Conditions are summarized in **Table 12**. Under this scenario, all project intersections except one operate acceptably in both peak hours. The signalized intersection of Broadway & Carolan Ave operates at LOS E in the a.m. peak hour and LOS D in the p.m. peak hour under this scenario. Most intersections did not experience significant increases in delay when compared to Existing Conditions. The greatest increase in delay was realized at the Broadway & Carolan Ave intersection, where delay increased by 62.1 seconds in the a.m. peak hour and 41.8 seconds in the p.m. peak hour. It should be noted that the City of Burlingame is in the planning stages of the Broadway Grade Separation project, which will provide a grade separated crossing for Broadway at the Caltrain tracks. It is likely that the Broadway & Carolan Ave intersection would be significantly modified and that traffic operations would improve in the area as a result. All other intersections increased delay from Existing Conditions by no more than 13 seconds.

LOS and queueing worksheets are provided in **Appendix I**.

**Table 12: Intersection Level of Service Analysis – Cumulative Conditions**

ID	Intersection	Intersection Control	Peak Hour	Cumulative Conditions		Change from Existing
				Average Delay <sup>1</sup>	LOS <sup>2</sup>	
1	Airport Blvd & Project Driveway W	One-Way Stop Control	AM	12.0	B	-0.3
			PM	15.9	C	2.3
2	Airport Blvd & Project Driveway E	One-Way Stop Control	AM	8.9	B	-0.3
			PM	9.7	A	-0.1
3	Bayshore Hwy & Broadway/Airport Blvd	Signal	AM	26.1	C	1.8
			PM	36.9	D	6.8
4	California Dr & Broadway	Signal	AM	26.6	C	-5.3
			PM	24.6	C	-6.4
5	Carolán Dr & Broadway	Signal	AM	<b>76.6</b>	<b>E</b>	62.1
			PM	54.2	D	41.8
6	Rollins Rd & Broadway	Signal	AM	20.9	C	-0.6
			PM	26.4	C	4.2
7	Broadway & US-101 SB Ramps*	Signal	AM	34.2	C	8.6
			PM	33.5	C	13.0
8	Bayshore Hwy & US-101 NB Ramps	Signal	AM	25.2	C	0.0
			PM	38.4	D	9.5
9	Airport Blvd & Anza Blvd	Signal	AM	35.9	D	5.8
			PM	42.2	D	10.0
10	Airport Blvd & US-101 NB Ramps	Signal	AM	21.0	C	5.7
			PM	22.5	C	5.4
11	N. Bayshore Blvd & Peninsula Ave*	Signal	AM	15.8	B	1.5
			PM	21.5	C	5.3
12	Airport Blvd & Coyote Point Dr/Peninsula Ave*	Signal	AM	18.8	B	1.4
			PM	21.5	C	4.9

Notes:

AM – morning peak hour, PM – evening peak hour

1. 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.

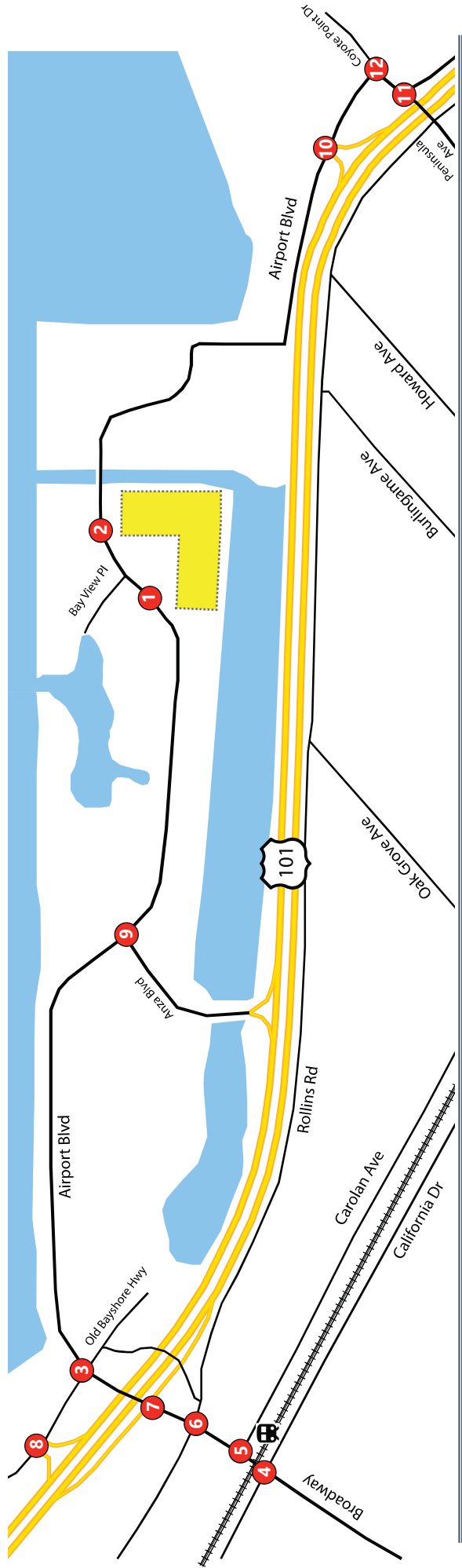
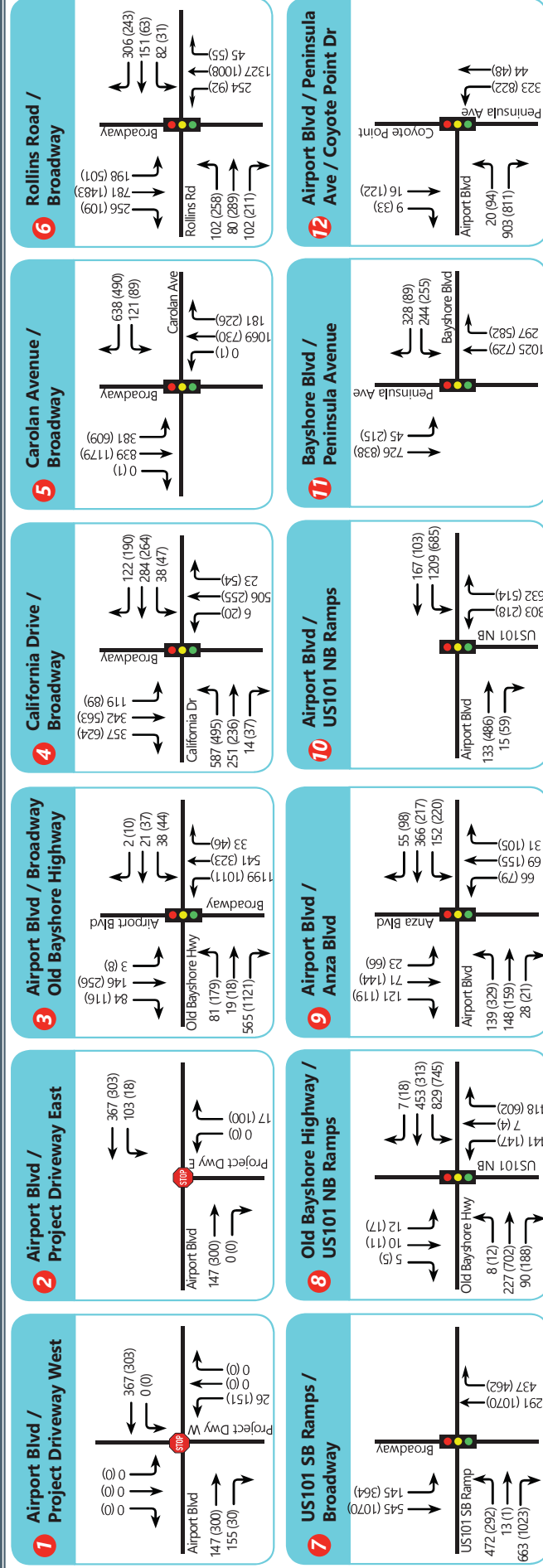
2. LOS = Level of Service

\* HCM 2000 methodology used

**Bold** indicates unacceptable operational conditions based on applicable jurisdictional standards.

Figure 9: Cumulative Peak Hour Traffic Volumes

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■ Project Site  
✗ Study Intersections  
XX Caltrain Station  
 XX AM Peak Hour Volumes  
 (XX) PM Peak Hour Volumes

## 8.0 CUMULATIVE PLUS PROJECT CONDITIONS

This scenario is identical to Cumulative No-Project Conditions, but 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.

As noted above, TJKM adjusted the peak hour factor to 1.00 and used optimized signal timings instead of existing signal timings where appropriate. This may result in a Level of Service improvement when comparing the Cumulative and Background conditions for both with and without project scenarios.

It should be noted that traffic flow and intersection operations along the Broadway corridor could be significantly improved with the planned Burlingame Broadway Grade Separation Project. This would remove the at-grade railroad crossing on Broadway between Carolan Ave and California Dr, directly adjacent to the Broadway Caltrain station. Currently, this project is in the planning stages.

### 8.1 INTERSECTION LEVEL OF SERVICE ANALYSIS – CUMULATIVE PLUS PROJECT CONDITIONS

The intersection LOS analysis results for Cumulative plus Project Conditions are summarized in **Table 13**.

Under this scenario, all project intersections except one operate acceptably in both peak hours. The signalized intersection of Broadway & Carolan Ave would continue to operate unacceptably in the a.m. peak hour (LOS E in the a.m. peak hour, and LOS D in the p.m. peak hour). The increase in delay as a result of the project at the intersection operating at unacceptable LOS would be less than five seconds. Based on the City of Burlingame and City of San Mateo level of service criteria, the project is expected to have a **less-than-significant impact** at all the study intersections.

**Figure 10** shows projected turning movement volumes at all the study intersections for Cumulative plus Project Conditions. LOS and queueing worksheets are provided in **Appendix J**.

**Table 13: Intersection Level of Service Analysis – Cumulative plus Project Conditions**

ID	Intersection	Intersection Control	Peak Hour	Cumulative Conditions		Cumulative plus Project Conditions		
				Average Delay <sup>1</sup>	LOS <sup>2</sup>	Average Delay <sup>1</sup>	LOS <sup>2</sup>	Change in Delay <sup>3</sup>
1	Airport Blvd & Project Driveway W	One-Way Stop Control	AM	12.0	B	13.4	B	1.4
			PM	15.9	C	25.3	D	9.4
2	Airport Blvd & Project Driveway E	One-Way Stop Control	AM	8.8	A	8.9	A	0.1
			PM	9.8	A	10.6	B	0.8
3	Bayshore Hwy & Broadway/Airport Blvd	Signal	AM	26.1	C	26.0	C	-0.1
			PM	36.9	D	36.8	D	-0.1
4	California Dr & Broadway	Signal	AM	26.6	C	26.8	C	0.2
			PM	24.6	C	24.8	C	0.2
5	Carolan Dr & Broadway	Signal	AM	<b>76.6</b>	<b>E</b>	<b>76.4</b>	<b>E</b>	-0.2
			PM	54.2	D	53.8	D	-0.4
6	Rollins Rd & Broadway	Signal	AM	20.9	C	20.9	C	0.0
			PM	26.4	C	26.5	C	0.1
7	Broadway & US-101 SB Ramps*	Signal	AM	34.2	C	36.3	D	2.1
			PM	33.5	C	35.0	D	1.5
8	Bayshore Hwy & US-101 NB Ramps	Signal	AM	25.2	C	25.8	C	0.6
			PM	38.4	D	42.2	D	3.8
9	Airport Blvd & Anza Blvd	Signal	AM	35.9	D	39.5	D	3.6
			PM	42.2	D	46.4	D	4.2
10	Airport Blvd & US-101 NB Ramps	Signal	AM	21.0	C	21.6	C	0.6
			PM	22.5	C	25.5	C	3.0
11	N. Bayshore Blvd & Peninsula Ave*	Signal	AM	15.8	B	16.6	B	0.8
			PM	21.5	C	22.0	C	0.5
12	Airport Blvd & Coyote Point Dr/Peninsula Ave*	Signal	AM	18.8	B	19.3	B	0.5
			PM	21.5	C	23.1	C	1.6

Notes: AM – morning peak hour, PM – evening peak hour, Weekend – Saturday noon peak hour,

**Bold** indicates unacceptable operational conditions based on applicable jurisdictional standards. **Red** indicates significant impact.

1. 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.

2. LOS = Level of Service

3. Change in average delay between Cumulative and Cumulative plus Project Conditions. Average delay may be reduced with the addition of project traffic to non-critical movements.

4. Change in critical volume to capacity ratio between Cumulative and Cumulative plus Project Conditions

\* HCM 2000 methodology used

## 8.2 INTERSECTION QUEUING ANALYSIS

The 95<sup>th</sup> percentile queue lengths were calculated for informational purposes at the signalized study intersections under Background and Background plus Project Conditions. The project would add trips to dedicated left- and right-turn lanes at two of the four intersections with dedicated turn lanes. **Table 14** details the queue lengths at all dedicated turn lanes at the signalized study intersections. For locations with dual turn lanes providing varying amounts of storage, the average storage length is provided. The 95<sup>th</sup> percentile queue lengths are rounded to the nearest five feet and assume an average vehicle length of 25 feet. Queue lengths are averaged among all lanes within a lane group.

Under Cumulative Conditions, nine study intersections experienced overflowing queues at one or more movements in the a.m. or p.m. peak hour, or both. The addition of project trips would cause three movements at three different intersections to increase queues by more than one car length: at Airport Blvd & Anza Blvd, Airport Blvd & US-101 NB Ramps, and Airport Blvd & Coyote Point Dr/Peninsula Ave. The project would increase all other Cumulative queue lengths by no more than one car length.

The project would increase all other Background queue lengths by no more than one car length. Queuing worksheets for each scenario are provided in **Appendix I** and **Appendix J**.

**Table 14: 95<sup>th</sup> Percentile Queue Lengths at Selected Turn Lanes**

ID	Study Intersection	Lane Group	Storage Length	Peak Hour	Cumulative Conditions	Cumulative plus Project Conditions	
					Queue Length	Queue Length	Change in Queue
3	Bayshore Hwy & Broadway/Airport Blvd	Eastbound Left	360	AM	70	90	20
		Left		PM	110	110	0
		Southbound Left	210	AM	10	10	0
		Left		PM	20	20	0
Southbound Right	115	AM	10	15	5		
Right		PM	25	50	25		
4	Broadway & California Dr	Eastbound Left	225	AM	<b>240</b>	<b>240</b>	0
		Left		PM	200	200	0
		Westbound Left	95	AM	50	50	0
		Left		PM	55	55	0
		Westbound Right	350	AM	10	20	10
		Right		PM	45	45	0
Northbound Left	50	AM	10	10	0		
Left		PM	25	25	0		
5	Broadway & Carolan Dr	Westbound Right	200	AM	<b>235</b>	<b>235</b>	0
		Right		PM	80	80	0
		Northbound Left	40	AM	0	0	0
		Left		PM	0	0	0
Southbound Left	125	AM	<b>300</b>	<b>300</b>	0		
Left		PM	<b>480</b>	<b>480</b>	0		
6	Broadway & Rollins Rd	Eastbound Left	130	AM	45	50	5
		Left		PM	<b>140</b>	<b>140</b>	0
		Eastbound Right	110	AM	15	20	5
		Right		PM	55	55	0
		Westbound Right	160	AM	110	115	5
		Right		PM	55	55	0
		Northbound Left	90	AM	105	<b>100</b>	-5
		Left		PM	50	50	0
Southbound Left	200	AM	100	100	0		
Left		PM	<b>225</b>	<b>225</b>	0		
Southbound Right	155	AM	50	50	0		
Right		PM	20	20	0		
7	Broadway & US-101 SB Ramps	Eastbound Right	200	AM	75	75	0
		Right		PM	<b>215</b>	<b>215</b>	0
		Northbound Right	105	AM	<b>210</b>	<b>230</b>	20
		Right		PM	<b>140</b>	<b>145</b>	5
8	Old Bayshore Hwy & US-101 NB Ramps	Eastbound Left	205	AM	20	20	0
		Left		PM	25	25	0
		Eastbound Right	170	AM	10	10	0
		Right		PM	65	65	0
Northbound Left	130	AM	<b>330</b>	<b>350</b>	20		
Left		PM	<b>135</b>	<b>135</b>	0		
9	Airport Blvd & Anza Blvd	Eastbound Left	90	AM	<b>185</b>	<b>185</b>	0
		Left		PM	<b>380</b>	<b>390</b>	10
		Westbound Left	210	AM	200	<b>220</b>	20
		Left		PM	<b>235</b>	<b>325</b>	<b>90</b>

ID	Study Intersection	Lane Group	Storage Length	Peak Hour	Cumulative Conditions	Cumulative plus Project Conditions	
					Queue Length	Queue Length	Change in Queue
10	Airport Blvd & US-101 NB Ramps	Northbound	230	AM	<b>275</b>	<b>380</b>	<b>105</b>
		Left		PM	155	160	5
		Northbound	230	AM	60	70	10
Right	PM	185		190	5		
11	N. Bayshore Blvd & Peninsula Ave	Southbound	100	AM	50	55	5
		Left		PM	<b>225</b>	<b>240</b>	15
12	Airport Blvd & Coyote Point Dr/Peninsula Ave	Northbound	85	AM	<b>550</b>	<b>585</b>	<b>35</b>
		Left		PM	<b>305</b>	<b>310</b>	5

Notes:

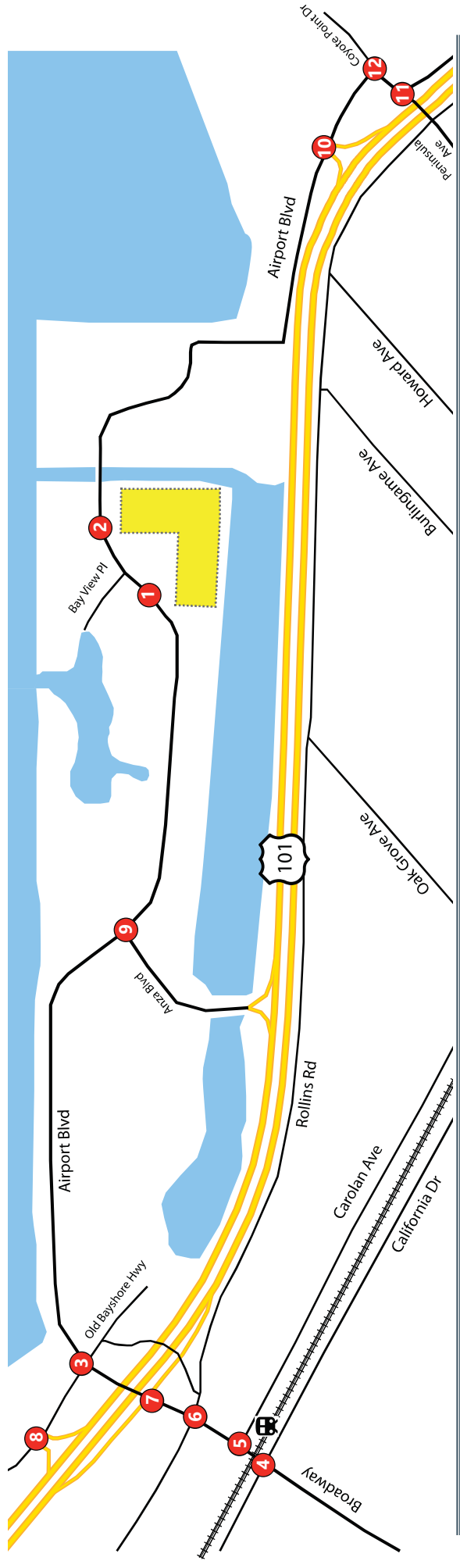
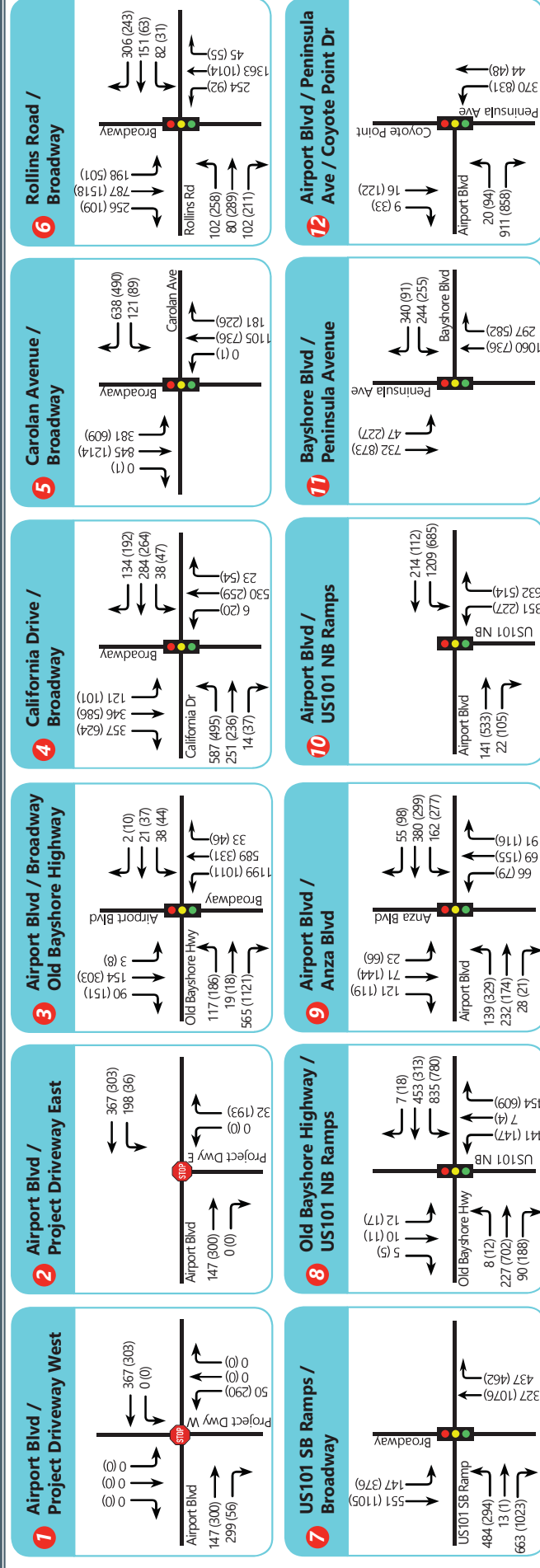
95<sup>th</sup> percentile queue lengths expressed in feet, rounded to the nearest five feet

\* Average storage per lane, where dual turn lanes provide different storage lengths.

**Bold** indicates queue length exceeds storage capacity

**Red** indicates queue length increases by more than one vehicle length

Figure 10: Cumulative Plus Project Peak Hour Traffic Volumes



## 9.0 ADDITIONAL ANALYSIS

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

- Site access and impacts;
- On-site circulation
- Parking analysis;
- Vehicle Miles Traveled Analysis;

The analyses in these sections are based on professional judgment in accordance with the standards and methods employed by traffic engineers. Although operational issues are not considered CEQA impacts, they do describe traffic conditions that are relevant to describing the project environment.

### 9.1 SITE ACCESS

This section analyzes site access and internal circulation for vehicles, pedestrians and bicycles based on the site plan presented in **Figure 2** (dated March 27, 2020). TJKM reviewed internal and external access for the project site for vehicles, pedestrians, and bicycles.

#### Vehicle Access

Primary access to the project site would be provided by two existing driveways that currently provide access from Airport Blvd to the 555 and 577 Airport Blvd office buildings. Sight distance for vehicles exiting the project driveway was evaluated. Based on prevailing speeds of 35 mph, there is adequate sight distance at the western driveway to both eastbound and westbound conflicting traffic. At the eastern driveway, the sight distance is adequate for westbound conflicting traffic. However, the available sight distance to eastbound conflicting traffic is marginal and may be obstructed by two trees directly adjacent to the driveway. However, it should be noted that as the driveway would not be moved, the project would not worsen existing sight distance issues. TJKM recommends that the trees be pruned to remove the visual obstructions for vehicles exiting the eastern driveway. Vehicle access to the project site is considered **adequate** and would not result in any significant impacts to the nearby roadways.

#### Pedestrian Access

Pedestrian access would be via internal sidewalks connecting to existing sidewalks on Airport Blvd and via the San Francisco Bay Trail Class I path that runs along the southern and eastern boundaries of the project site. There are crosswalks at most major intersections near the project site, with pedestrian signal heads at signalized intersections. Existing pedestrian facilities provide continuous paths to the nearby locations, such as Broadway Caltrain, the Broadway Business district, nearby hotels, and recreational areas. However, as shown in **Figure 3a**, existing sidewalk facilities on Airport Blvd are discontinuous as it enters the City of San Mateo, leaving an approximately 0.4 mile gap. The City of Burlingame is also in process of updating its Bicycle and Pedestrian Master Plan, which will result in new projects.

A significant impact occurs if the proposed project conflicts with applicable or adopted policies, plans or programs related to pedestrians facilities or otherwise decreases the performance or safety of pedestrian facilities. The proposed project will not result in any such conflicts. Pedestrian access to the project site is considered **adequate** and would not result in any significant impacts to the nearby pedestrian facilities.

### **Bicycle Access**

There are existing Class II bike lanes provided parts of Airport Blvd, Broadway, California Dr, Carolan Ave, Rollins Rd, and Peninsula Ave. The San Francisco Bay Trail, a Class I multiuse trail, connects several locations along the Burlingame Shoreline, including the project site itself. Additional Class I connections are planned in the project area, notably east of the Sanchez Channel, connecting to other existing pathways. The City is also in process of updating its Bicycle and Pedestrian Master Plan, which will result in new projects. The City of San Mateo is also nearing completion on a Bicycle Master Plan update, which includes projects along Coyote Point Dr and Peninsula Ave.

An impact to bicyclists occurs if the proposed project disrupt existing bicycle facilities; or conflict or create inconsistencies with adopted bicycle system plans, guidelines, and policies. A significant impact occurs if the proposed project conflicts with applicable or adopted policies, plans or programs related to bicycle facilities or otherwise decrease the performance or safety of bicycle facilities. The proposed project will not result in any such conflicts. Bicycle access to the project site is considered **adequate** and would not result in any significant impacts to the nearby bicycle facilities.

### **Transit**

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. The project site is adequately served by the transit service, as shown in **Figure 3c**. Shuttle and transit stops are located at several locations along Airport Blvd, including across the street from the project site. The project is expected to produce higher than normal transit demand and will be implementing an on-site Transportation Demand Management program. Spread among multiple bus routes, the existing transit service can accommodate the proposed demand. Therefore, transit access to the project site is considered **adequate** and would not result in any significant impacts to the nearby transit network.

## **9.2 ON-SITE CIRCULATION**

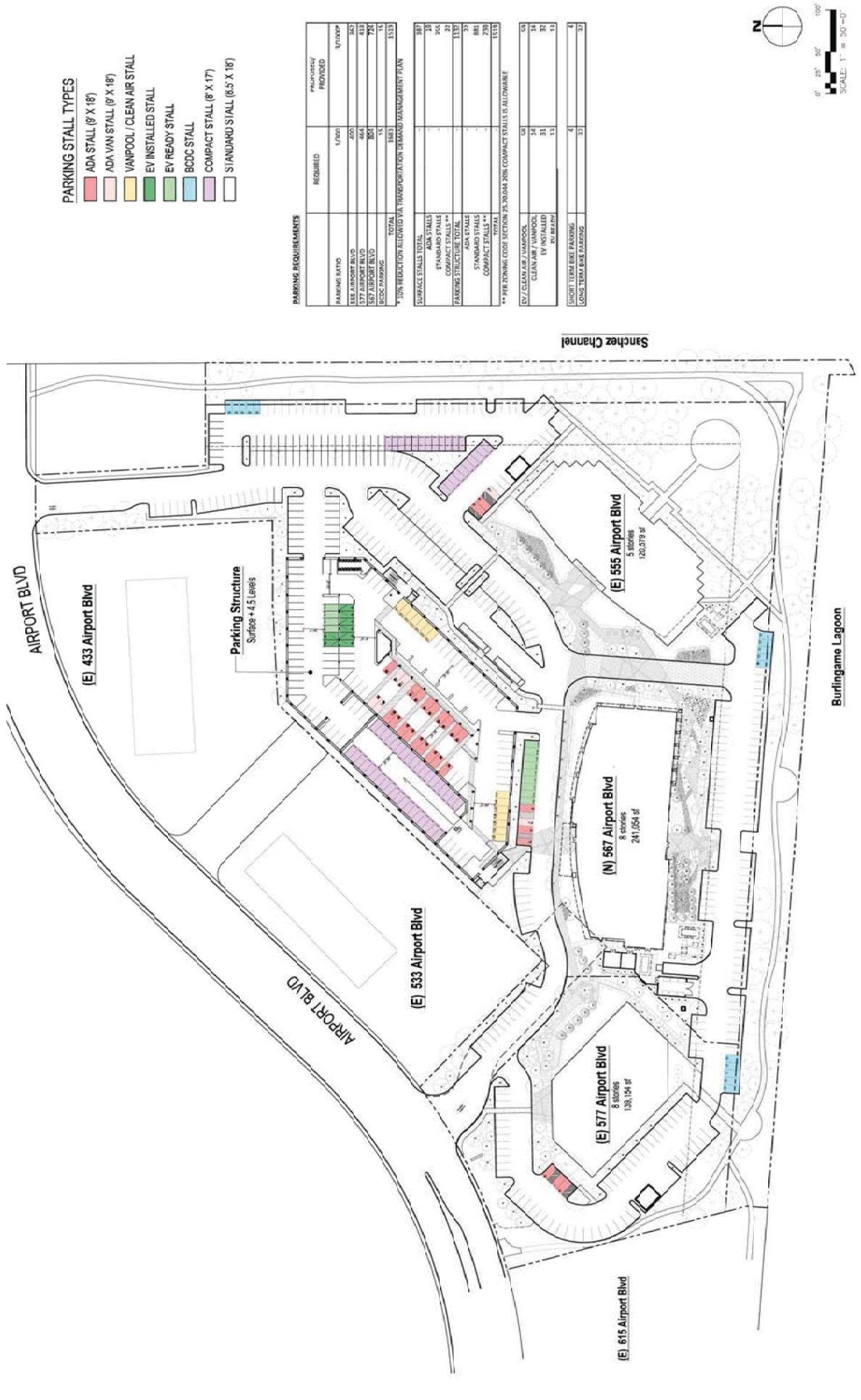
As shown in **Figure 2**, the project site will be accessed by two existing driveways on west and north of the proposed building. These driveways will be used to access the existing 555 and 577 Airport, the proposed 567 Airport, and the proposed parking garage. The interior circulation roads will include surface parking as well. The driveways and interior circulation roads will primarily be 26 feet wide, with sections as wide as 29 feet, not including surface parking spaces. There is adequate space for vehicles to maneuver into and out of parking spaces and garages. The project would also provide adequate space for trucks and emergency vehicles to access the site and maneuver as needed, with adequate turning radii for truck access. On-site circulation is considered **adequate**.

## **9.3 PARKING**

Based on the City of Burlingame's Zoning Code, the project would require a 1/300 sq. ft. ratio for parking spaces, which totals 1,683 spaces. However, the project is proposing a 3/1,000 sq. ft. parking ratio based on the implementation of a TDM plan that will reduce the need for parking. Based on this proposal, the project would require 724 parking spaces for the proposed office building, plus an additional 780 parking

spaces for the existing office buildings, and 15 parking spaces for recreational shoreline access. As shown in a site parking diagram dated May 7, 2020 (**Figure 11**), the proposed project would utilize 387 surface parking spaces, construct a 5.5-level parking structure with 1,132 spaces, as well as provide 15 additional parking spaces for recreational shoreline access to the adjacent San Francisco Bay Trail, meeting City requirements. Additionally, the parking supply will contain 32 ADA accessible stalls, 32 electric vehicle charging stations, 13 additional EV ready stalls, and 14 stalls for vanpools or clean air vehicles. 10 additional ADA stalls and 8 EV ready stalls will be provided in the surface parking lot. These will all meet the California Building Code requirements for ADA access, and the Green building code for EV charging stalls. The proposed parking supply of 1,519 stalls would therefore be **adequate** under City of Burlingame requirements and would not produce any parking impacts on surrounding parcels or roadways.

Figure 11: Site Parking Diagram



## **9.4 NORTH SHOREVIEW NEIGHBORHOOD ANALYSIS**

This section is to respond to a request from a resident of the North Shoreview Neighborhood in San Mateo. It was requested that this document address the project's potential impacts on the neighborhood along with identifying potential cumulative impacts of 567 Airport and other major projects in the Bayfront area on the same neighborhood.

### **Current Situation**

The North Shoreview Neighborhood in San Mateo is bounded on the north by the Poplar Creek Golf Course near Coyote Point, on the west by U.S. 101, on the south by E. Third Avenue and by San Francisco Bay on the east. . [Note: In this section, U.S. 101 is assumed to run north-south and Peninsula Ave. is assumed to run east-west.] Neighborhood access from the north is limited to N. Bayshore Boulevard, essentially a freeway frontage road in San Mateo. On the south, S. Norfolk Street provides the main access.

The neighborhood is subject to cut-through traffic, primarily in the p.m. commute period. Commuters are anxious to save time by avoiding freeway congestion. Quoting from the request and field checked by TJKM, "During the PM commute hours, south- and east-bound drivers (to Foster City, the East Bay, and other point south) often cut through the North Shoreview neighborhood as an alternative to a congested US-101 and SR-92. This is particularly true of drivers leaving the Burlingame Bayfront area. Such drivers enter the neighborhood via N. Bayshore Blvd. at Peninsula Ave., fan out through neighborhood streets, and converge again at the outlet on Norfolk Street and Third Ave. This often causes tremendous traffic congestion and related impacts to North Shoreview."

The impacts on the residential neighborhood are substantial and include congestion, impacted intersections and frustrations on the part of both the residents and the cut-through commuters.

The City of San Mateo has adopted Traffic Action Plans for its 28 neighborhoods, in an attempt to quantify neighborhood traffic problems and resident concerns and develop solutions. The City met with the North Shoreview neighborhood in May of 2016 to conduct a forum. A Traffic Forum Steering Committee (TFSC), comprised of volunteer residents, met later in the year to develop and prioritize their top 10 concerns. In February 2017 a draft Traffic Action Plan for the North Shoreview neighborhood was released. When the prioritized list of concerns is mapped, it shows that most of the top 10 are on routes utilized by cut-through traffic.

The number one priority of the TFSC was to prohibit left turns during the evening commute for southbound S. Norfolk Street at E. Third Avenue, the desired movement for nearly all of the cut-through traffic. The prohibition would be relatively easy to implement, but City officials predicted that it would create new problems by promoting non-compliance by commuters and pushing vehicles into other areas. The recommended action was therefore not enacted.

At the October 9, 2019 meeting of the San Mateo Sustainability and Infrastructure Committee, the City staff provided an update of the status of Traffic Action Plans in the City. In North Shoreview the list had grown to 22 items. Of these, 13 were described as completed with no further action planned. Of the remaining items three were described as on-going. These include the top two concerns related to cut-

through traffic plus a school congestion problem located on a cut-through route. The staff notes that solutions in the North Shoreview area require diversion techniques to counteract the speeding and cut-through traffic. In summary, the on-going cut-through neighborhood problems do not have an easy solution.

### **Cut-through Sources and Solutions**

As is the case with most cut-through traffic problems, commuters are seeking ways to reduce their travel time. In this instance, in the afternoon the southbound commute on U.S. 101 and its interchange with SR 92 are congested as is the eastbound approach to the San Mateo Bridge. Even access to southbound 101 is difficult from some places. The Peninsula/101 interchange has no southbound ramps, meaning accessing the southbound 101 lanes requires the use of surface streets – Peninsula Avenue to N. Humboldt Street to E. Poplar Avenue – all of which are heavily used during commute periods.

Three improvement projects, expected to improve conditions to make afternoon travel on southbound U. S. 101 more attractive, are in various stages of progress. The U.S. 101 Express Lane project is adding one lane in each direction from the south county line to I-380, which includes the area of interest. Also, the left lane in each direction will be converted to express lanes. This project is scheduled to be completed in 2022. Several near-term and long-term improvements to the U.S. 101/SR 92 interchange have been identified for future implementation. A project to add southbound ramps to the U.S. 101/Peninsula Avenue interchange is undergoing environmental review. This project will relocate the existing southbound ramps from E. Poplar Avenue to Peninsula Avenue. Future stages of this project include project design, right of way acquisition and actual construction. This project will facilitate access to the southbound lanes of S.R. 101, including from the Burlingame Bayfront area.

These three projects, both individually and collectively, should eventually reduce congestion in the portion of the U.S. 101 corridor that borders the North Shoreview neighborhood.

### **Impacts Related to 567 Airport**

This traffic study indicates that there will be 276 p.m. peak hour trips generated by this project. The mandated 20 percent reduction related to the project's Transportation Demand Management Plan would reduce this to 221, of which 186 are outbound trips. TJKM projects that 12 p.m. peak hour trips will enter the North Shoreview neighborhood and travel on southbound N. Bayshore Boulevard. TJKM has made no analysis of how many of these trips are made by the project employees returning to their homes in the area. To enter the neighborhood from the project site, motorists must make a left turn from westbound Peninsula Avenue to southbound N. Bayshore Boulevard at the overpass. The report notes that the short left turn lane already overflows with existing (pre-Covid) traffic volumes.

Under existing pre-Covid conditions, 493 vehicles enter southbound N. Bayshore Boulevard from Peninsula Avenue. Of these volumes, 331 enter via a right turn from the west and 162 enter from the Bayfront area via the left turn from the east. Thus, one-third of the southbound traffic on N. Bayshore Boulevard originates from or through the Bayfront area and the remaining two-thirds arrives from the west.

When the traffic from the current project and previously approved projects is added, traffic on N. Bayshore increases by 14 percent to 560 vehicles. Of these, 60 percent arrives from the west. Traffic from the 567 Airport project constitutes two percent of the southbound N. Bayshore Boulevard traffic.

TJKM also examined Cumulative conditions, which are intended to represent General Plan buildout conditions, as depicted in the C/CAG regional traffic forecasting model. In this case, N. Bayshore Boulevard southbound p.m. peak hour traffic increases to 809 vehicles, a 64 percent increase over existing conditions. Under these Cumulative conditions, over 70 percent of the traffic originates from the west side of the freeway. Traffic from the 567 Airport project constitutes about 1.5 percent of the total.

TJKM acknowledges that two separate methods were used to forecast future traffic volumes in the area and the distribution assumptions were made by TJKM with review by City of Burlingame staff. However, even a substantial change in the assumptions would show that the 567 Airport project contributes a minor portion of traffic entering the North Shoreview neighborhood.

### **North Shoreview Neighborhood Summary**

TJKM concludes that the N. Shoreview neighborhood does have substantial issues related to cut-through traffic, but the 567 Airport project traffic will not significantly exacerbate the issues. It was observed that about two-thirds of the traffic entering the neighborhood is from the west of freeway, not from Burlingame's Bayfront area. TJKM offers the following related recommendations:

1. The City of San Mateo should continue to evaluate the origin and destination of traffic entering the N. Shoreview neighborhood in the afternoon commute to determine what share is actually cut-through traffic vs. residents returning to their homes from work.
2. TJKM does not recommend improving the overflowing westbound left turn lane on Peninsula Avenue serving N. Bayshore-bound traffic. It would be difficult to make improvements, but the on-going congestion could deter that portion of the traffic that might intend to cut through the neighborhood.

The freeway improvements described in this report are all important, but the addition of southbound ramps on Peninsula Avenue would seem to significantly improve freeway access, potentially reducing the cut-through issue in North Shoreview.

## CONCLUSIONS

In the project vicinity, the C/CAG-VTA Travel Demand Model generates daily commute VMT per employee of 17.92 for the baseline model year of 2015. With the incorporation of the Transportation Demand Management (TDM) plan required by the City's General Plan, the daily commute VMT per employee is expected to be 12.45. This is, more than 15 percent below the countywide average of 16.74. Based on the OPR recommended significance threshold, the proposed project would have a **less-than-significant impact** on VMT.

The proposed project is expected to generate 2,338 total daily trips, including 278 new a.m. peak hour trips (239 in, 39 out) and 276 net new p.m. peak hour trips (44 in, 232 out).

Under **Existing Conditions**, all of the study intersections operate within applicable jurisdictional standards during the a.m. peak hour, and all study intersections operate acceptably in the p.m. peak hour.

Under **Existing plus Project Conditions**, all of the study intersections would continue to operate within applicable jurisdictional standards during a.m. peak hour, and all study intersections operate acceptably in the p.m. peak hour. The addition of project trips caused the intersection of Airport Blvd & Anza Blvd see a significant increase in delay (by 20.6 seconds), however the intersection continues to operate acceptably. Based on the City of Burlingame and City of San Mateo level of service criteria, the project is expected to have a **less-than-significant impact** at all the study intersections.

Under **Background Conditions**, all of the study intersections would continue to operate within applicable jurisdictional standards during the a.m. peak hour, and all study intersections would operate acceptably in the p.m. peak hour. Traffic conditions would be more constrained under this scenario than in Existing Conditions, but would still operate acceptably based on jurisdictional level of service criteria.

Under **Background plus Project Conditions**, all of the study intersections would continue to operate within applicable jurisdictional standards during the a.m. peak hour and the p.m. peak hour. TJKM revised the peak hour factor at two intersections which resulted in an acceptable LOS D for both intersections. Based on the City of Burlingame level of service criteria, the project is expected to have a **less-than-significant impact** at all study intersections in this scenario.

Under **Cumulative Conditions**, all project intersections except one operate acceptably in both peak hours. The signalized intersection of Broadway & Carolan Ave operates at LOS F in the a.m. peak hour and LOS E in the p.m. peak hour under this scenario.

Under **Cumulative plus Project Conditions**, all project intersections except one operate acceptably in both peak hours. The signalized intersection of Broadway & Carolan Ave would continue to operate unacceptably in both peak hours (LOS F in the a.m. peak hour,

and LOS E in the p.m. peak hour). The increase in delay as a result of the addition of project trips at the intersection operating at unacceptable LOS would be less than five seconds. Based on the City of Burlingame and City of San Mateo level of service criteria, the project is expected to have a **less-than-significant impact** at all the study intersections.

Queuing operations were analyzed for informational purposes at all signalized study intersections with dedicated left- and right-turn lanes, under Existing, Background, and Cumulative Conditions, with and without the proposed project. Under Existing Conditions, the intersections of Broadway & Rollins Rd, Broadway & US-101 SB Ramps, Bayshore Hwy & US-101 NB Ramps, Airport Blvd & Anza Blvd, N. Bayshore Blvd & Peninsula Ave, and Airport Blvd & Coyote Point Dr/Peninsula Ave would experience queue overflows at one or more turn lanes, during one or both peak hours.

Under Existing plus Project Conditions, the same turn lanes would experience overflows during the same peak hours, plus the addition of the westbound left movement at Airport Blvd & Anza Blvd. The addition of project trips would create a new queue overflow of 65 feet at this turn lane, an 85 feet increase from Existing Conditions. A split phase signal timing with the conversion of the westbound through lane to a shared westbound through/left lane would help to mitigate the queues; however, the intersection still operates acceptably from an LOS standpoint. Elsewhere, the project would increase queues outside of the storage pocket by more than one car length at one additional intersection: Airport Blvd & Coyote Point Dr/Peninsula Ave. However, at Airport Blvd & Coyote Point Dr/Peninsula Ave, the movement was already experiencing overflows in the Existing Conditions, and the project would only increase the queue by slightly over one car length. The project would increase all other Existing queue lengths by no more than one car length.

Under Background Conditions, six study intersections experienced overflowing queues at one or more movements in the a.m. or p.m. peak hour, or both. The addition of project trips would cause one additional intersection to experience queue overflows: Airport Blvd & US-101 NB Ramps. Three movements in this scenario would experience queue increases by more than one car length with the addition of project trips, at Airport Blvd & US-101 NB Ramps, and Airport Blvd & Anza Blvd. The project would increase all other Background queue lengths by no more than one car length.

Under Cumulative Conditions, nine study intersections experienced overflowing queues at one or more movements in the a.m. or p.m. peak hour, or both. The addition of project trips would cause three movements at three different intersections to increase queues by more than one car length: at Airport Blvd & Anza Blvd, Airport Blvd & US-101 NB Ramps, and Airport Blvd & Coyote Point Dr/Peninsula Ave. The project would increase all other Cumulative queue lengths by no more than one car length.

The proposed project does not conflict with existing and planned pedestrian or bicycle facilities and will add trips to existing transit facilities, which can be accommodated by the

existing transit capacity. Therefore, the impact to pedestrian, bicycle facilities, and transit facilities is **less-than-significant**.

Vehicle access will be through two existing driveways that currently operate for the 555 and 577 Airport Blvd buildings. Sight distance at the western driveway is considered adequate. At the eastern driveway, the sight distance is adequate for westbound conflicting traffic. However, the available sight distance to eastbound conflicting traffic is marginal and may be obstructed by two trees directly adjacent to the driveway. However, it should be noted that as the driveway would not be moved, the project would not worsen existing sight distance issues. TJKM recommends that the trees be pruned to remove the visual obstructions for vehicles exiting the eastern driveway. Vehicle access to the project site is considered **adequate** and would not result in any significant impacts to the nearby roadways.

TJKM concluded that the site plan will operate **acceptably** for deliveries, circulation, as well as for trucks and emergency vehicles.

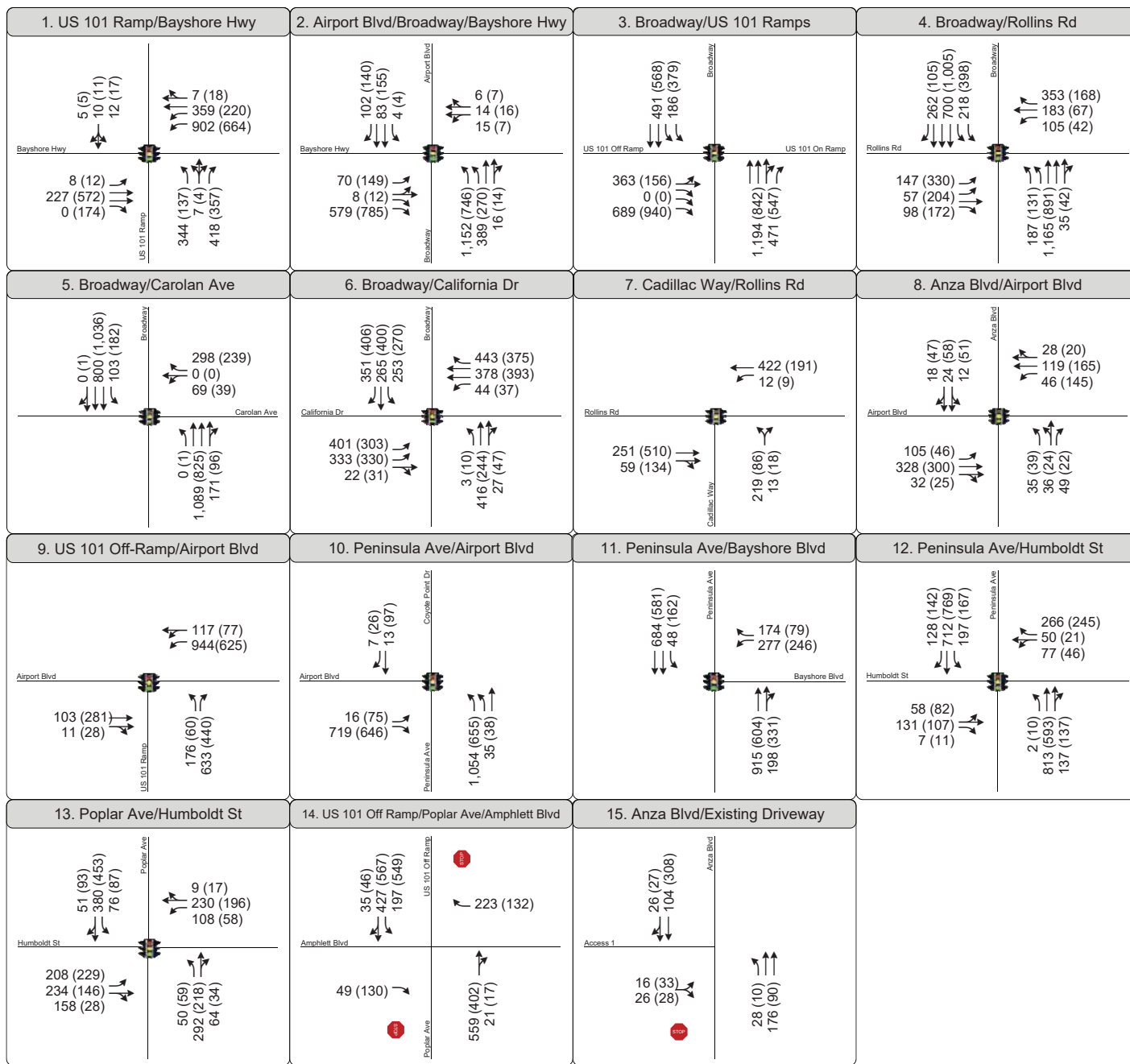
Based on the City of Burlingame's Zoning Code, the project would require a 1/300 sq. ft. ratio for parking spaces, which totals 1,683 spaces. However, the project is proposing a 3/1,000 sq. ft. parking ratio based on the implementation of a TDM plan that will reduce the need for parking. Based on this proposal, the project would require 724 parking spaces for the proposed office building, plus an additional 780 parking spaces for the existing office buildings, and 15 parking spaces for recreational shoreline access. The proposed project would utilize 387 surface parking spaces, as well as construct a 5.5-level parking structure with 1,132 spaces, meeting City requirements. The proposed parking supply of 1,519 stalls would therefore be **adequate** under City of Burlingame requirements and would not produce any parking impacts on surrounding parcels or roadways.

TJKM concludes that the N. Shoreview neighborhood in San Mateo does have substantial issues related to cut-through traffic, but the 567 Airport project traffic will not significantly exacerbate the issues. It was observed that about two-thirds of the traffic entering the neighborhood is from the west of freeway, not from Burlingame's Bayfront area.

### **Recommendations**

Trim the trees to the west of the East Project Driveway to mitigate sight distance issues for eastbound traffic along Airport Blvd.

**Appendix A – Existing & Cumulative Turning Movement Counts**



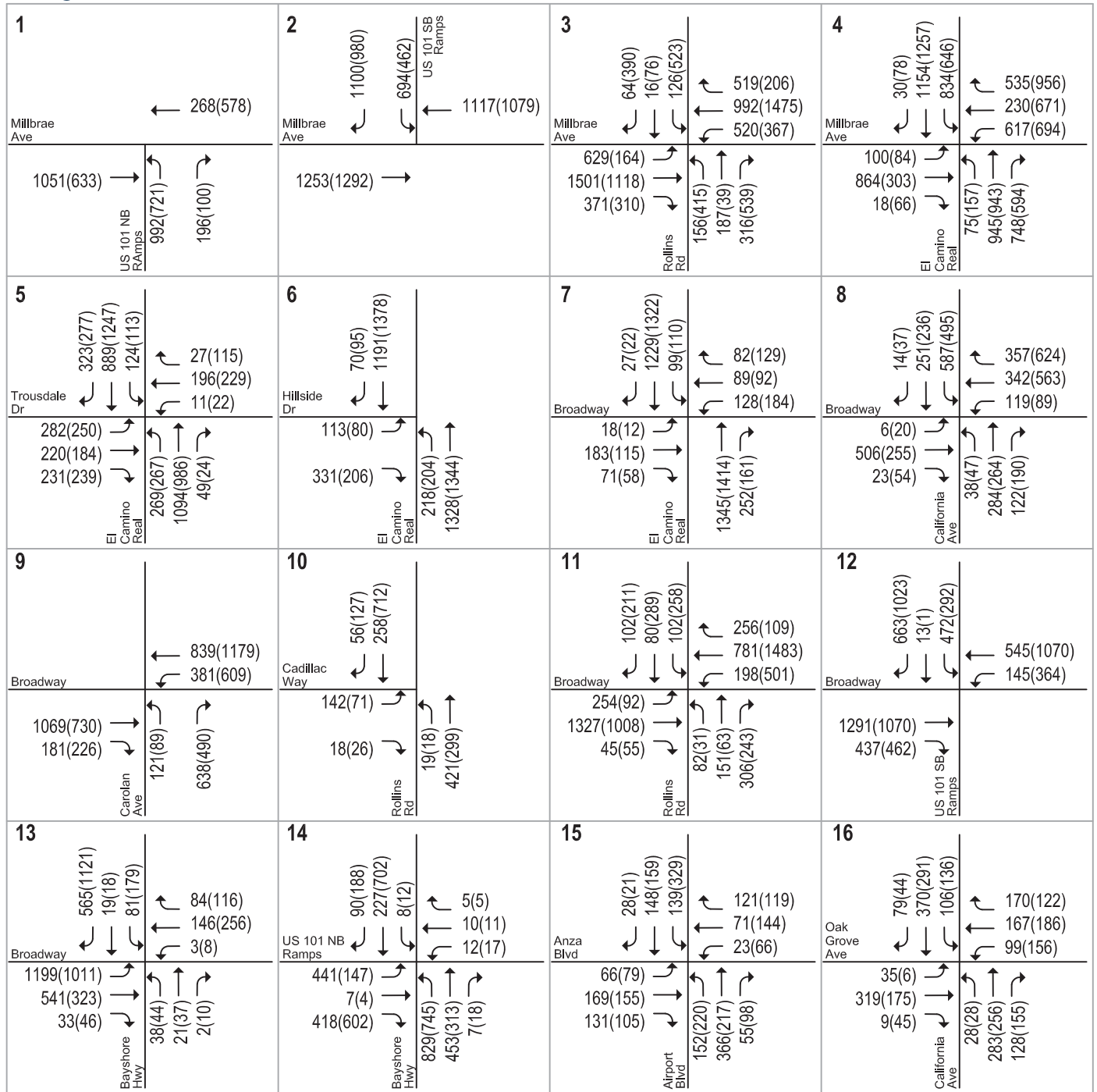
**LEGEND**

- # Study Intersection
- AM (PM) Peak Hour Traffic Volume
- Lane Configuration
- Stop Sign
- Signalized

Figure 5  
Peak Hour Traffic Volumes  
and Lane Configurations  
Existing Conditions



Burlingame General Plan

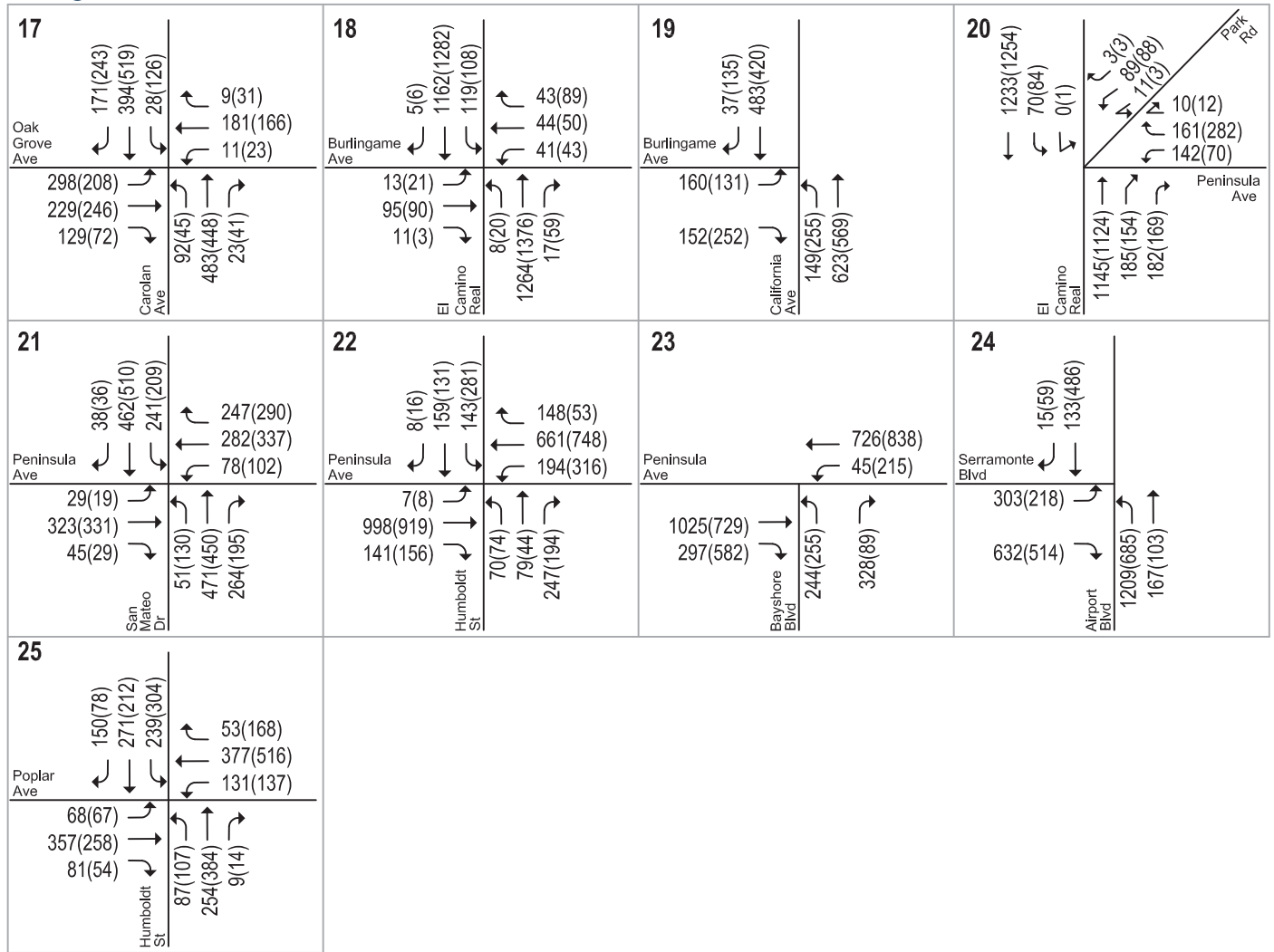


LEGEND

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

Figure 5  
Future (2040) Intersection Volumes

Burlingame General Plan



LEGEND

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

Figure 5  
Future (2040) Intersection Volumes

# Traffic Data Service

San Jose, CA  
(408) 622-4787  
tdsbay@cs.com

File Name : 1AM FINAL  
Site Code : 00000001  
Start Date : 5/30/2018  
Page No : 1

## Groups Printed- Lights - Buses - Trucks

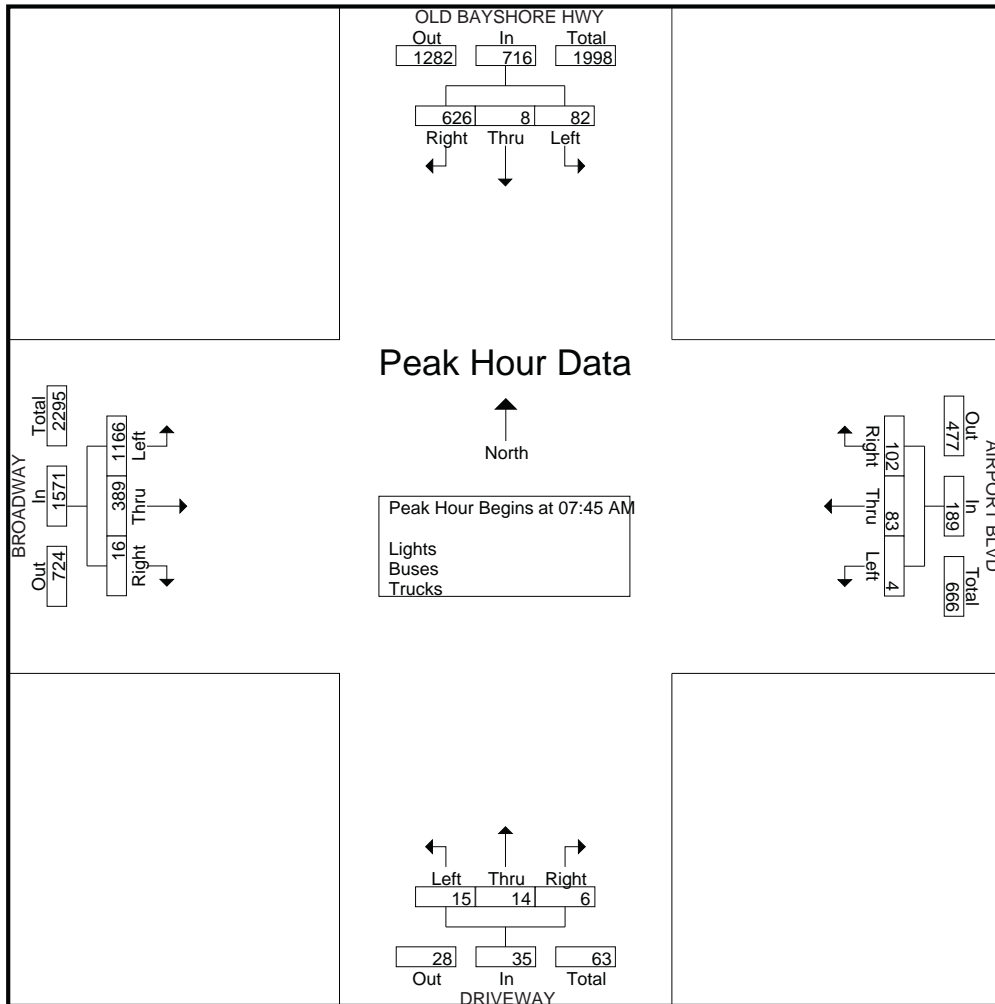
Start Time	OLD BAYSHORE HWY Southbound					AIRPORT BLVD Westbound					DRIVEWAY Northbound					BROADWAY Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	139	6	5	0	150	15	11	0	2	28	2	3	5	3	13	5	45	196	0	246	437
07:15 AM	137	2	10	3	152	15	11	2	0	28	3	5	4	1	13	5	57	269	0	331	524
07:30 AM	167	2	9	1	179	26	15	1	2	44	4	4	0	1	9	5	65	266	0	336	568
07:45 AM	170	2	17	3	192	22	29	3	1	55	1	4	4	1	10	8	78	302	0	388	645
Total	613	12	41	7	673	78	66	6	5	155	10	16	13	6	45	23	245	1033	0	1301	2174
08:00 AM	161	4	15	1	181	28	15	0	0	43	2	4	1	0	7	4	93	293	0	390	621
08:15 AM	147	1	21	0	169	33	22	0	2	57	2	1	5	0	8	2	91	289	0	382	616
08:30 AM	148	1	29	4	182	19	17	1	0	37	1	5	5	0	11	2	127	282	0	411	641
08:45 AM	158	4	10	1	173	24	17	1	0	42	3	2	2	0	7	2	100	253	0	355	577
Total	614	10	75	6	705	104	71	2	2	179	8	12	13	0	33	10	411	1117	0	1538	2455
Grand Total	1227	22	116	13	1378	182	137	8	7	334	18	28	26	6	78	33	656	2150	0	2839	4629
Apprch %	89	1.6	8.4	0.9		54.5	41	2.4	2.1		23.1	35.9	33.3	7.7		1.2	23.1	75.7	0		
Total %	26.5	0.5	2.5	0.3	29.8	3.9	3	0.2	0.2	7.2	0.4	0.6	0.6	0.1	1.7	0.7	14.2	46.4	0	61.3	
Lights	1151	19	104	13	1287	167	122	7	7	303	9	28	26	6	69	25	608	2099	0	2732	4391
% Lights	93.8	86.4	89.7	100	93.4	91.8	89.1	87.5	100	90.7	50	100	100	100	88.5	75.8	92.7	97.6	0	96.2	94.9
Buses	16	0	7	0	23	5	3	1	0	9	5	0	0	0	5	5	23	11	0	39	76
% Buses	1.3	0	6	0	1.7	2.7	2.2	12.5	0	2.7	27.8	0	0	0	6.4	15.2	3.5	0.5	0	1.4	1.6
Trucks	60	3	5	0	68	10	12	0	0	22	4	0	0	0	4	3	25	40	0	68	162
% Trucks	4.9	13.6	4.3	0	4.9	5.5	8.8	0	0	6.6	22.2	0	0	0	5.1	9.1	3.8	1.9	0	2.4	3.5

Start Time	OLD BAYSHORE HWY Southbound				AIRPORT BLVD Westbound				DRIVEWAY Northbound				BROADWAY Eastbound				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	170	2	17	189	22	29	3	54	1	4	4	9	8	78	302	388	640
08:00 AM	161	4	15	180	28	15	0	43	2	4	1	7	4	93	293	390	620
08:15 AM	147	1	21	169	33	22	0	55	2	1	5	8	2	91	289	382	614
08:30 AM	148	1	29	178	19	17	1	37	1	5	5	11	2	127	282	411	637
Total Volume	626	8	82	716	102	83	4	189	6	14	15	35	16	389	1166	1571	2511
% App. Total	87.4	1.1	11.5		54	43.9	2.1		17.1	40	42.9		1	24.8	74.2		
PHF	.921	.500	.707	.947	.773	.716	.333	.859	.750	.700	.750	.795	.500	.766	.965	.956	.981

# Traffic Data Service

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 tdsbay@cs.com

File Name : 1AM FINAL  
 Site Code : 00000001  
 Start Date : 5/30/2018  
 Page No : 1

Groups Printed- Bikes

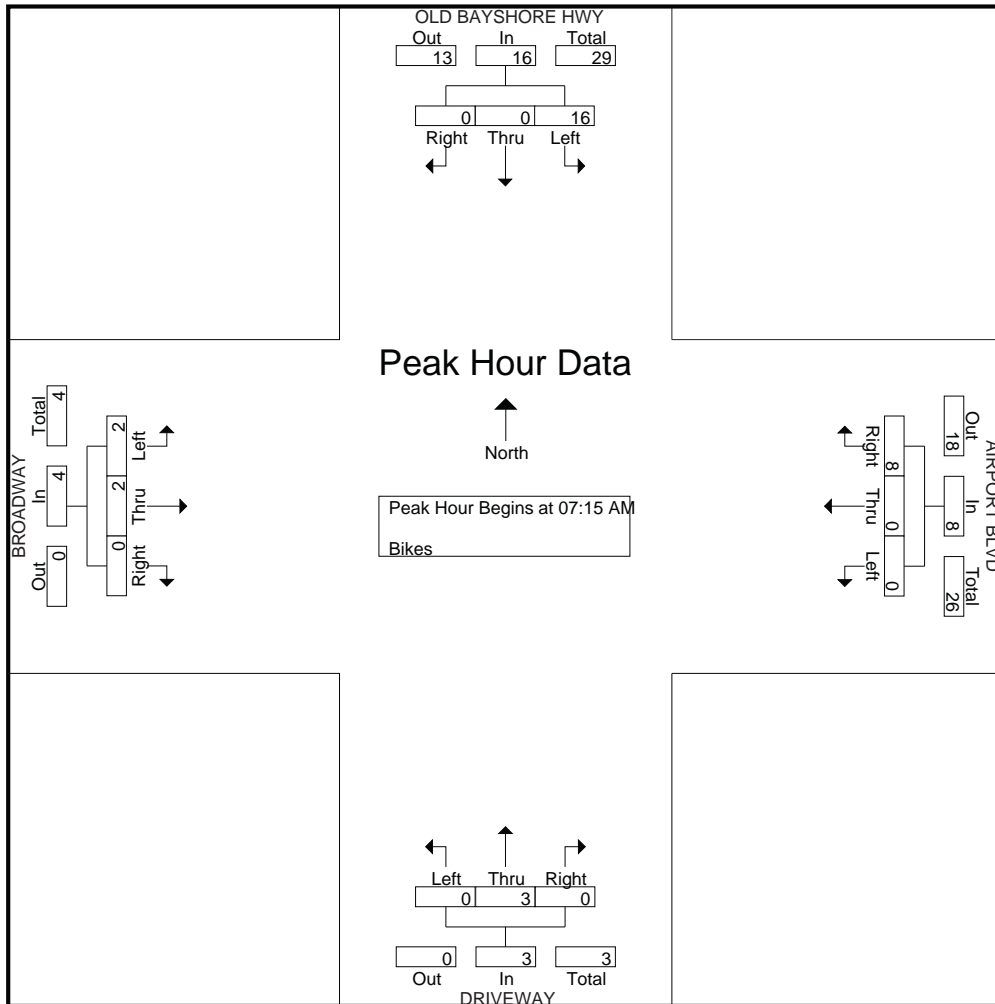
Start Time	OLD BAYSHORE HWY Southbound					AIRPORT BLVD Westbound					DRIVEWAY Northbound					BROADWAY Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	5	0	5	3	0	0	0	3	0	1	0	0	1	0	0	0	0	0	9
07:30 AM	0	0	7	0	7	3	0	0	0	3	0	2	0	0	2	0	1	0	0	1	13
07:45 AM	0	0	3	0	3	1	0	0	0	1	0	0	0	0	0	0	0	1	0	1	5
<b>Total</b>	0	0	15	0	15	7	0	0	0	7	0	3	0	0	3	0	1	1	0	2	27
08:00 AM	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	1	1	0	2	4
08:15 AM	0	0	0	0	0	2	1	0	0	3	0	0	0	0	0	0	1	1	0	2	5
08:30 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	3
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
<b>Total</b>	0	0	2	0	2	3	1	0	0	4	0	0	0	0	0	0	3	4	0	7	13
Grand Total	0	0	17	0	17	10	1	0	0	11	0	3	0	0	3	0	4	5	0	9	40
Apprch %	0	0	100	0		90.9	9.1	0	0		0	100	0	0		0	44.4	55.6	0		
Total %	0	0	42.5	0	42.5	25	2.5	0	0	27.5	0	7.5	0	0	7.5	0	10	12.5	0	22.5	

Start Time	OLD BAYSHORE HWY Southbound				AIRPORT BLVD Westbound				DRIVEWAY Northbound				BROADWAY Eastbound				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	5	5	3	0	0	3	0	1	0	1	0	0	0	0	9
07:30 AM	0	0	7	7	3	0	0	3	0	2	0	2	0	1	0	1	13
07:45 AM	0	0	3	3	1	0	0	1	0	0	0	0	0	0	1	1	5
08:00 AM	0	0	1	1	1	0	0	1	0	0	0	0	0	1	1	2	4
Total Volume	0	0	16	16	8	0	0	8	0	3	0	3	0	2	2	4	31
% App. Total	0	0	100		100	0	0		0	100	0		0	50	50		
PHF	.000	.000	.571	.571	.667	.000	.000	.667	.000	.375	.000	.375	.000	.500	.500	.500	.596

# Traffic Data Service

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# Traffic Data Service

San Jose, CA  
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 tdsbay@cs.com

File Name : 1PM FINAL

Site Code : 00000001

Start Date : 5/30/2018

Page No : 1

Groups Printed- Lights - Buses - Trucks

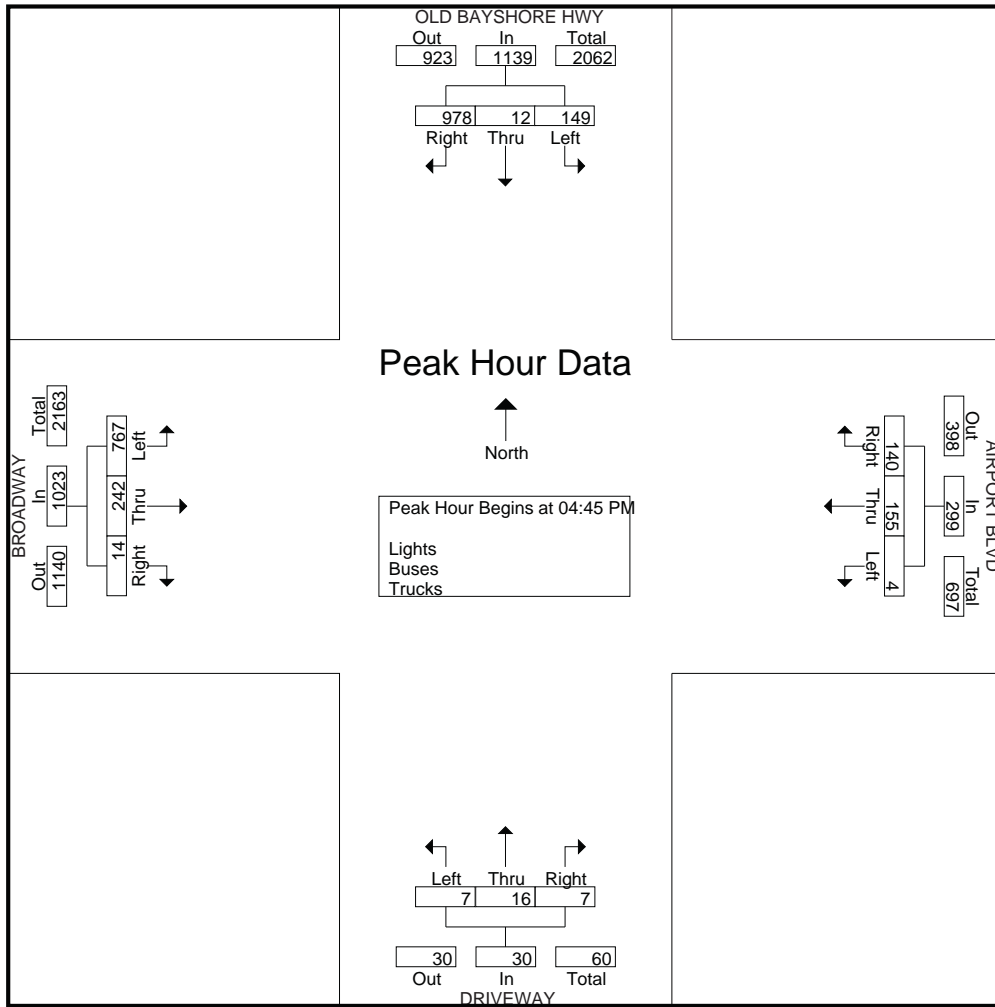
Start Time	OLD BAYSHORE HWY Southbound					AIRPORT BLVD Westbound					DRIVEWAY Northbound					BROADWAY Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
04:00 PM	205	0	33	3	241	20	37	1	2	60	2	4	4	4	14	3	53	174	0	230	545
04:15 PM	206	1	29	0	236	28	34	0	0	62	1	4	2	2	9	5	53	211	0	269	576
04:30 PM	248	0	29	2	279	28	31	1	2	62	3	3	6	0	12	6	58	176	0	240	593
04:45 PM	207	2	32	3	244	30	47	1	2	80	2	5	3	2	12	3	74	205	0	282	618
<b>Total</b>	866	3	123	8	1000	106	149	3	6	264	8	16	15	8	47	17	238	766	0	1021	2332
05:00 PM	271	2	48	1	322	42	39	1	2	84	2	2	0	0	4	5	64	218	0	287	697
05:15 PM	233	5	34	8	280	31	30	0	7	68	1	4	2	1	8	3	58	190	0	251	607
05:30 PM	267	3	35	1	306	37	39	2	2	80	2	5	2	1	10	3	46	154	0	203	599
05:45 PM	255	4	45	3	307	30	33	0	0	63	0	2	5	0	7	3	56	178	0	237	614
<b>Total</b>	1026	14	162	13	1215	140	141	3	11	295	5	13	9	2	29	14	224	740	0	978	2517
<b>Grand Total</b>	1892	17	285	21	2215	246	290	6	17	559	13	29	24	10	76	31	462	1506	0	1999	4849
Apprch %	85.4	0.8	12.9	0.9		44	51.9	1.1	3		17.1	38.2	31.6	13.2		1.6	23.1	75.3	0		
Total %	39	0.4	5.9	0.4	45.7	5.1	6	0.1	0.4	11.5	0.3	0.6	0.5	0.2	1.6	0.6	9.5	31.1	0	41.2	
Lights	1861	15	281	21	2178	233	281	5	17	536	12	29	23	10	74	24	412	1483	0	1919	4707
% Lights	98.4	88.2	98.6	100	98.3	94.7	96.9	83.3	100	95.9	92.3	100	95.8	100	97.4	77.4	89.2	98.5	0	96	97.1
Buses	5	2	2	0	9	7	4	0	0	11	1	0	0	0	1	7	37	4	0	48	69
% Buses	0.3	11.8	0.7	0	0.4	2.8	1.4	0	0	2	7.7	0	0	0	1.3	22.6	8	0.3	0	2.4	1.4
Trucks	26	0	2	0	28	6	5	1	0	12	0	0	1	0	1	0	13	19	0	32	73
% Trucks	1.4	0	0.7	0	1.3	2.4	1.7	16.7	0	2.1	0	0	4.2	0	1.3	0	2.8	1.3	0	1.6	1.5

Start Time	OLD BAYSHORE HWY Southbound				AIRPORT BLVD Westbound				DRIVEWAY Northbound				BROADWAY Eastbound				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	207	2	32	241	30	47	1	78	2	5	3	10	3	74	205	282	611
05:00 PM	271	2	48	321	42	39	1	82	2	2	0	4	5	64	218	287	694
05:15 PM	233	5	34	272	31	30	0	61	1	4	2	7	3	58	190	251	591
05:30 PM	267	3	35	305	37	39	2	78	2	5	2	9	3	46	154	203	595
Total Volume	978	12	149	1139	140	155	4	299	7	16	7	30	14	242	767	1023	2491
% App. Total	85.9	1.1	13.1		46.8	51.8	1.3		23.3	53.3	23.3		1.4	23.7	75		
PHF	.902	.600	.776	.887	.833	.824	.500	.912	.875	.800	.583	.750	.700	.818	.880	.891	.897

# Traffic Data Service

San Jose, CA  
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File Name : 1PM FINAL  
 Site Code : 00000001  
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# Traffic Data Service

San Jose, CA  
 (408) 622-4787  
 tdsbay@cs.com

File Name : 1PM FINAL  
 Site Code : 00000001  
 Start Date : 5/30/2018  
 Page No : 1

## Groups Printed- Bikes

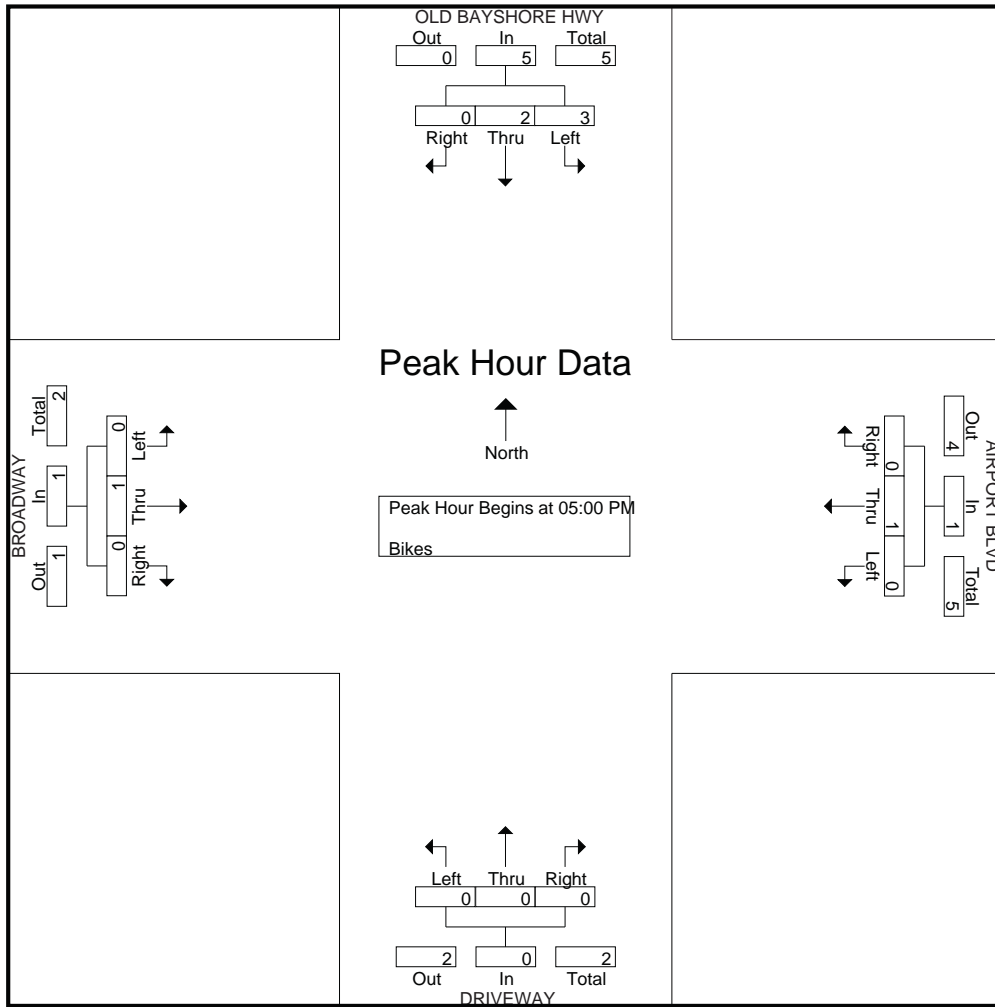
Start Time	OLD BAYSHORE HWY Southbound					AIRPORT BLVD Westbound					DRIVEWAY Northbound					BROADWAY Eastbound					Int. Total		
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total			
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:15 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	1	0	2	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:30 PM	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
05:45 PM	0	2	0	0	2	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	4
Total	0	2	3	0	5	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	7
Grand Total	1	2	5	0	8	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	10
Apprch %	12.5	25	62.5	0		0	100	0	0		0	0	0	0		0	100	0	0				
Total %	10	20	50	0	80	0	10	0	0	10	0	0	0	0	0	0	10	0	0	0	10		

Start Time	OLD BAYSHORE HWY Southbound				AIRPORT BLVD Westbound				DRIVEWAY Northbound				BROADWAY Eastbound				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
05:15 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	
05:30 PM	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	
05:45 PM	0	2	0	2	0	1	0	1	0	0	0	0	0	1	0	1	
Total Volume	0	2	3	5	0	1	0	1	0	0	0	0	0	1	0	1	
% App. Total	0	40	60		0	100	0		0	0	0		0	100	0		
PHF	.000	.250	.375	.625	.000	.250	.000	.250	.000	.000	.000	.000	.000	.250	.000	.250	

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# Traffic Data Service

San Jose, CA  
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 tdsbay@cs.com

File Name : 2AM FINAL  
 Site Code : 00000002  
 Start Date : 5/30/2018  
 Page No : 1

Groups Printed- Lights - Buses - Trucks

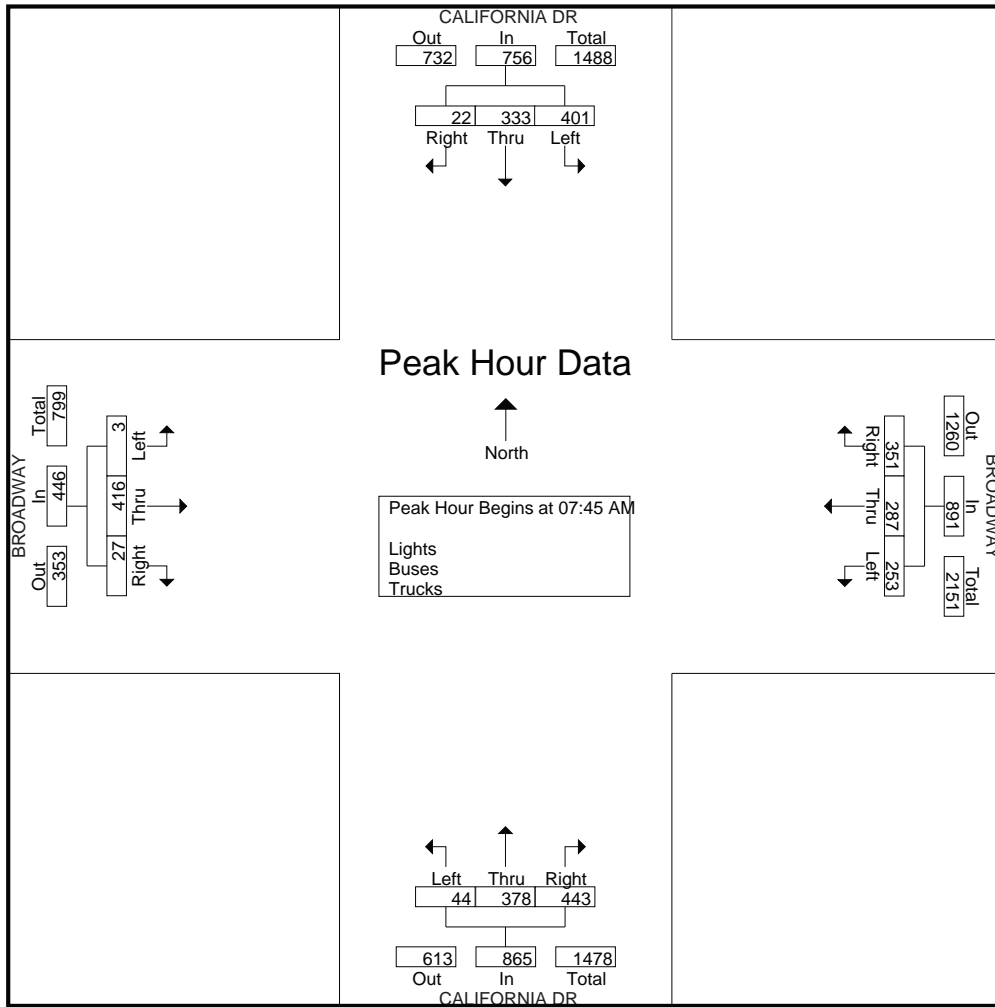
Start Time	CALIFORNIA DR Southbound					BROADWAY Westbound					CALIFORNIA DR Northbound					BROADWAY Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	6	35	39	3	83	34	46	67	0	147	109	35	5	0	149	2	78	0	1	81	460
07:15 AM	2	40	61	4	107	50	56	35	1	142	118	45	9	5	177	3	75	0	2	80	506
07:30 AM	2	71	84	2	159	72	71	74	1	218	101	71	7	4	183	6	99	0	3	108	668
07:45 AM	3	79	109	2	193	107	72	67	2	248	113	101	10	6	230	10	109	0	5	124	795
<b>Total</b>	13	225	293	11	542	263	245	243	4	755	441	252	31	15	739	21	361	0	11	393	2429
08:00 AM	5	74	98	3	180	90	75	72	2	239	121	120	16	5	262	6	93	1	2	102	783
08:15 AM	8	90	111	1	210	83	79	50	2	214	90	85	9	9	193	4	94	2	2	102	719
08:30 AM	6	90	83	0	179	71	61	64	4	200	119	72	9	6	206	7	120	0	0	127	712
08:45 AM	7	74	105	9	195	68	82	68	3	221	98	70	14	4	186	3	96	2	2	103	705
<b>Total</b>	26	328	397	13	764	312	297	254	11	874	428	347	48	24	847	20	403	5	6	434	2919
Grand Total	39	553	690	24	1306	575	542	497	15	1629	869	599	79	39	1586	41	764	5	17	827	5348
Apprch %	3	42.3	52.8	1.8		35.3	33.3	30.5	0.9		54.8	37.8	5	2.5		5	92.4	0.6	2.1		
Total %	0.7	10.3	12.9	0.4	24.4	10.8	10.1	9.3	0.3	30.5	16.2	11.2	1.5	0.7	29.7	0.8	14.3	0.1	0.3	15.5	
Lights	39	544	688	24	1295	552	534	472	15	1573	851	584	76	39	1550	41	757	5	17	820	5238
% Lights	100	98.4	99.7	100	99.2	96	98.5	95	100	96.6	97.9	97.5	96.2	100	97.7	100	99.1	100	100	99.2	97.9
Buses	0	6	1	0	7	3	1	6	0	10	6	10	0	0	16	0	0	0	0	0	33
% Buses	0	1.1	0.1	0	0.5	0.5	0.2	1.2	0	0.6	0.7	1.7	0	0	1	0	0	0	0	0	0.6
Trucks	0	3	1	0	4	20	7	19	0	46	12	5	3	0	20	0	7	0	0	7	77
% Trucks	0	0.5	0.1	0	0.3	3.5	1.3	3.8	0	2.8	1.4	0.8	3.8	0	1.3	0	0.9	0	0	0.8	1.4

Start Time	CALIFORNIA DR Southbound				BROADWAY Westbound				CALIFORNIA DR Northbound				BROADWAY Eastbound				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	3	79	109	191	<b>107</b>	72	67	<b>246</b>	113	101	10	224	<b>10</b>	109	0	119	<b>780</b>
08:00 AM	5	74	98	177	90	75	<b>72</b>	<b>237</b>	<b>121</b>	<b>120</b>	<b>16</b>	<b>257</b>	6	93	1	100	771
08:15 AM	<b>8</b>	<b>90</b>	<b>111</b>	<b>209</b>	83	<b>79</b>	50	212	90	85	9	184	4	94	<b>2</b>	100	705
08:30 AM	6	90	83	179	71	61	64	196	119	72	9	200	7	<b>120</b>	0	<b>127</b>	702
Total Volume	22	333	401	756	351	287	253	891	443	378	44	865	27	416	3	446	2958
% App. Total	2.9	44	53		39.4	32.2	28.4		51.2	43.7	5.1		6.1	93.3	0.7		
PHF	.688	.925	.903	.904	.820	.908	.878	.905	.915	.788	.688	.841	.675	.867	.375	.878	.948

# Traffic Data Service

San Jose, CA  
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File Name : 2AM FINAL  
 Site Code : 00000002  
 Start Date : 5/30/2018  
 Page No : 2



# Traffic Data Service

San Jose, CA  
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File Name : 2AM FINAL  
Site Code : 00000002  
Start Date : 5/30/2018  
Page No : 1

## Groups Printed- Bikes

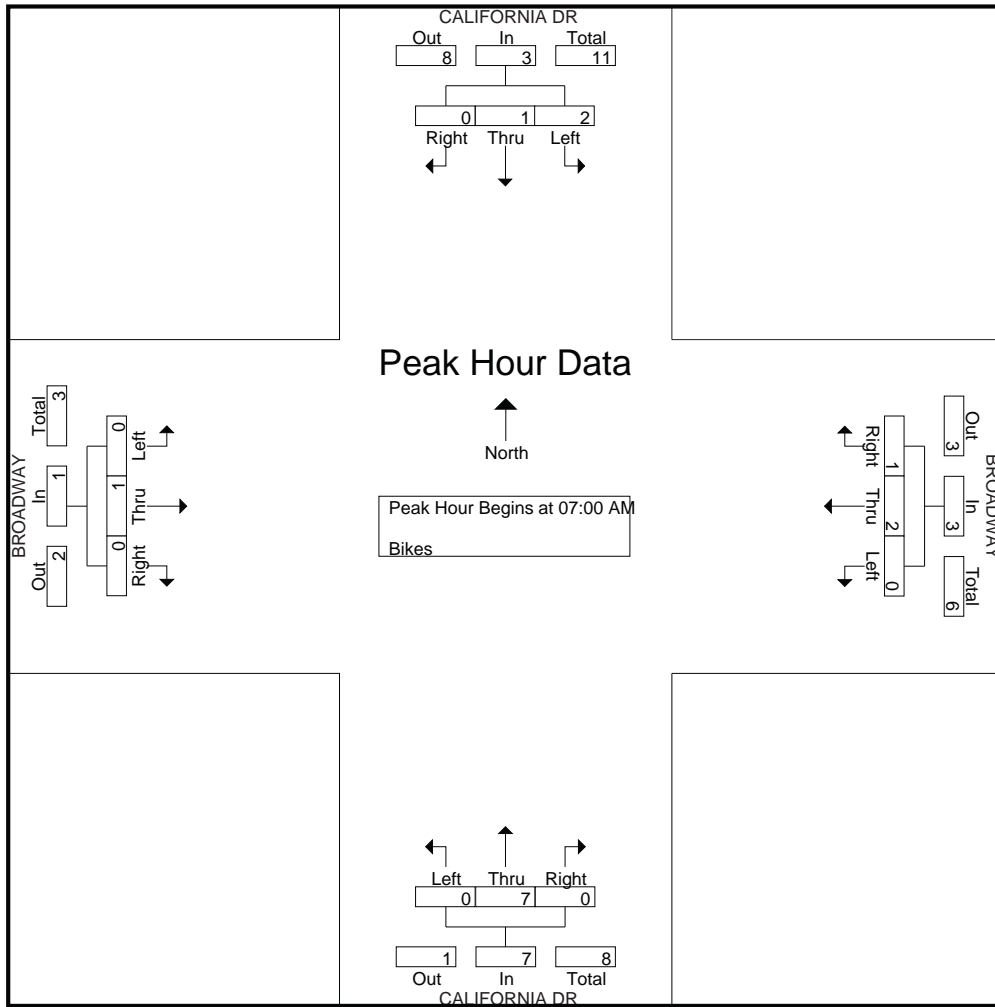
Start Time	CALIFORNIA DR Southbound					BROADWAY Westbound					CALIFORNIA DR Northbound					BROADWAY Eastbound					Int. Total	
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total		
07:00 AM	0	1	0	0	1	0	2	0	0	2	0	2	0	0	2	0	0	0	0	0	0	5
07:15 AM	0	0	0	0	0	1	0	0	0	1	0	3	0	0	3	0	0	0	0	0	0	4
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
07:45 AM	0	0	2	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	4
Total	0	1	2	0	3	1	2	0	0	3	0	7	0	0	7	0	1	0	0	0	1	14
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
08:15 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2
08:30 AM	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3
08:45 AM	0	2	0	0	2	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	4
Total	0	4	1	0	5	0	2	0	0	2	0	1	0	0	1	0	2	0	0	0	2	10
Grand Total	0	5	3	0	8	1	4	0	0	5	0	8	0	0	8	0	3	0	0	0	3	24
Apprch %	0	62.5	37.5	0		20	80	0	0		0	100	0	0		0	100	0	0			
Total %	0	20.8	12.5	0	33.3	4.2	16.7	0	0	20.8	0	33.3	0	0	33.3	0	12.5	0	0	12.5		

Start Time	CALIFORNIA DR Southbound				BROADWAY Westbound				CALIFORNIA DR Northbound				BROADWAY Eastbound				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	1	0	1	0	2	0	2	0	2	0	2	0	0	0	0	5
07:15 AM	0	0	0	0	1	0	0	1	0	3	0	3	0	0	0	0	4
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
07:45 AM	0	0	2	2	0	0	0	0	0	2	0	2	0	0	0	0	4
Total Volume	0	1	2	3	1	2	0	3	0	7	0	7	0	0	1	0	14
% App. Total	0	33.3	66.7		33.3	66.7	0		0	100	0		0	100	0		
PHF	.000	.250	.250	.375	.250	.250	.000	.375	.000	.583	.000	.583	.000	.250	.000	.250	.700

# Traffic Data Service

San Jose, CA  
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File Name : 2AM FINAL  
 Site Code : 00000002  
 Start Date : 5/30/2018  
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# Traffic Data Service

San Jose, CA  
 (408) 622-4787  
 tdsbay@cs.com

File Name : 2PM FINAL  
 Site Code : 00000002  
 Start Date : 5/30/2018  
 Page No : 1

Groups Printed- Lights - Buses - Trucks

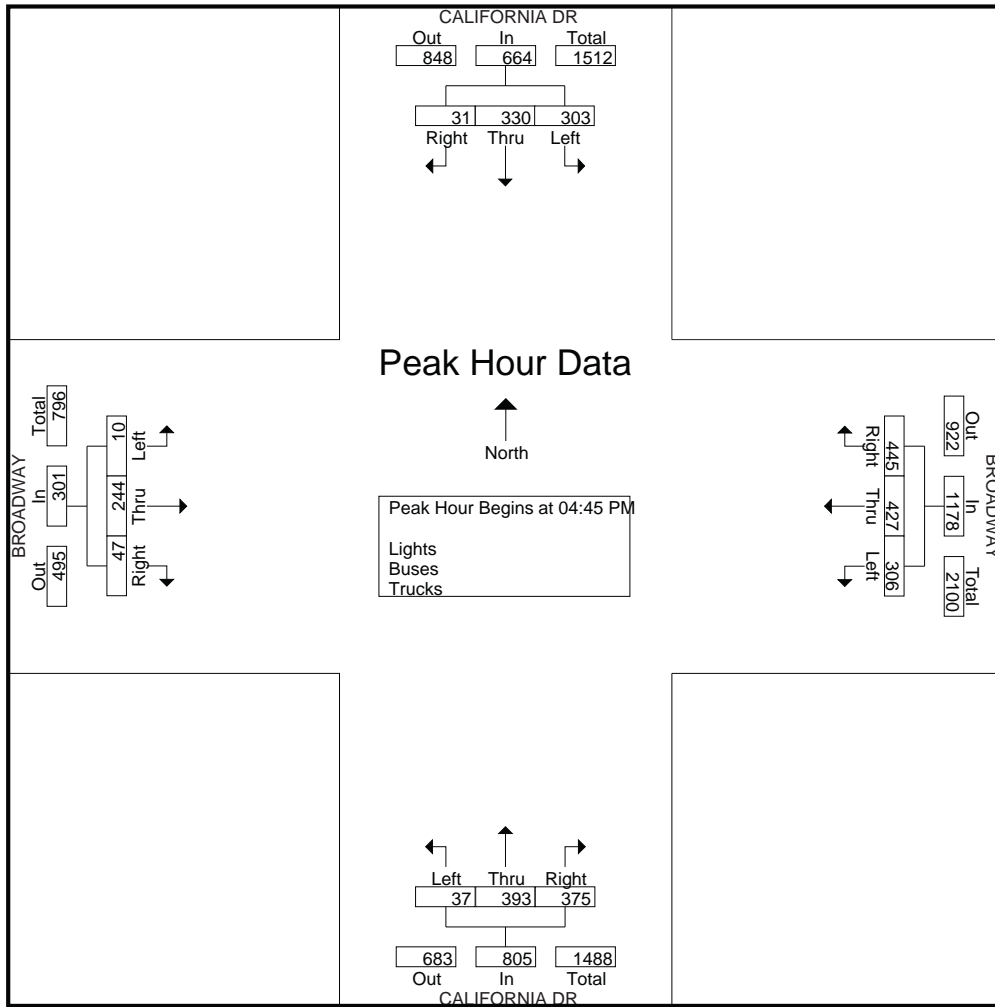
Start Time	CALIFORNIA DR Southbound					BROADWAY Westbound					CALIFORNIA DR Northbound					BROADWAY Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
04:00 PM	8	75	77	4	164	65	83	83	1	232	91	97	6	7	201	12	59	6	6	83	680
04:15 PM	11	67	74	1	153	85	84	86	1	256	108	58	12	8	186	11	48	4	1	64	659
04:30 PM	8	60	83	0	151	79	105	81	0	265	108	65	9	8	190	17	70	1	1	89	695
04:45 PM	4	89	83	0	176	100	106	77	2	285	100	97	10	2	209	10	52	7	1	70	740
<b>Total</b>	<b>31</b>	<b>291</b>	<b>317</b>	<b>5</b>	<b>644</b>	<b>329</b>	<b>378</b>	<b>327</b>	<b>4</b>	<b>1038</b>	<b>407</b>	<b>317</b>	<b>37</b>	<b>25</b>	<b>786</b>	<b>50</b>	<b>229</b>	<b>18</b>	<b>9</b>	<b>306</b>	<b>2774</b>
05:00 PM	8	67	66	8	149	114	117	80	2	313	94	83	4	7	188	11	82	2	1	96	746
05:15 PM	12	86	82	4	184	111	100	63	2	276	92	117	11	4	224	16	49	1	2	68	752
05:30 PM	7	88	72	6	173	120	104	86	2	312	89	96	12	10	207	10	61	0	4	75	767
05:45 PM	8	62	42	4	116	105	133	88	0	326	74	101	3	11	189	9	75	6	2	92	723
<b>Total</b>	<b>35</b>	<b>303</b>	<b>262</b>	<b>22</b>	<b>622</b>	<b>450</b>	<b>454</b>	<b>317</b>	<b>6</b>	<b>1227</b>	<b>349</b>	<b>397</b>	<b>30</b>	<b>32</b>	<b>808</b>	<b>46</b>	<b>267</b>	<b>9</b>	<b>9</b>	<b>331</b>	<b>2988</b>
Grand Total	66	594	579	27	1266	779	832	644	10	2265	756	714	67	57	1594	96	496	27	18	637	5762
Apprch %	5.2	46.9	45.7	2.1		34.4	36.7	28.4	0.4		47.4	44.8	4.2	3.6		15.1	77.9	4.2	2.8		
Total %	1.1	10.3	10	0.5	22	13.5	14.4	11.2	0.2	39.3	13.1	12.4	1.2	1	27.7	1.7	8.6	0.5	0.3	11.1	
Lights	63	586	563	27	1239	771	822	633	10	2236	742	706	64	57	1569	94	489	27	18	628	5672
% Lights	95.5	98.7	97.2	100	97.9	99	98.8	98.3	100	98.7	98.1	98.9	95.5	100	98.4	97.9	98.6	100	100	98.6	98.4
Buses	2	4	3	0	9	1	2	7	0	10	4	4	1	0	9	0	0	0	0	0	28
% Buses	3	0.7	0.5	0	0.7	0.1	0.2	1.1	0	0.4	0.5	0.6	1.5	0	0.6	0	0	0	0	0	0.5
Trucks	1	4	13	0	18	7	8	4	0	19	10	4	2	0	16	2	7	0	0	9	62
% Trucks	1.5	0.7	2.2	0	1.4	0.9	1	0.6	0	0.8	1.3	0.6	3	0	1	2.1	1.4	0	0	1.4	1.1

Start Time	CALIFORNIA DR Southbound				BROADWAY Westbound				CALIFORNIA DR Northbound				BROADWAY Eastbound				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	4	<b>89</b>	<b>83</b>	176	100	106	77	283	<b>100</b>	97	10	207	10	52	<b>7</b>	69	735
05:00 PM	8	67	66	141	114	<b>117</b>	80	<b>311</b>	94	83	4	181	11	<b>82</b>	2	<b>95</b>	728
05:15 PM	<b>12</b>	86	82	<b>180</b>	111	100	63	274	92	<b>117</b>	11	<b>220</b>	<b>16</b>	49	1	66	740
05:30 PM	7	88	72	167	<b>120</b>	104	<b>86</b>	310	89	96	<b>12</b>	197	10	61	0	71	<b>745</b>
Total Volume	31	330	303	664	445	427	306	1178	375	393	37	805	47	244	10	301	2948
% App. Total	4.7	49.7	45.6		37.8	36.2	26		46.6	48.8	4.6		15.6	81.1	3.3		
PHF	.646	.927	.913	.922	.927	.912	.890	.947	.938	.840	.771	.915	.734	.744	.357	.792	.989

# Traffic Data Service

San Jose, CA  
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File Name : 2PM FINAL  
 Site Code : 00000002  
 Start Date : 5/30/2018  
 Page No : 2



# Traffic Data Service

San Jose, CA  
(408) 622-4787  
tdsbay@cs.com

File Name : 2PM FINAL  
Site Code : 00000002  
Start Date : 5/30/2018  
Page No : 1

## Groups Printed- Bikes

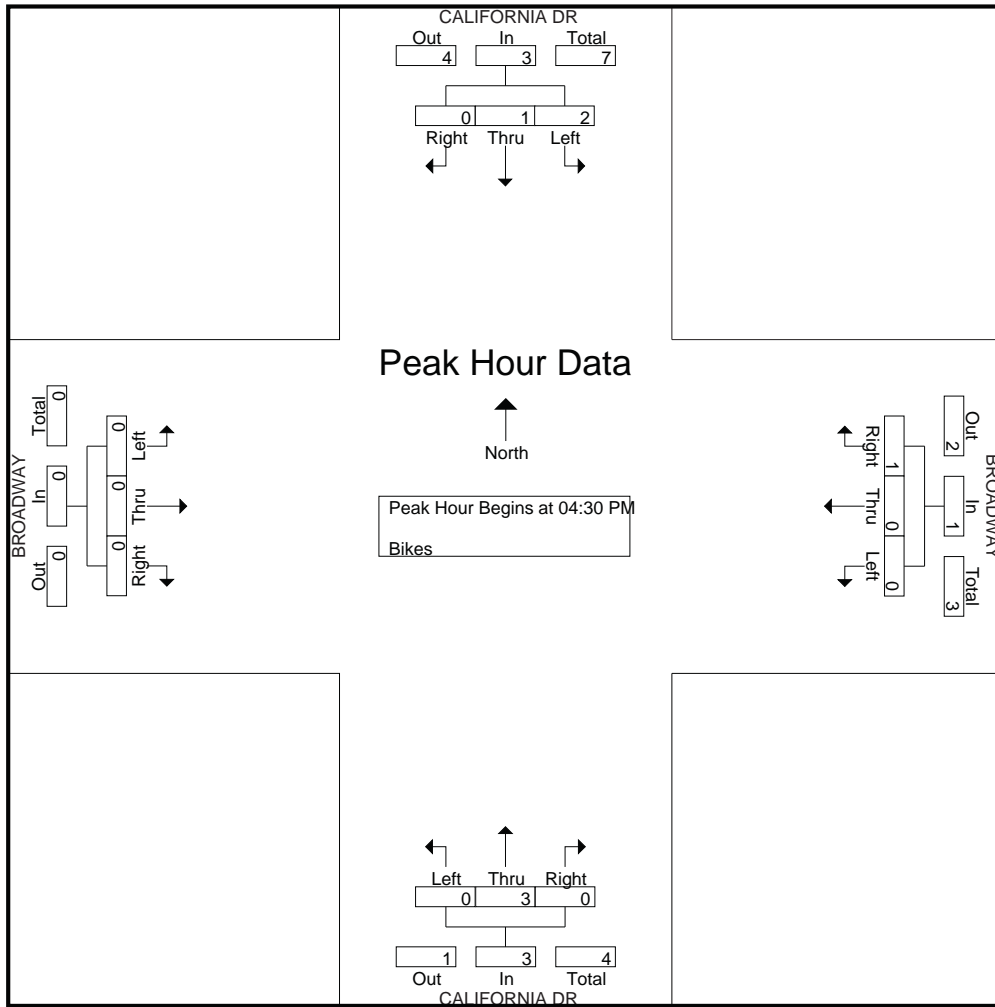
Start Time	CALIFORNIA DR Southbound					BROADWAY Westbound					CALIFORNIA DR Northbound					BROADWAY Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
04:00 PM	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	2
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	2
04:45 PM	0	0	1	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
Total	0	0	1	0	1	2	1	0	0	3	0	2	0	0	2	0	0	0	0	0	6
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	1	1	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
05:45 PM	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
Total	0	1	2	0	3	1	0	0	0	1	0	2	0	0	2	0	0	0	0	0	6
Grand Total	0	1	3	0	4	3	1	0	0	4	0	4	0	0	4	0	0	0	0	0	12
Apprch %	0	25	75	0		75	25	0	0		0	100	0	0		0	0	0	0		
Total %	0	8.3	25	0	33.3	25	8.3	0	0	33.3	0	33.3	0	0	33.3	0	0	0	0	0	

Start Time	CALIFORNIA DR Southbound				BROADWAY Westbound				CALIFORNIA DR Northbound				BROADWAY Eastbound				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	1	0	0	1	0	1	0	1	0	0	0	0	2
04:45 PM	0	0	1	1	0	0	0	0	0	1	0	1	0	0	0	0	2
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
05:15 PM	0	1	1	2	0	0	0	0	0	1	0	1	0	0	0	3	
Total Volume	0	1	2	3	1	0	0	1	0	3	0	3	0	0	0	7	
% App. Total	0	33.3	66.7		100	0	0		0	100	0		0	0	0		
PHF	.000	.250	.500	.375	.250	.000	.000	.250	.000	.750	.000	.750	.000	.000	.000	.583	

# Traffic Data Service

San Jose, CA  
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File Name : 2PM FINAL  
 Site Code : 00000002  
 Start Date : 5/30/2018  
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# Traffic Data Service

San Jose, CA  
 (408) 622-4787  
 tdsbay@cs.com

File Name : 3AM FINAL  
 Site Code : 00000003  
 Start Date : 5/30/2018  
 Page No : 1

Groups Printed- Lights - Buses - Trucks

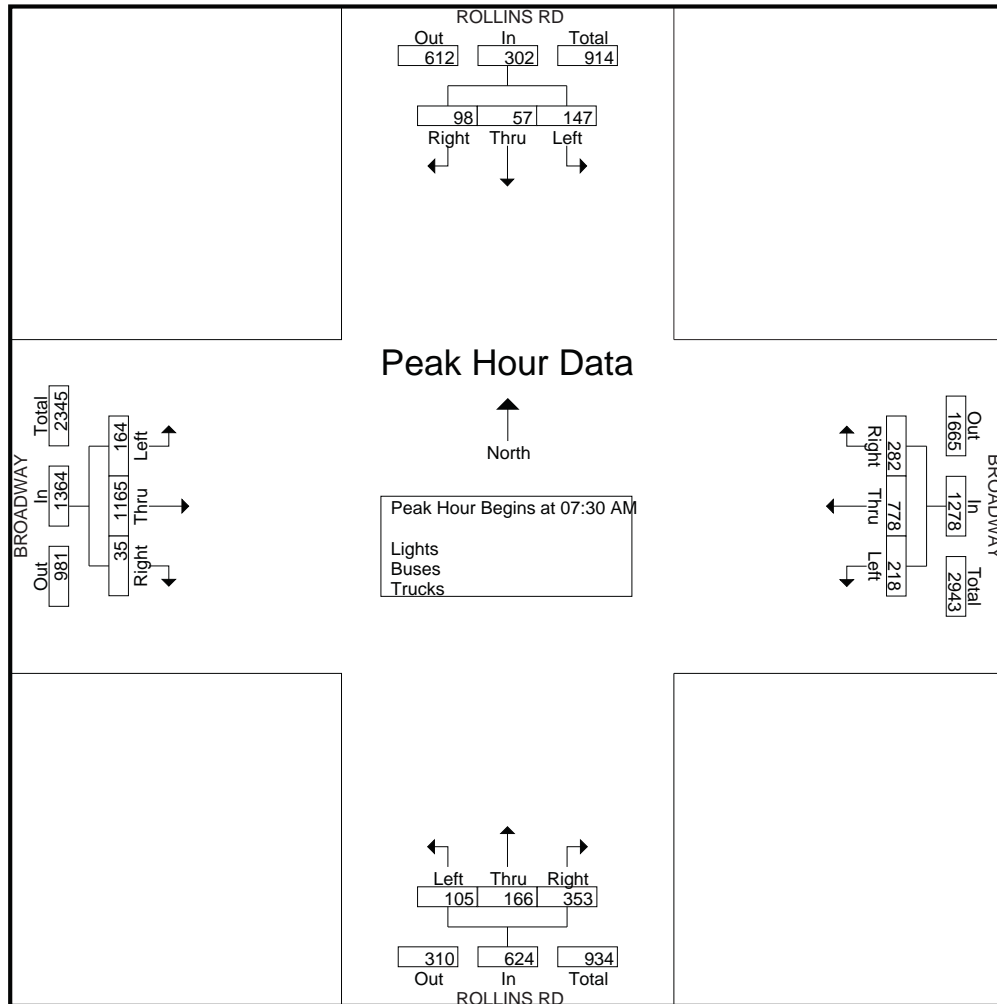
Start Time	ROLLINS RD Southbound					BROADWAY Westbound					ROLLINS RD Northbound					BROADWAY Eastbound					Int. Total	
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total		
07:00 AM	12	10	24	0	46	65	140	22	1	228	73	23	8	0	104	0	218	46	0	264	642	
07:15 AM	10	10	30	3	53	67	166	40	0	273	73	26	10	0	109	0	286	23	0	309	744	
07:30 AM	22	19	37	4	82	68	201	50	0	319	100	32	12	0	144	2	260	51	0	313	858	
07:45 AM	20	19	34	2	75	86	194	64	0	344	85	60	40	0	185	12	280	43	1	336	940	
<b>Total</b>	<b>64</b>	<b>58</b>	<b>125</b>	<b>9</b>	<b>256</b>	<b>286</b>	<b>701</b>	<b>176</b>	<b>1</b>	<b>1164</b>	<b>331</b>	<b>141</b>	<b>70</b>	<b>0</b>	<b>542</b>	<b>14</b>	<b>1044</b>	<b>163</b>	<b>1</b>	<b>1222</b>	<b>3184</b>	
08:00 AM	28	12	37	0	77	58	184	45	0	287	89	44	29	0	162	13	324	36	1	374	900	
08:15 AM	28	7	39	0	74	70	199	59	0	328	79	30	24	0	133	8	301	34	0	343	878	
08:30 AM	20	13	27	1	61	66	163	48	0	277	84	32	12	0	128	10	301	45	1	357	823	
08:45 AM	20	12	42	4	78	63	212	61	0	336	64	30	13	0	107	12	276	46	1	335	856	
<b>Total</b>	<b>96</b>	<b>44</b>	<b>145</b>	<b>5</b>	<b>290</b>	<b>257</b>	<b>758</b>	<b>213</b>	<b>0</b>	<b>1228</b>	<b>316</b>	<b>136</b>	<b>78</b>	<b>0</b>	<b>530</b>	<b>43</b>	<b>1202</b>	<b>161</b>	<b>3</b>	<b>1409</b>	<b>3457</b>	
Grand Total	160	102	270	14	546	543	1459	389	1	2392	647	277	148	0	1072	57	2246	324	4	2631	6641	
Apprch %	29.3	18.7	49.5	2.6		22.7	61	16.3	0		60.4	25.8	13.8	0		2.2	85.4	12.3	0.2			
Total %	2.4	1.5	4.1	0.2	8.2	8.2	22	5.9	0	36	9.7	4.2	2.2	0	16.1	0.9	33.8	4.9	0.1	39.6		
Lights	153	96	235	14	498	522	1409	383	0	2314	635	275	147	0	1057	57	2217	320	4	2598	6467	
% Lights	95.6	94.1	87	100	91.2	96.1	96.6	98.5	0	96.7	98.1	99.3	99.3	0	98.6	100	98.7	98.8	100	98.7	97.4	
Buses	0	0	7	0	7	0	10	1	0	11	0	1	0	0	1	0	8	0	0	0	8	27
% Buses	0	0	2.6	0	1.3	0	0.7	0.3	0	0.5	0	0.4	0	0	0.1	0	0.4	0	0	0	0.3	0.4
Trucks	7	6	28	0	41	21	40	5	1	67	12	1	1	0	14	0	21	4	0	25	147	
% Trucks	4.4	5.9	10.4	0	7.5	3.9	2.7	1.3	100	2.8	1.9	0.4	0.7	0	1.3	0	0.9	1.2	0	1	2.2	

Start Time	ROLLINS RD Southbound				BROADWAY Westbound				ROLLINS RD Northbound				BROADWAY Eastbound				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	22	<b>19</b>	<b>37</b>	<b>78</b>	68	<b>201</b>	50	319	<b>100</b>	<b>32</b>	<b>12</b>	144	2	260	<b>51</b>	313	854
07:45 AM	20	19	34	73	<b>86</b>	194	<b>64</b>	<b>344</b>	85	<b>60</b>	<b>40</b>	<b>185</b>	12	280	43	335	<b>937</b>
08:00 AM	<b>28</b>	12	37	77	58	184	45	287	89	44	29	162	<b>13</b>	<b>324</b>	36	<b>373</b>	899
08:15 AM	28	7	<b>39</b>	74	70	199	59	328	79	30	24	133	8	301	34	343	878
Total Volume	98	57	147	302	282	778	218	1278	353	166	105	624	35	1165	164	1364	3568
% App. Total	32.5	18.9	48.7		22.1	60.9	17.1		56.6	26.6	16.8		2.6	85.4	12		
PHF	.875	.750	.942	.968	.820	.968	.852	.929	.883	.692	.656	.843	.673	.899	.804	.914	.952

# Traffic Data Service

San Jose, CA  
 (408) 622-4787  
 tdsbay@cs.com

File Name : 3AM FINAL  
 Site Code : 00000003  
 Start Date : 5/30/2018  
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# Traffic Data Service

San Jose, CA  
(408) 622-4787  
tdsbay@cs.com

File Name : 3AM FINAL  
Site Code : 00000003  
Start Date : 5/30/2018  
Page No : 1

Groups Printed- Bikes

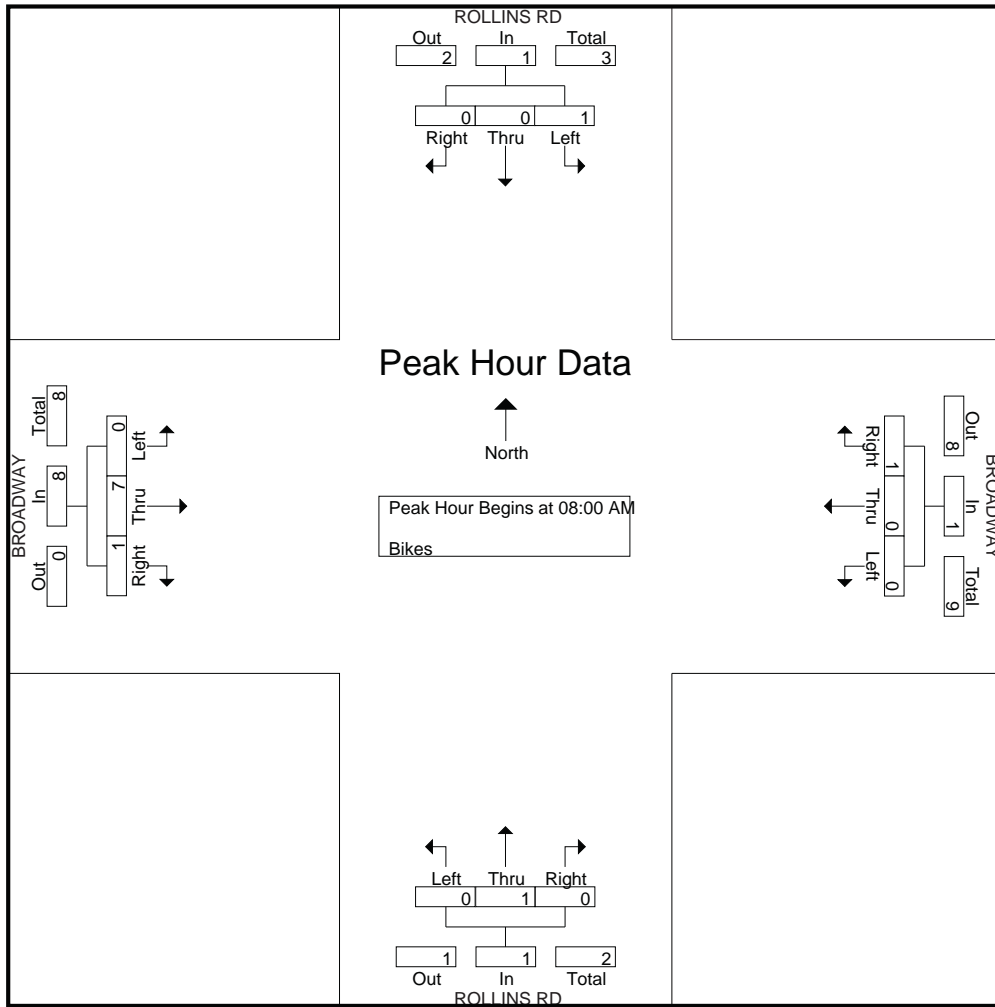
Start Time	ROLLINS RD Southbound					BROADWAY Westbound					ROLLINS RD Northbound					BROADWAY Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
08:00 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	3
08:15 AM	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	0	3	0	0	3	5
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
<b>Total</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>11</b>
Grand Total	0	0	1	0	1	1	0	0	0	1	0	1	0	0	1	1	7	0	0	8	11
Apprch %	0	0	100	0		100	0	0	0		0	100	0	0		12.5	87.5	0	0		
Total %	0	0	9.1	0	9.1	9.1	0	0	0	9.1	0	9.1	0	0	9.1	9.1	63.6	0	0	72.7	

Start Time	ROLLINS RD Southbound				BROADWAY Westbound				ROLLINS RD Northbound				BROADWAY Eastbound				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	0	1	1	0	0	0	0	0	0	0	0	1	1	0	2	3
08:15 AM	0	0	0	0	1	0	0	1	0	1	0	1	0	3	0	3	5
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Total Volume	0	0	1	1	1	0	0	1	0	1	0	1	1	7	0	8	11
% App. Total	0	0	100		100	0	0		0	100	0		12.5	87.5	0		
PHF	.000	.000	.250	.250	.250	.000	.000	.250	.000	.250	.000	.250	.250	.583	.000	.667	.550

# Traffic Data Service

San Jose, CA  
 (408) 622-4787  
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File Name : 3AM FINAL  
 Site Code : 00000003  
 Start Date : 5/30/2018  
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# Traffic Data Service

San Jose, CA  
 (408) 622-4787  
 tdsbay@cs.com

File Name : 3PM FINAL  
 Site Code : 00000003  
 Start Date : 5/30/2018  
 Page No : 1

Groups Printed- Lights - Buses - Trucks

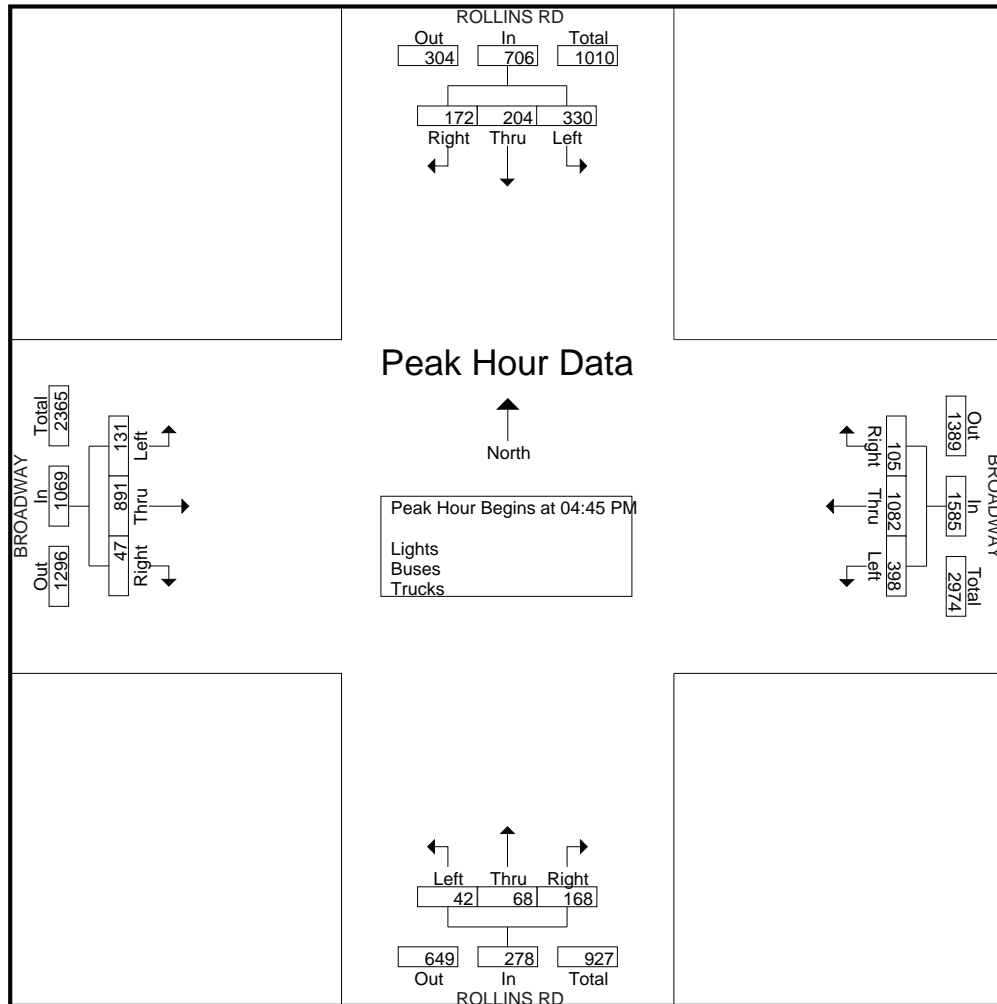
Start Time	ROLLINS RD Southbound					BROADWAY Westbound					ROLLINS RD Northbound					BROADWAY Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
04:00 PM	38	25	74	1	138	24	224	65	0	313	56	13	16	0	85	9	231	35	0	275	811
04:15 PM	29	31	67	0	127	33	228	79	0	340	38	17	14	0	69	6	244	20	0	270	806
04:30 PM	44	37	97	4	182	30	236	88	0	354	50	14	8	0	72	13	220	38	0	271	879
04:45 PM	39	33	87	0	159	22	275	111	0	408	44	15	5	0	64	9	232	35	0	276	907
<b>Total</b>	150	126	325	5	606	109	963	343	0	1415	188	59	43	0	290	37	927	128	0	1092	3403
05:00 PM	42	54	99	2	197	28	261	77	0	366	40	13	18	0	71	5	213	28	2	248	882
05:15 PM	48	64	83	4	199	24	248	114	0	386	44	27	10	0	81	19	230	36	2	287	953
05:30 PM	43	53	61	2	159	31	298	96	0	425	40	13	9	0	62	14	216	32	0	262	908
05:45 PM	36	47	66	2	151	25	313	124	0	462	41	11	7	0	59	8	197	22	0	227	899
<b>Total</b>	169	218	309	10	706	108	1120	411	0	1639	165	64	44	0	273	46	856	118	4	1024	3642
Grand Total	319	344	634	15	1312	217	2083	754	0	3054	353	123	87	0	563	83	1783	246	4	2116	7045
Apprch %	24.3	26.2	48.3	1.1		7.1	68.2	24.7	0		62.7	21.8	15.5	0		3.9	84.3	11.6	0.2		
Total %	4.5	4.9	9	0.2	18.6	3.1	29.6	10.7	0	43.3	5	1.7	1.2	0	8	1.2	25.3	3.5	0.1	30	
Lights	317	343	612	15	1287	202	2060	754	0	3016	350	119	86	0	555	83	1749	242	4	2078	6936
% Lights	99.4	99.7	96.5	100	98.1	93.1	98.9	100	0	98.8	99.2	96.7	98.9	0	98.6	100	98.1	98.4	100	98.2	98.5
Buses	0	0	6	0	6	0	9	0	0	9	0	1	0	0	1	0	5	0	0	5	21
% Buses	0	0	0.9	0	0.5	0	0.4	0	0	0.3	0	0.8	0	0	0.2	0	0.3	0	0	0.2	0.3
Trucks	2	1	16	0	19	15	14	0	0	29	3	3	1	0	7	0	29	4	0	33	88
% Trucks	0.6	0.3	2.5	0	1.4	6.9	0.7	0	0	0.9	0.8	2.4	1.1	0	1.2	0	1.6	1.6	0	1.6	1.2

Start Time	ROLLINS RD Southbound					BROADWAY Westbound					ROLLINS RD Northbound					BROADWAY Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	39	33	87		159	22	275	111		408	<b>44</b>	15	5		64	9	<b>232</b>	35		276	907
05:00 PM	42	54	<b>99</b>		<b>195</b>	28	261	77		366	40	13	<b>18</b>		71	5	213	28		246	878
05:15 PM	<b>48</b>	<b>64</b>	83		195	24	248	<b>114</b>		386	44	<b>27</b>	10		<b>81</b>	<b>19</b>	230	<b>36</b>		<b>285</b>	<b>947</b>
05:30 PM	43	53	61		157	<b>31</b>	<b>298</b>	96		<b>425</b>	40	13	9		62	14	216	32		262	906
Total Volume	172	204	330		706	105	1082	398		1585	168	68	42		278	47	891	131		1069	3638
% App. Total	24.4	28.9	46.7			6.6	68.3	25.1			60.4	24.5	15.1			4.4	83.3	12.3			
PHF	.896	.797	.833		.905	.847	.908	.873		.932	.955	.630	.583		.858	.618	.960	.910		.938	.960

# Traffic Data Service

San Jose, CA  
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File Name : 3PM FINAL  
 Site Code : 00000003  
 Start Date : 5/30/2018  
 Page No : 2



# Traffic Data Service

San Jose, CA  
 (408) 622-4787  
 tdsbay@cs.com

File Name : 3PM FINAL  
 Site Code : 00000003  
 Start Date : 5/30/2018  
 Page No : 1

Groups Printed- Bikes

Start Time	ROLLINS RD Southbound					BROADWAY Westbound					ROLLINS RD Northbound					BROADWAY Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
04:15 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	3
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
Total	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	3
Grand Total	0	2	1	0	3	0	2	0	0	2	0	0	0	0	0	0	0	1	0	1	6
Apprch %	0	66.7	33.3	0		0	100	0	0		0	0	0	0		0	0	100	0		
Total %	0	33.3	16.7	0	50	0	33.3	0	0	33.3	0	0	0	0	0	0	0	16.7	0	16.7	

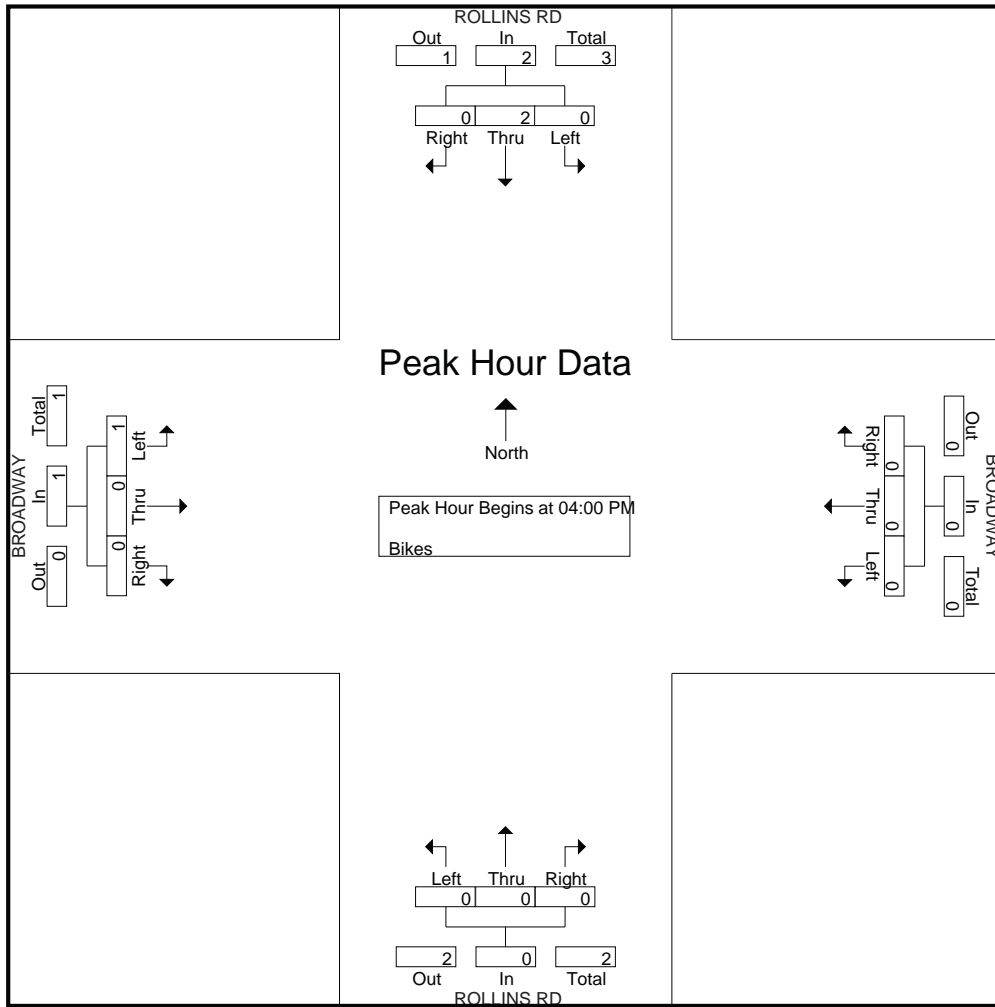
Start Time	ROLLINS RD Southbound					BROADWAY Westbound					ROLLINS RD Northbound					BROADWAY Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
04:15 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	3
% App. Total	0	100	0	0		0	0	0	0		0	0	0	0		0	0	100	0		
PHF	.000	.500	.000	.000	.500	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.250	.250	.750

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Entire Intersection Begins at 04:00 PM

# Traffic Data Service

San Jose, CA  
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File Name : 3PM FINAL  
 Site Code : 00000003  
 Start Date : 5/30/2018  
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# Traffic Data Service

San Jose, CA  
 (408) 622-4787  
 tdsbay@cs.com

File Name : 6AM FINAL  
 Site Code : 00000006  
 Start Date : 5/30/2018  
 Page No : 1

Groups Printed- Lights - Buses - Trucks

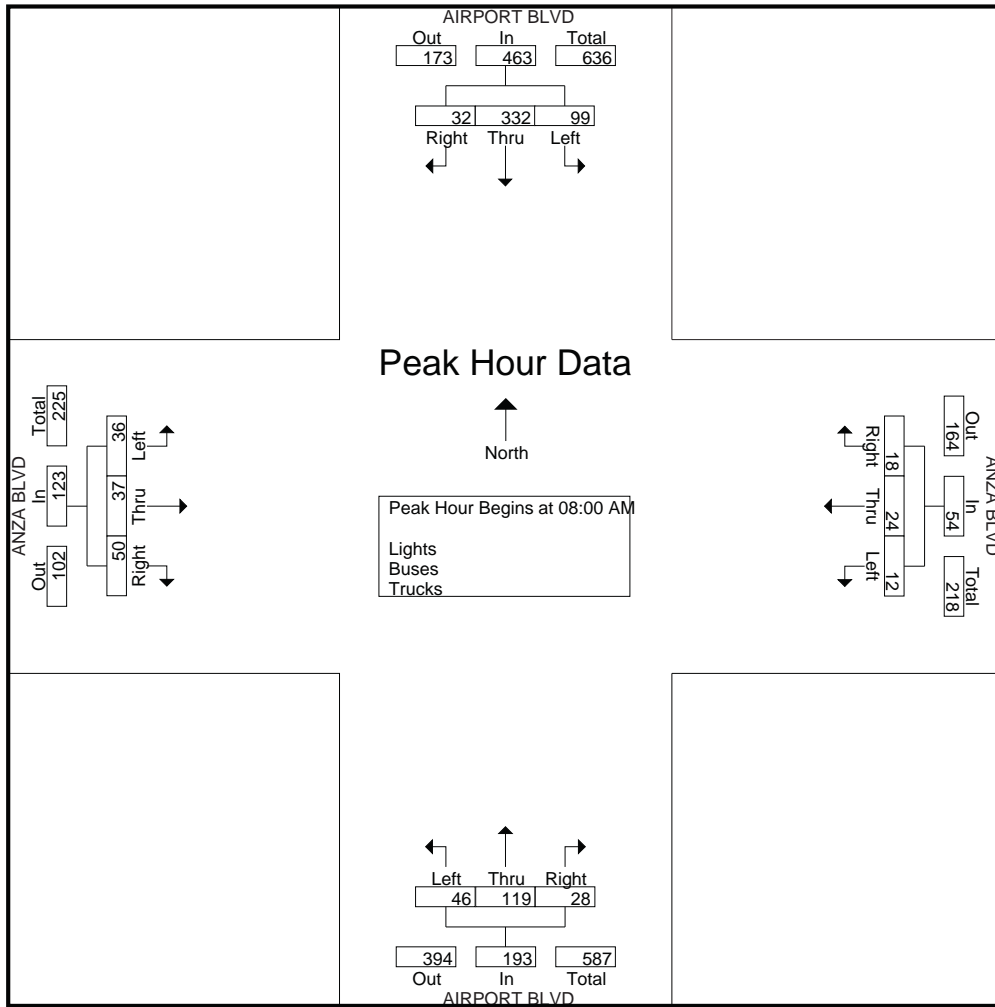
Start Time	AIRPORT BLVD Southbound					ANZA BLVD Westbound					AIRPORT BLVD Northbound					ANZA BLVD Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	5	37	5	0	47	2	4	3	0	9	2	9	11	0	22	11	7	11	3	32	110
07:15 AM	5	54	9	2	70	8	5	5	3	21	2	16	11	0	29	12	9	6	3	30	150
07:30 AM	6	42	18	1	67	3	4	2	1	10	7	28	14	0	49	6	8	8	2	24	150
07:45 AM	9	73	18	1	101	10	11	3	3	27	4	32	17	0	53	9	10	5	1	25	206
Total	25	206	50	4	285	23	24	13	7	67	15	85	53	0	153	38	34	30	9	111	616
08:00 AM	13	71	15	1	100	4	3	4	0	11	5	31	16	0	52	13	9	3	2	27	190
08:15 AM	4	81	25	0	110	7	10	2	1	20	7	40	4	0	51	7	9	11	2	29	210
08:30 AM	9	97	29	2	137	5	5	4	0	14	9	22	12	1	44	17	9	12	3	41	236
08:45 AM	6	83	30	1	120	2	6	2	0	10	7	26	14	4	51	13	10	10	3	36	217
Total	32	332	99	4	467	18	24	12	1	55	28	119	46	5	198	50	37	36	10	133	853
Grand Total	57	538	149	8	752	41	48	25	8	122	43	204	99	5	351	88	71	66	19	244	1469
Apprch %	7.6	71.5	19.8	1.1		33.6	39.3	20.5	6.6		12.3	58.1	28.2	1.4		36.1	29.1	27	7.8		
Total %	3.9	36.6	10.1	0.5	51.2	2.8	3.3	1.7	0.5	8.3	2.9	13.9	6.7	0.3	23.9	6	4.8	4.5	1.3	16.6	
Lights	49	487	146	8	690	41	40	23	8	112	36	181	74	3	294	79	71	60	19	229	1325
% Lights	86	90.5	98	100	91.8	100	83.3	92	100	91.8	83.7	88.7	74.7	60	83.8	89.8	100	90.9	100	93.9	90.2
Buses	2	17	2	0	21	0	3	0	0	3	3	5	17	0	25	0	0	4	0	4	53
% Buses	3.5	3.2	1.3	0	2.8	0	6.2	0	0	2.5	7	2.5	17.2	0	7.1	0	0	6.1	0	1.6	3.6
Trucks	6	34	1	0	41	0	5	2	0	7	4	18	8	2	32	9	0	2	0	11	91
% Trucks	10.5	6.3	0.7	0	5.5	0	10.4	8	0	5.7	9.3	8.8	8.1	40	9.1	10.2	0	3	0	4.5	6.2

Start Time	AIRPORT BLVD Southbound				ANZA BLVD Westbound				AIRPORT BLVD Northbound				ANZA BLVD Eastbound				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	13	71	15	99	4	3	4	11	5	31	16	52	13	9	3	25	187
08:15 AM	4	81	25	110	7	10	2	19	7	40	4	51	7	9	11	27	207
08:30 AM	9	97	29	135	5	5	4	14	9	22	12	43	17	9	12	38	230
08:45 AM	6	83	30	119	2	6	2	10	7	26	14	47	13	10	10	33	209
Total Volume	32	332	99	463	18	24	12	54	28	119	46	193	50	37	36	123	833
% App. Total	6.9	71.7	21.4		33.3	44.4	22.2		14.5	61.7	23.8		40.7	30.1	29.3		
PHF	.615	.856	.825	.857	.643	.600	.750	.711	.778	.744	.719	.928	.735	.925	.750	.809	.905

# Traffic Data Service

San Jose, CA  
 (408) 622-4787  
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File Name : 6AM FINAL  
 Site Code : 00000006  
 Start Date : 5/30/2018  
 Page No : 2



# Traffic Data Service

San Jose, CA  
**(408) 622-4787**  
 tdsbay@cs.com

File Name : 6AM FINAL  
 Site Code : 00000006  
 Start Date : 5/30/2018  
 Page No : 1

## Groups Printed- Bikes

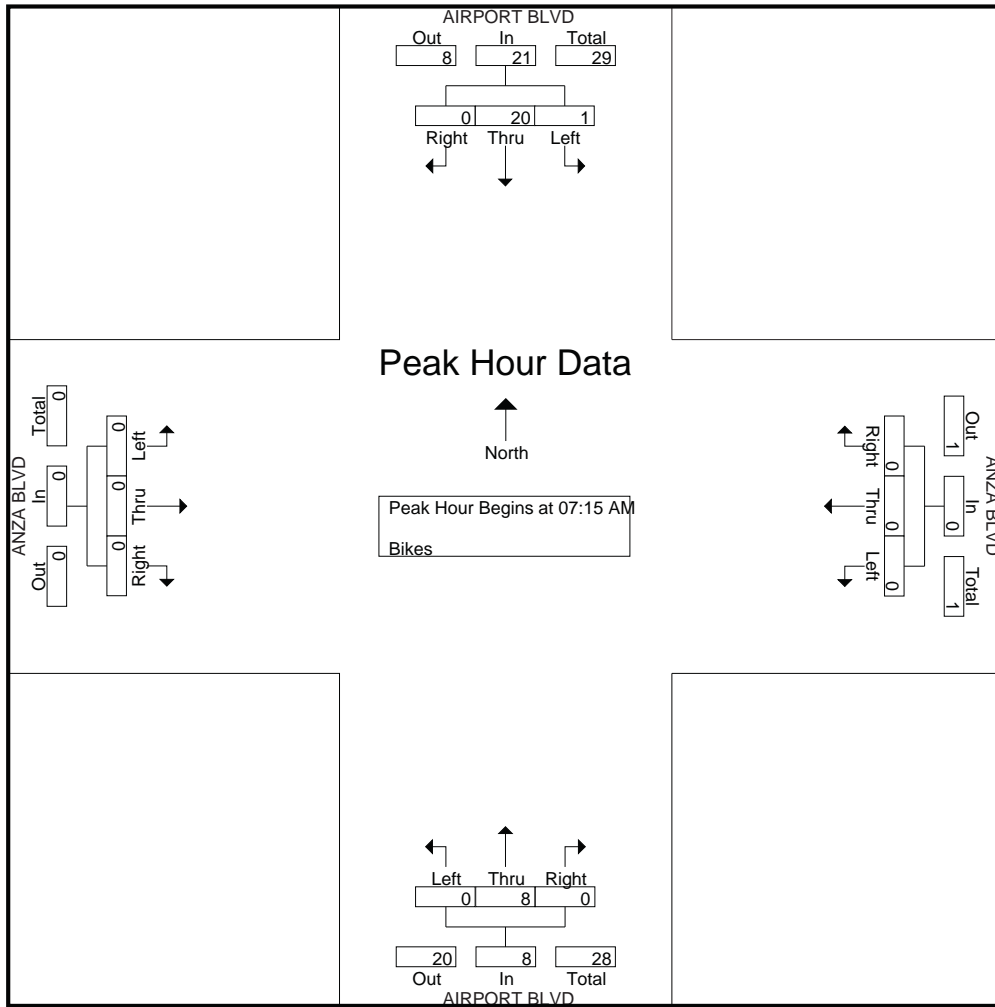
Start Time	AIRPORT BLVD Southbound					ANZA BLVD Westbound					AIRPORT BLVD Northbound					ANZA BLVD Eastbound					Int. Total				
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total					
07:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:15 AM	0	7	0	0	7	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	9
07:30 AM	0	8	0	0	8	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	9
07:45 AM	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	6
<b>Total</b>	<b>0</b>	<b>19</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>25</b>
08:00 AM	0	2	1	0	3	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	5
08:15 AM	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	2
08:30 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	2
08:45 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
<b>Total</b>	<b>1</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10</b>
<b>Grand Total</b>	<b>1</b>	<b>22</b>	<b>2</b>	<b>0</b>	<b>25</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>35</b>
Apprch %	4	88	8	0		0	0	0	0		0	100	0	0		0	0	0	0		0	0	0	0	
Total %	2.9	62.9	5.7	0	71.4	0	0	0	0		0	28.6	0	0	28.6	0	0	0	0		0	0	0	0	

Start Time	AIRPORT BLVD Southbound				App. Total	ANZA BLVD Westbound				App. Total	AIRPORT BLVD Northbound				App. Total	ANZA BLVD Eastbound				Int. Total					
	Right	Thru	Left	Peds		Right	Thru	Left	Peds		Right	Thru	Left	Peds		Right	Thru	Left	Peds						
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 07:15 AM																									
07:15 AM	0	7	0	0	7	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	<b>9</b>
07:30 AM	0	<b>8</b>	0	0	<b>8</b>	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	9
07:45 AM	0	3	0	0	3	0	0	0	0	0	0	<b>3</b>	0	0	<b>3</b>	0	0	0	0	0	0	0	0	0	6
08:00 AM	0	2	1	0	3	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	5
Total Volume	0	20	1	0	21	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	0	0	0	29
% App. Total	0	95.2	4.8			0	0	0			0	100	0			0	0	0			0	0	0		
PHF	.000	.625	.250	.656		.000	.000	.000	.000		.000	.667	.000	.667		.000	.000	.000	.000		.000	.000	.000	.000	.806

# Traffic Data Service

San Jose, CA  
 (408) 622-4787  
 tdsbay@cs.com

File Name : 6AM FINAL  
 Site Code : 00000006  
 Start Date : 5/30/2018  
 Page No : 2



# Traffic Data Service

San Jose, CA  
(408) 622-4787  
tdsbay@cs.com

File Name : 6PM FINAL  
Site Code : 00000006  
Start Date : 5/30/2018  
Page No : 1

Groups Printed- Lights - Buses - Trucks

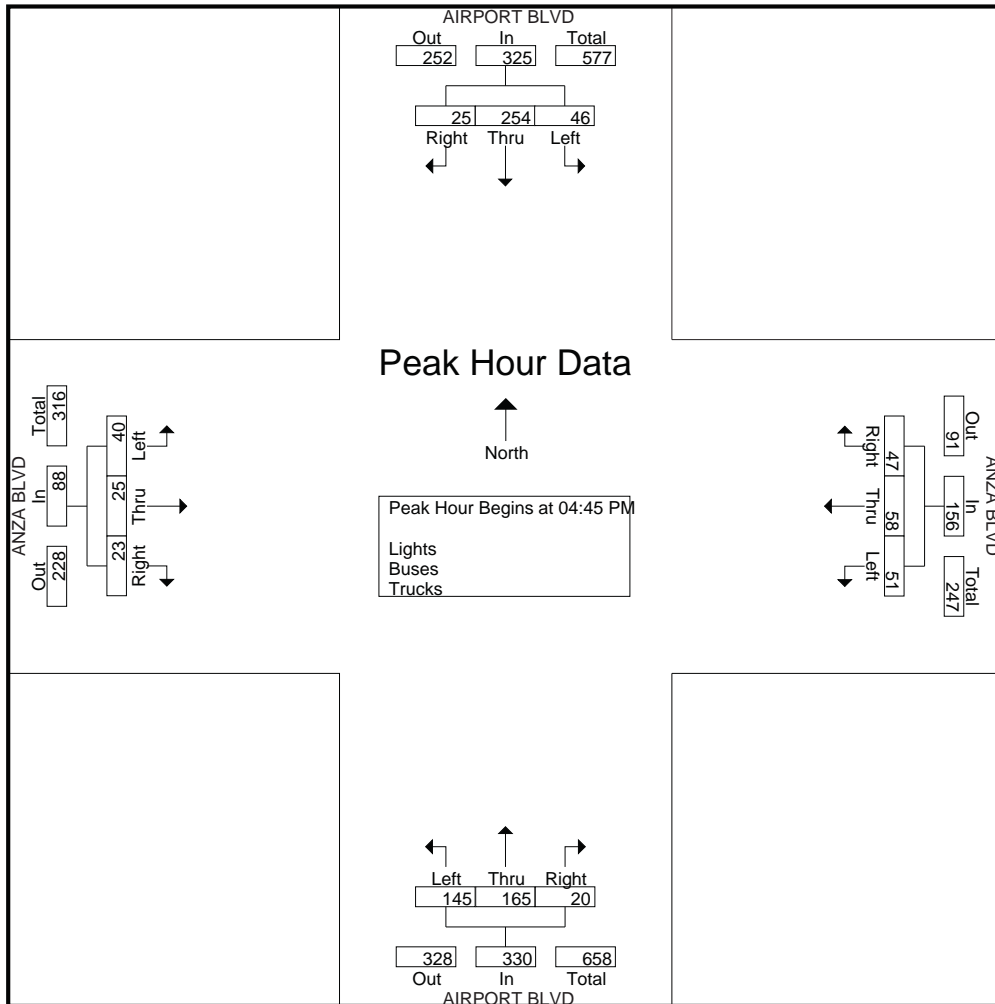
Start Time	AIRPORT BLVD Southbound					ANZA BLVD Westbound					AIRPORT BLVD Northbound					ANZA BLVD Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
04:00 PM	6	72	13	0	91	9	2	6	1	18	5	35	56	2	98	9	6	14	2	31	238
04:15 PM	5	55	9	0	69	18	12	7	0	37	4	30	36	4	74	10	5	11	1	27	207
04:30 PM	5	56	11	2	74	13	15	10	2	40	5	31	38	5	79	6	3	7	3	19	212
04:45 PM	9	53	13	1	76	14	19	10	4	47	2	34	25	5	66	8	8	16	2	34	223
Total	25	236	46	3	310	54	48	33	7	142	16	130	155	16	317	33	22	48	8	111	880
05:00 PM	6	88	14	0	108	11	17	11	0	39	9	44	50	0	103	4	4	13	0	21	271
05:15 PM	4	67	8	0	79	9	10	10	0	29	7	40	41	1	89	4	3	6	2	15	212
05:30 PM	6	46	11	0	63	13	12	20	1	46	2	47	29	13	91	7	10	5	0	22	222
05:45 PM	5	69	8	0	82	12	13	12	0	37	5	35	26	0	66	4	6	11	0	21	206
Total	21	270	41	0	332	45	52	53	1	151	23	166	146	14	349	19	23	35	2	79	911
Grand Total	46	506	87	3	642	99	100	86	8	293	39	296	301	30	666	52	45	83	10	190	1791
Apprch %	7.2	78.8	13.6	0.5		33.8	34.1	29.4	2.7		5.9	44.4	45.2	4.5		27.4	23.7	43.7	5.3		
Total %	2.6	28.3	4.9	0.2	35.8	5.5	5.6	4.8	0.4	16.4	2.2	16.5	16.8	1.7	37.2	2.9	2.5	4.6	0.6	10.6	
Lights	43	464	81	3	591	95	88	84	8	275	27	278	281	30	616	50	45	80	10	185	1667
% Lights	93.5	91.7	93.1	100	92.1	96	88	97.7	100	93.9	69.2	93.9	93.4	100	92.5	96.2	100	96.4	100	97.4	93.1
Buses	3	27	4	0	34	3	5	2	0	10	4	7	15	0	26	1	0	2	0	3	73
% Buses	6.5	5.3	4.6	0	5.3	3	5	2.3	0	3.4	10.3	2.4	5	0	3.9	1.9	0	2.4	0	1.6	4.1
Trucks	0	15	2	0	17	1	7	0	0	8	8	11	5	0	24	1	0	1	0	2	51
% Trucks	0	3	2.3	0	2.6	1	7	0	0	2.7	20.5	3.7	1.7	0	3.6	1.9	0	1.2	0	1.1	2.8

Start Time	AIRPORT BLVD Southbound				ANZA BLVD Westbound				AIRPORT BLVD Northbound				ANZA BLVD Eastbound				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	9	53	13	75	14	19	10	43	2	34	25	61	8	8	16	32	211
05:00 PM	6	88	14	108	11	17	11	39	9	44	50	103	4	4	13	21	271
05:15 PM	4	67	8	79	9	10	10	29	7	40	41	88	4	3	6	13	209
05:30 PM	6	46	11	63	13	12	20	45	2	47	29	78	7	10	5	22	208
Total Volume	25	254	46	325	47	58	51	156	20	165	145	330	23	25	40	88	899
% App. Total	7.7	78.2	14.2		30.1	37.2	32.7		6.1	50	43.9		26.1	28.4	45.5		
PHF	.694	.722	.821	.752	.839	.763	.638	.867	.556	.878	.725	.801	.719	.625	.625	.688	.829

# Traffic Data Service

San Jose, CA  
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File Name : 6PM FINAL  
 Site Code : 00000006  
 Start Date : 5/30/2018  
 Page No : 2



# Traffic Data Service

San Jose, CA  
(408) 622-4787  
tdsbay@cs.com

File Name : 6PM FINAL  
Site Code : 00000006  
Start Date : 5/30/2018  
Page No : 1

### Groups Printed- Bikes

Start Time	AIRPORT BLVD Southbound					ANZA BLVD Westbound					AIRPORT BLVD Northbound					ANZA BLVD Eastbound					Int. Total	
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total		
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1
05:30 PM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
05:45 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1
<b>Total</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>
Grand Total	0	4	0	0	4	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	6
Apprch %	0	100	0	0		0	0	100	0		100	0	0	0		0	0	0	0			
Total %	0	66.7	0	0	66.7	0	0	16.7	0	16.7	16.7	0	0	0	16.7	0	0	0	0	0		

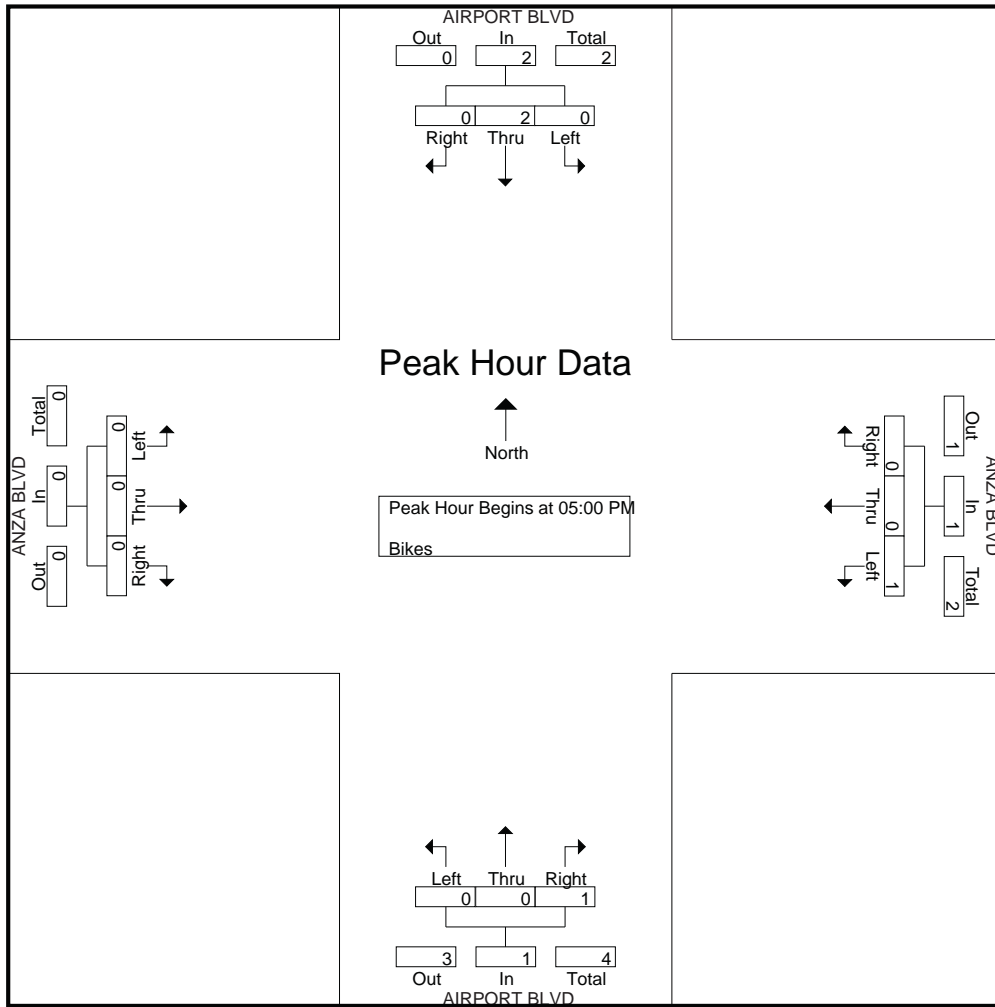
Start Time	AIRPORT BLVD Southbound					ANZA BLVD Westbound					AIRPORT BLVD Northbound					ANZA BLVD Eastbound					Int. Total	
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total		
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1
05:30 PM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
05:45 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1
<b>Total Volume</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>
% App. Total	0	100	0	0		0	0	100	0		100	0	0	0		0	0	0	0			
PHF	.000	.250	.000	.000	.250	.000	.000	.250	.000	.250	.250	.000	.000	.000	.250	.000	.000	.000	.000	.000	.000	.500

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
Peak Hour for Entire Intersection Begins at 05:00 PM

# Traffic Data Service

San Jose, CA  
 (408) 622-4787  
 tdsbay@cs.com

File Name : 6PM FINAL  
 Site Code : 00000006  
 Start Date : 5/30/2018  
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# Traffic Data Service

San Jose, CA  
**(408) 622-4787**  
*tdsbay@cs.com*

File Name : 7AM FINAL  
 Site Code : 00000007  
 Start Date : 5/30/2018  
 Page No : 1

Groups Printed- Lights - Buses - Trucks

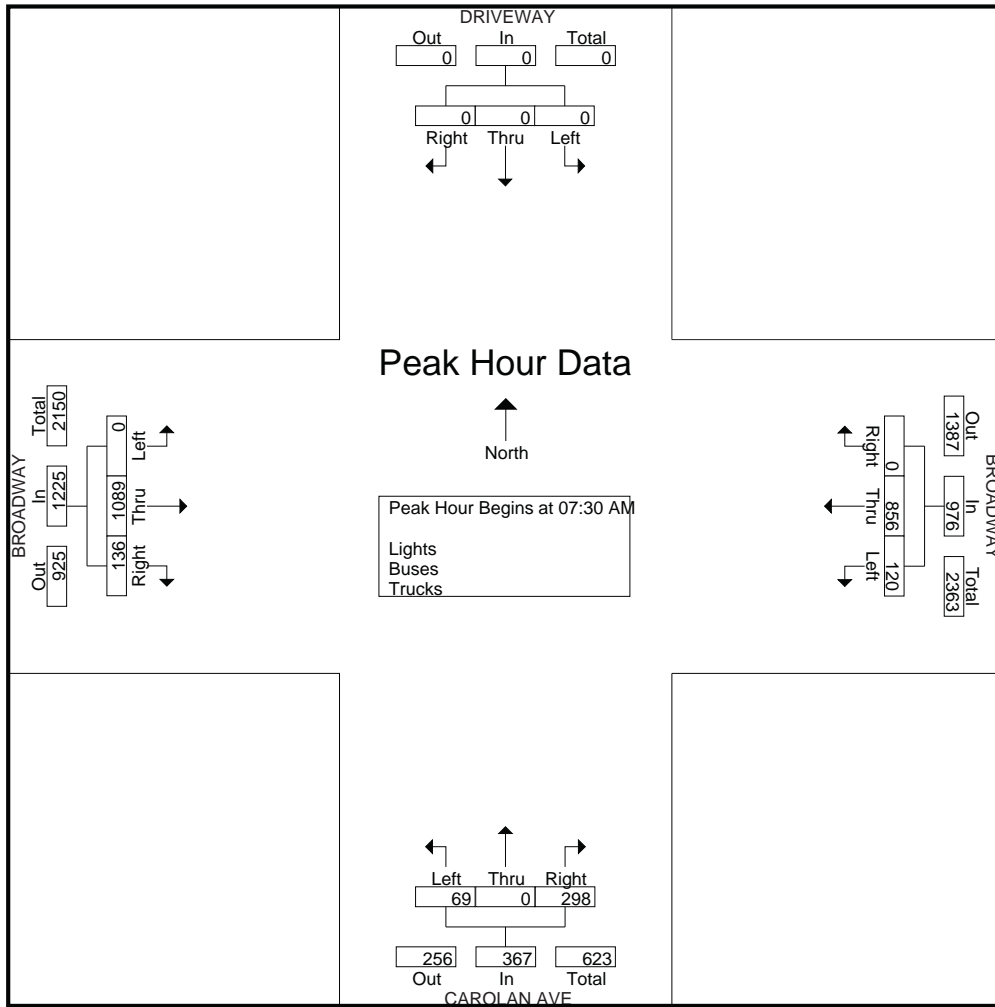
	DRIVEWAY Southbound					BROADWAY Westbound					CAROLAN AVE Northbound					BROADWAY Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	3	3	0	151	18	0	169	60	0	4	4	68	4	217	0	0	221	461
07:15 AM	0	0	0	4	4	0	148	28	0	176	62	0	7	9	78	10	238	0	0	248	506
07:30 AM	0	0	0	2	2	0	205	36	0	241	90	0	11	4	105	44	237	0	0	281	629
07:45 AM	0	0	0	2	2	0	240	21	0	261	63	0	22	7	92	55	277	0	0	332	687
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>11</b>	<b>0</b>	<b>744</b>	<b>103</b>	<b>0</b>	<b>847</b>	<b>275</b>	<b>0</b>	<b>44</b>	<b>24</b>	<b>343</b>	<b>113</b>	<b>969</b>	<b>0</b>	<b>0</b>	<b>1082</b>	<b>2283</b>
08:00 AM	0	0	0	2	2	0	216	29	2	247	88	0	20	6	114	18	294	0	0	312	675
08:15 AM	0	0	0	0	0	0	195	34	0	229	57	0	16	7	80	19	281	0	0	300	609
08:30 AM	0	0	0	1	1	0	169	22	1	192	71	0	14	4	89	25	286	0	0	311	593
08:45 AM	0	0	0	6	6	0	199	46	2	247	75	0	14	7	96	43	260	0	0	303	652
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>9</b>	<b>0</b>	<b>779</b>	<b>131</b>	<b>5</b>	<b>915</b>	<b>291</b>	<b>0</b>	<b>64</b>	<b>24</b>	<b>379</b>	<b>105</b>	<b>1121</b>	<b>0</b>	<b>0</b>	<b>1226</b>	<b>2529</b>
Grand Total	0	0	0	20	20	0	1523	234	5	1762	566	0	108	48	722	218	2090	0	0	2308	4812
Apprch %	0	0	0	100		0	86.4	13.3	0.3		78.4	0	15	6.6		9.4	90.6	0	0		
Total %	0	0	0	0.4	0.4	0	31.7	4.9	0.1	36.6	11.8	0	2.2	1	15	4.5	43.4	0	0	48	
Lights	0	0	0	20	20	0	1461	225	5	1691	558	0	103	48	709	217	2059	0	0	2276	4696
% Lights	0	0	0	100	100	0	95.9	96.2	100	96	98.6	0	95.4	100	98.2	99.5	98.5	0	0	98.6	97.6
Buses	0	0	0	0	0	0	7	2	0	9	1	0	2	0	3	0	7	0	0	7	19
% Buses	0	0	0	0	0	0	0.5	0.9	0	0.5	0.2	0	1.9	0	0.4	0	0.3	0	0	0.3	0.4
Trucks	0	0	0	0	0	0	55	7	0	62	7	0	3	0	10	1	24	0	0	25	97
% Trucks	0	0	0	0	0	0	3.6	3	0	3.5	1.2	0	2.8	0	1.4	0.5	1.1	0	0	1.1	2

	DRIVEWAY Southbound				BROADWAY Westbound				CAROLAN AVE Northbound				BROADWAY Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	0	205	<b>36</b>	241	<b>90</b>	0	11	101	44	237	0	281	623
07:45 AM	0	0	0	0	0	<b>240</b>	21	<b>261</b>	63	0	<b>22</b>	85	<b>55</b>	277	0	<b>332</b>	<b>678</b>
08:00 AM	0	0	0	0	0	216	29	245	88	0	20	<b>108</b>	18	<b>294</b>	0	312	665
08:15 AM	0	0	0	0	0	195	34	229	57	0	16	73	19	281	0	300	602
Total Volume	0	0	0	0	0	856	120	976	298	0	69	367	136	1089	0	1225	2568
% App. Total	0	0	0	0	0	87.7	12.3		81.2	0	18.8		11.1	88.9	0		
PHF	.000	.000	.000	.000	.000	.892	.833	.935	.828	.000	.784	.850	.618	.926	.000	.922	.947

# Traffic Data Service

San Jose, CA  
 (408) 622-4787  
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File Name : 7AM FINAL  
 Site Code : 00000007  
 Start Date : 5/30/2018  
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# Traffic Data Service

San Jose, CA  
 (408) 622-4787  
 tdsbay@cs.com

File Name : 7AM FINAL  
 Site Code : 00000007  
 Start Date : 5/30/2018  
 Page No : 1

### Groups Printed- Bikes

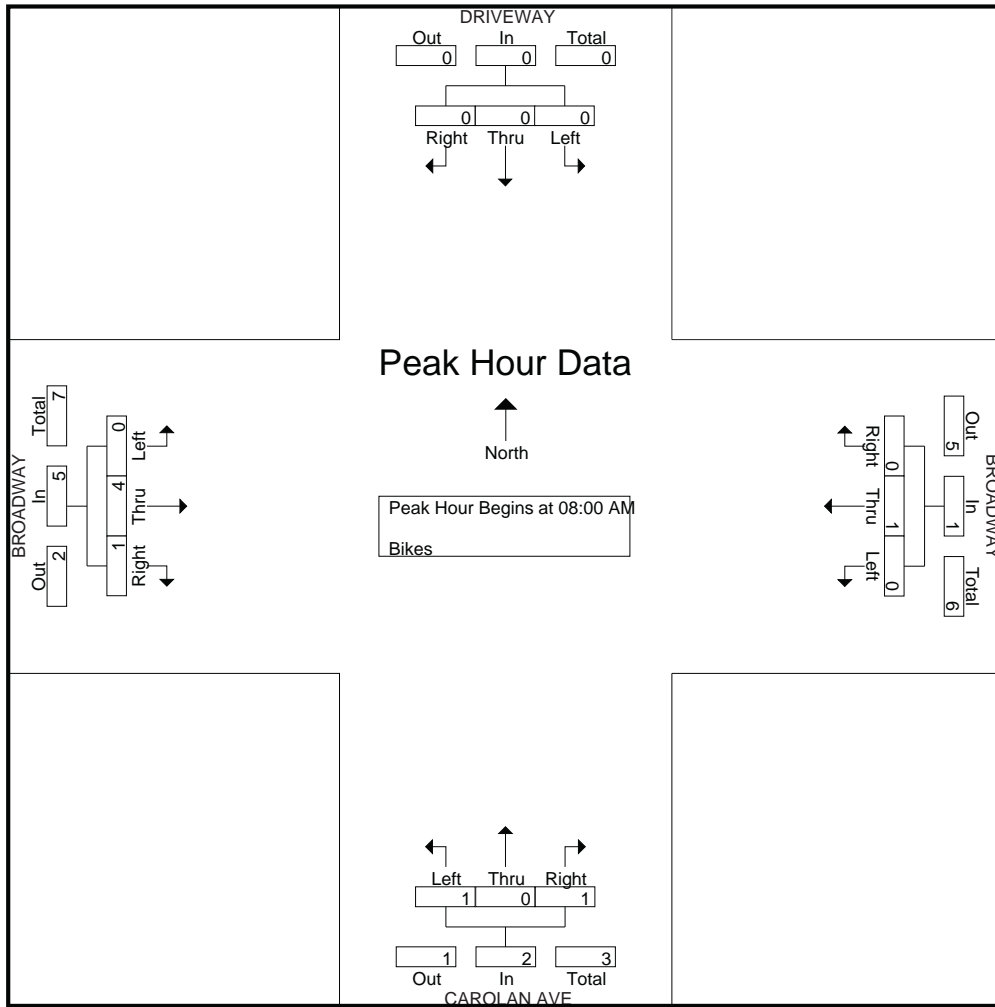
Start Time	DRIVEWAY Southbound					BROADWAY Westbound					CAROLAN AVE Northbound					BROADWAY Eastbound					Int. Total	
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total		
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	2
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	2
Total	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	1	2	0	0	0	3	5
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
08:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1
08:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	1	1	0	0	0	2	4
Total	0	0	0	0	0	0	1	0	0	1	1	0	1	0	2	1	4	0	0	0	5	8
Grand Total	0	0	0	0	0	0	1	0	0	1	1	0	3	0	4	2	6	0	0	0	8	13
Apprch %	0	0	0	0		0	100	0	0		25	0	75	0		25	75	0	0			
Total %	0	0	0	0		0	7.7	0	0	7.7	7.7	0	23.1	0	30.8	15.4	46.2	0	0	0	61.5	

Start Time	DRIVEWAY Southbound					BROADWAY Westbound					CAROLAN AVE Northbound					BROADWAY Eastbound					Int. Total	
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total		
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																						
Peak Hour for Entire Intersection Begins at 08:00 AM																						
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
08:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1
08:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	1	1	0	0	0	2	4
Total Volume	0	0	0	0	0	0	1	0	0	1	1	0	1	0	2	1	4	0	0	0	5	8
% App. Total	0	0	0	0		0	100	0	0		50	0	50	0		20	80	0	0			
PHF	.000	.000	.000	.000		.000	.250	.000	.250		.250	.000	.250	.500		.250	.500	.000	.625		.500	

# Traffic Data Service

San Jose, CA  
 (408) 622-4787  
 tdsbay@cs.com

File Name : 7AM FINAL  
 Site Code : 00000007  
 Start Date : 5/30/2018  
 Page No : 2



# Traffic Data Service

San Jose, CA  
(408) 622-4787  
tdsbay@cs.com

File Name : 7PM FINAL  
Site Code : 00000007  
Start Date : 5/30/2018  
Page No : 1

Groups Printed- Lights - Buses - Trucks

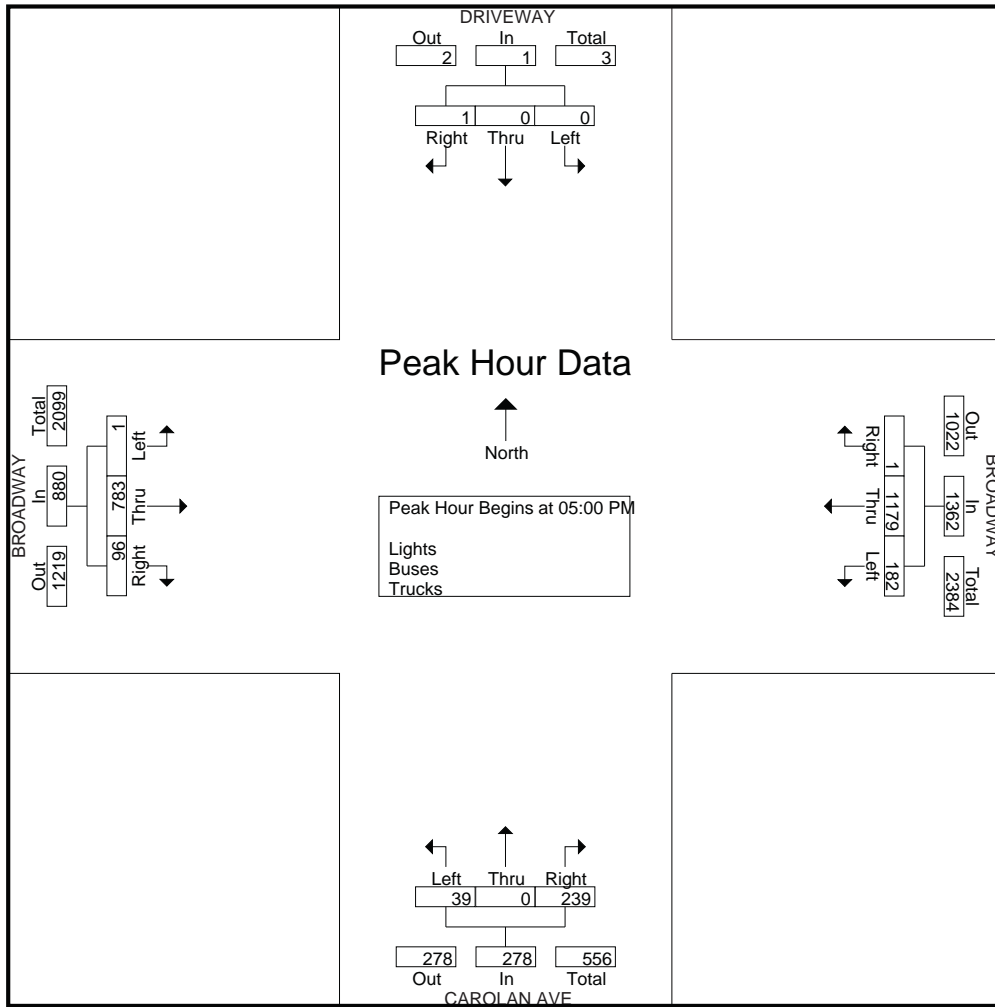
Start Time	DRIVEWAY Southbound					BROADWAY Westbound					CAROLAN AVE Northbound					BROADWAY Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
04:00 PM	0	0	0	8	8	0	226	40	3	269	48	0	11	4	63	17	218	1	0	236	576
04:15 PM	0	0	0	1	1	2	234	35	0	271	47	0	14	3	64	21	212	1	0	234	570
04:30 PM	0	0	0	1	1	1	253	33	1	288	47	0	8	3	58	18	230	1	0	249	596
04:45 PM	0	0	0	3	3	0	278	40	0	318	54	0	12	3	69	21	216	0	0	237	627
Total	0	0	0	13	13	3	991	148	4	1146	196	0	45	13	254	77	876	3	0	956	2369
05:00 PM	1	0	0	8	9	0	292	48	0	340	64	0	10	7	81	25	208	0	0	233	663
05:15 PM	0	0	0	6	6	1	256	43	2	302	64	0	9	5	78	21	208	0	0	229	615
05:30 PM	0	0	0	4	4	0	304	42	0	346	61	0	12	4	77	31	183	1	0	215	642
05:45 PM	0	0	0	4	4	0	327	49	1	377	50	0	8	3	61	19	184	0	0	203	645
Total	1	0	0	22	23	1	1179	182	3	1365	239	0	39	19	297	96	783	1	0	880	2565
Grand Total	1	0	0	35	36	4	2170	330	7	2511	435	0	84	32	551	173	1659	4	0	1836	4934
Apprch %	2.8	0	0	97.2		0.2	86.4	13.1	0.3		78.9	0	15.2	5.8		9.4	90.4	0.2	0		
Total %	0	0	0	0.7	0.7	0.1	44	6.7	0.1	50.9	8.8	0	1.7	0.6	11.2	3.5	33.6	0.1	0	37.2	
Lights	1	0	0	35	36	4	2147	327	7	2485	428	0	81	32	541	171	1626	4	0	1801	4863
% Lights	100	0	0	100	100	100	98.9	99.1	100	99	98.4	0	96.4	100	98.2	98.8	98	100	0	98.1	98.6
Buses	0	0	0	0	0	0	9	0	0	9	0	0	1	0	1	0	6	0	0	6	16
% Buses	0	0	0	0	0	0	0.4	0	0	0.4	0	0	1.2	0	0.2	0	0.4	0	0	0.3	0.3
Trucks	0	0	0	0	0	0	14	3	0	17	7	0	2	0	9	2	27	0	0	29	55
% Trucks	0	0	0	0	0	0	0.6	0.9	0	0.7	1.6	0	2.4	0	1.6	1.2	1.6	0	0	1.6	1.1

Start Time	DRIVEWAY Southbound				BROADWAY Westbound				CAROLAN AVE Northbound				BROADWAY Eastbound				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	1	0	0	1	0	292	48	340	64	0	10	74	25	208	0	233	648
05:15 PM	0	0	0	0	1	256	43	300	64	0	9	73	21	208	0	229	602
05:30 PM	0	0	0	0	0	304	42	346	61	0	12	73	31	183	1	215	634
05:45 PM	0	0	0	0	0	327	49	376	50	0	8	58	19	184	0	203	637
Total Volume	1	0	0	1	1	1179	182	1362	239	0	39	278	96	783	1	880	2521
% App. Total	100	0	0		0.1	86.6	13.4		86	0	14		10.9	89	0.1		
PHF	.250	.000	.000	.250	.250	.901	.929	.906	.934	.000	.813	.939	.774	.941	.250	.944	.973

# Traffic Data Service

San Jose, CA  
 (408) 622-4787  
 tdsbay@cs.com

File Name : 7PM FINAL  
 Site Code : 00000007  
 Start Date : 5/30/2018  
 Page No : 2



# Traffic Data Service

San Jose, CA  
 (408) 622-4787  
 tdsbay@cs.com

File Name : 7PM FINAL  
 Site Code : 00000007  
 Start Date : 5/30/2018  
 Page No : 1

Groups Printed- Bikes

Start Time	DRIVEWAY Southbound					BROADWAY Westbound					CAROLAN AVE Northbound					BROADWAY Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
04:00 PM	0	0	0	0	0	0	0	1	0	1	1	0	1	0	2	0	0	0	0	0	3
04:15 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
<b>Total</b>	1	0	0	0	1	0	0	2	0	2	1	0	2	0	3	0	0	0	0	0	6
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Grand Total</b>	1	0	0	0	1	0	0	2	0	2	1	0	2	0	3	0	0	0	0	0	6
Approch %	100	0	0	0		0	0	100	0		33.3	0	66.7	0		0	0	0	0		
Total %	16.7	0	0	0	16.7	0	0	33.3	0	33.3	16.7	0	33.3	0	50	0	0	0	0	0	

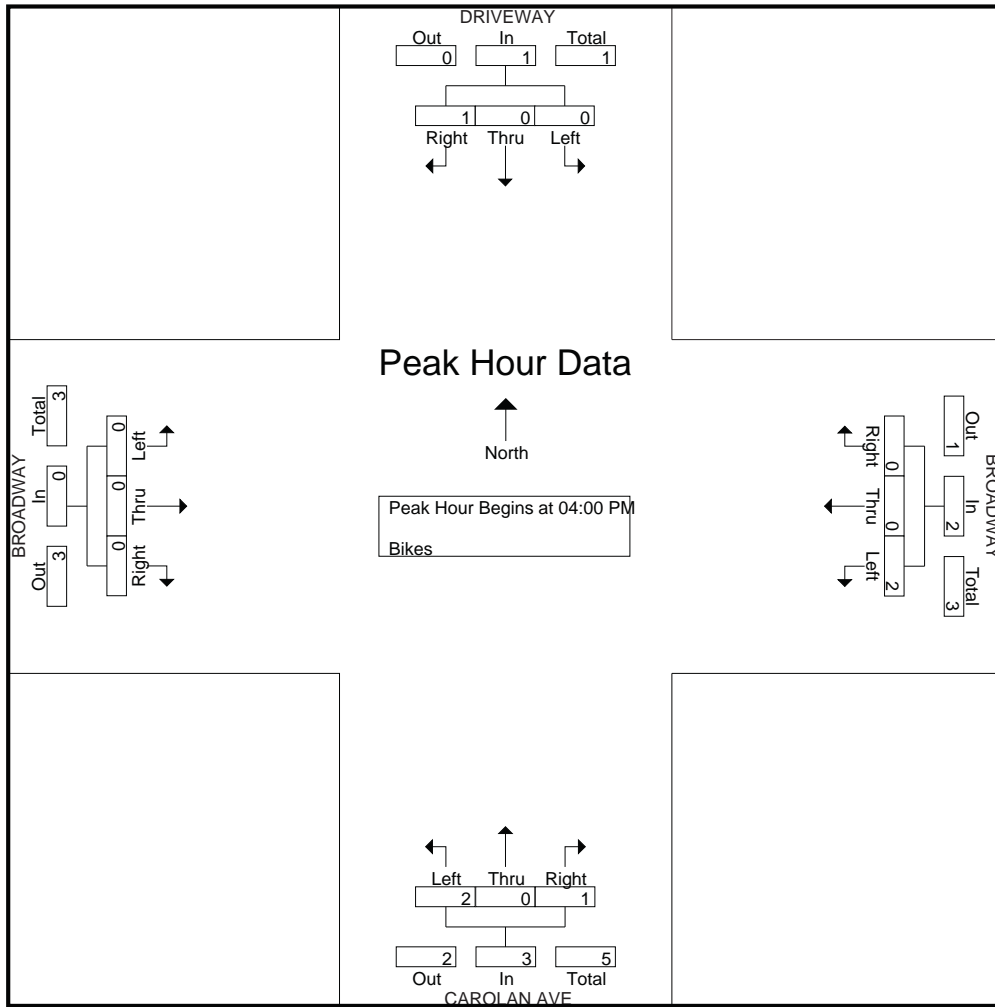
Start Time	DRIVEWAY Southbound					BROADWAY Westbound					CAROLAN AVE Northbound					BROADWAY Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
04:00 PM	0	0	0	0	0	0	0	1	0	1	1	0	1	0	2	0	0	0	0	0	3
04:15 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
<b>Total Volume</b>	1	0	0	0	1	0	0	2	0	2	1	0	2	0	3	0	0	0	0	0	6
% App. Total	100	0	0	0		0	0	100	0		33.3	0	66.7	0		0	0	0	0		
PHF	.250	.000	.000	.000	.250	.000	.000	.500	.000	.500	.250	.000	.500	.000	.375	.000	.000	.000	.000	.000	.500

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Entire Intersection Begins at 04:00 PM

# Traffic Data Service

San Jose, CA  
 (408) 622-4787  
 tdsbay@cs.com

File Name : 7PM FINAL  
 Site Code : 00000007  
 Start Date : 5/30/2018  
 Page No : 2

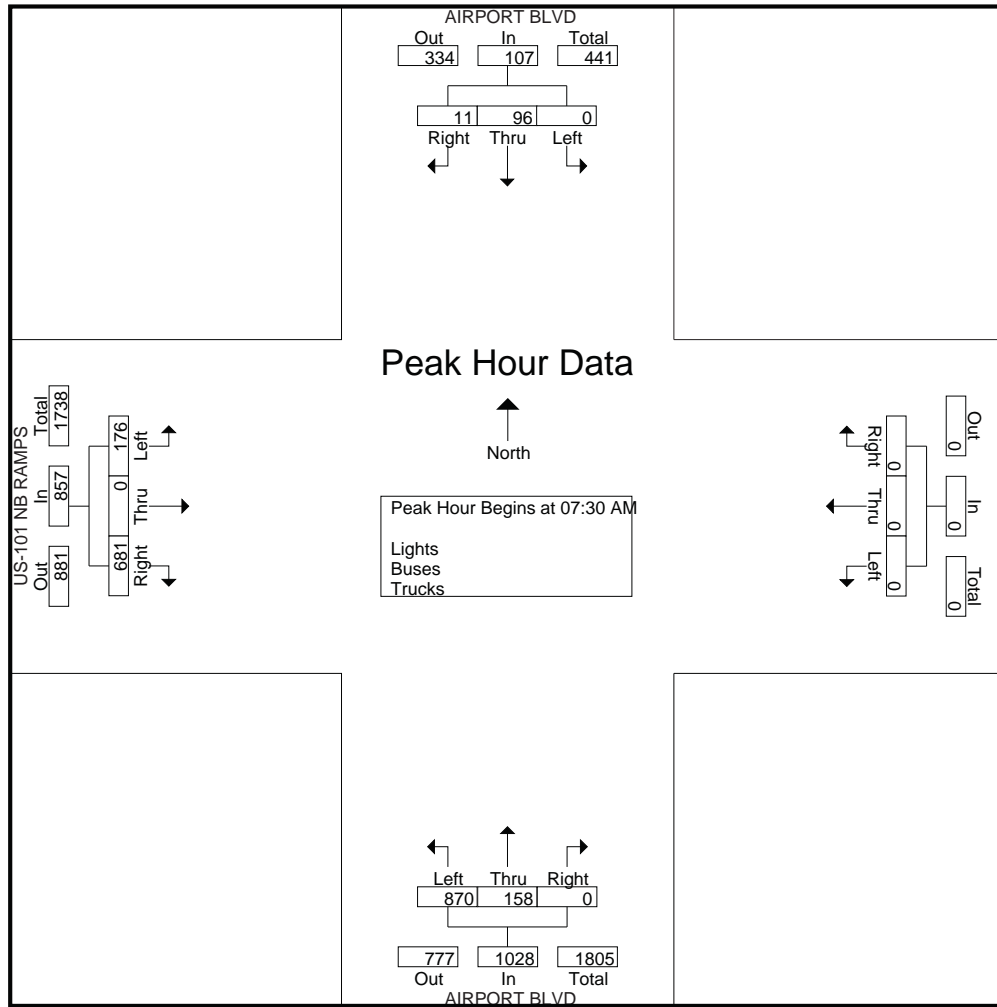




# Traffic Data Service

San Jose, CA  
 (408) 622-4787  
 tdsbay@cs.com

File Name : 8AM FINAL  
 Site Code : 00000008  
 Start Date : 5/30/2018  
 Page No : 2

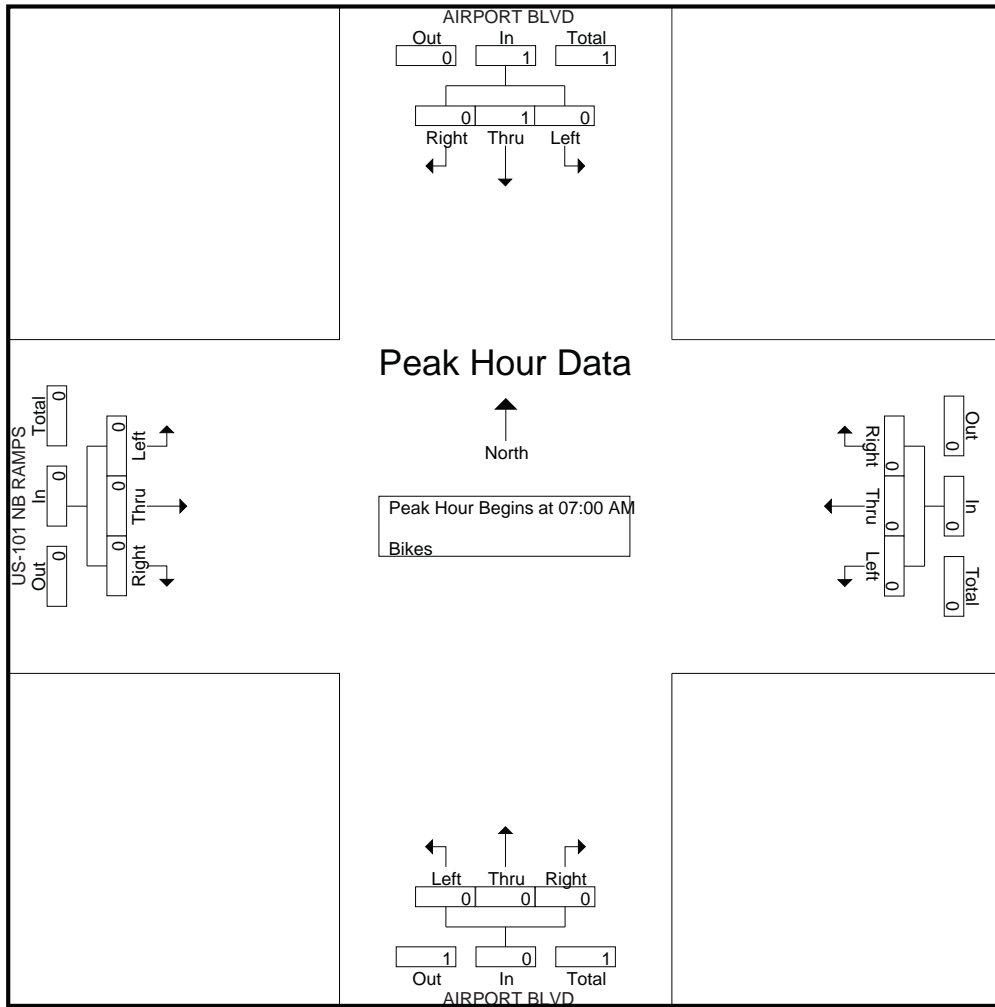




# Traffic Data Service

San Jose, CA  
 (408) 622-4787  
 tdsbay@cs.com

File Name : 8AM FINAL  
 Site Code : 00000008  
 Start Date : 5/30/2018  
 Page No : 2

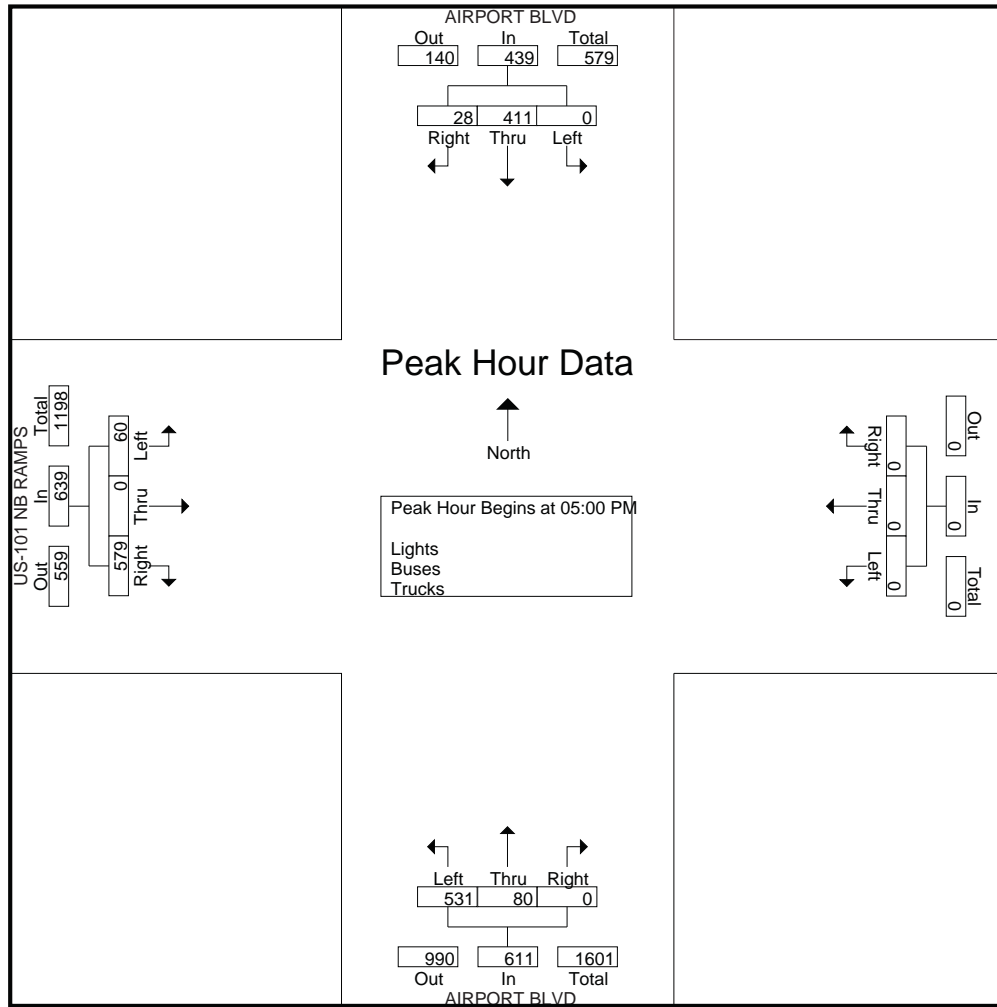




# Traffic Data Service

San Jose, CA  
 (408) 622-4787  
 tdsbay@cs.com

File Name : 8PM FINAL  
 Site Code : 00000008  
 Start Date : 5/30/2018  
 Page No : 2



# Traffic Data Service

San Jose, CA  
 (408) 622-4787  
 tdsbay@cs.com

File Name : 8PM FINAL  
 Site Code : 00000008  
 Start Date : 5/30/2018  
 Page No : 1

Groups Printed- Bikes

Start Time	AIRPORT BLVD Southbound					Westbound					AIRPORT BLVD Northbound					US-101 NB RAMPS Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
Apprch %	0	100	0	0		0	0	0	0		0	100	0	0		0	0	0	0		
Total %	0	50	0	0	50	0	0	0	0	0	0	50	0	0	50	0	0	0	0	0	

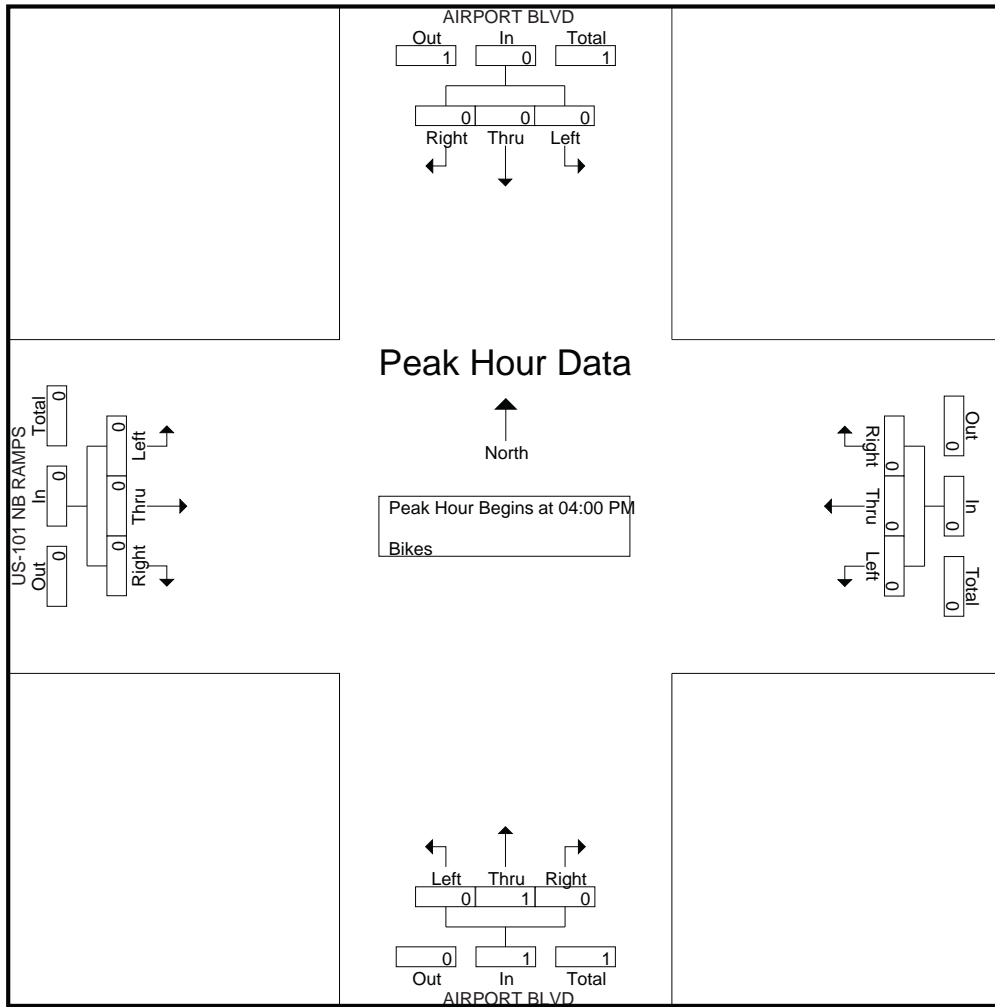
Start Time	AIRPORT BLVD Southbound					Westbound					AIRPORT BLVD Northbound					US-101 NB RAMPS Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total Volume</b>	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
<b>% App. Total</b>	0	0	0	0		0	0	0	0		0	100	0	0		0	0	0	0		
<b>PHF</b>	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.250

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Entire Intersection Begins at 04:00 PM

# Traffic Data Service

San Jose, CA  
(408) 622-4787  
tdsbay@cs.com

File Name : 8PM FINAL  
Site Code : 00000008  
Start Date : 5/30/2018  
Page No : 2

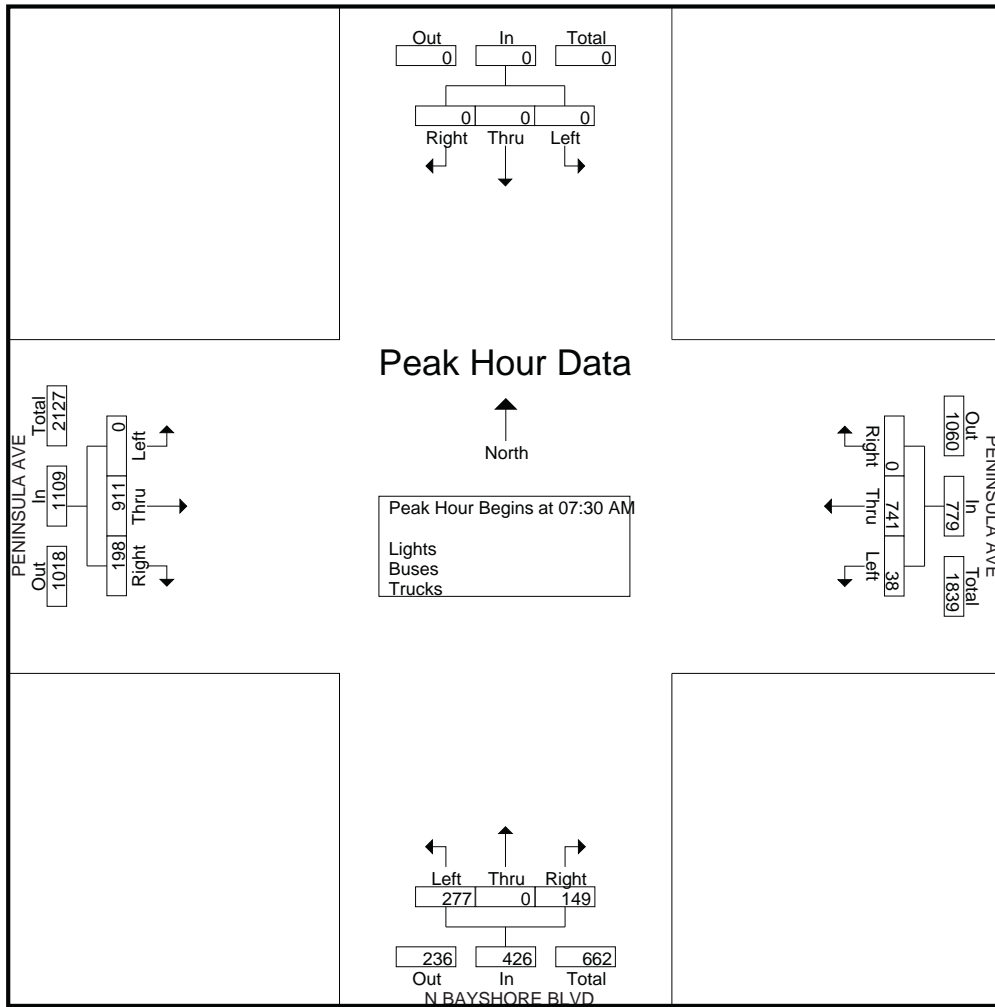




# Traffic Data Service

San Jose, CA  
 (408) 622-4787  
 tdsbay@cs.com

File Name : 10AM FINAL  
 Site Code : 00000010  
 Start Date : 5/30/2018  
 Page No : 2



# Traffic Data Service

San Jose, CA  
 (408) 622-4787  
 tdsbay@cs.com

File Name : 10AM FINAL  
 Site Code : 00000010  
 Start Date : 5/30/2018  
 Page No : 1

### Groups Printed- Bikes

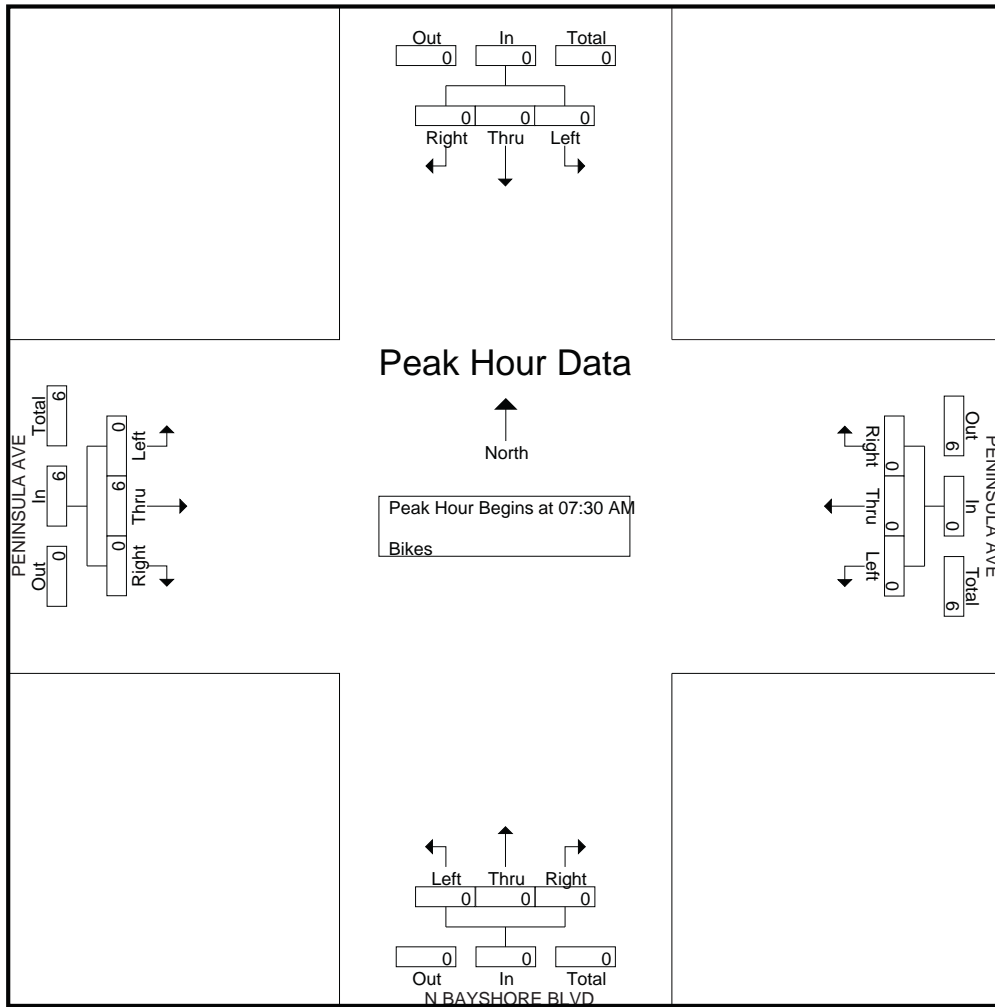
Start Time	Southbound					PENINSULA AVE Westbound					N BAYSHORE BLVD Northbound					PENINSULA AVE Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>4</b>
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>5</b>
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	9	9
Apprch %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	
Total %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	100	

Start Time	Southbound					PENINSULA AVE Westbound					N BAYSHORE BLVD Northbound					PENINSULA AVE Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	6	6
% App. Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.750	.000	.750	.750	

# Traffic Data Service

San Jose, CA  
(408) 622-4787  
tdsbay@cs.com

File Name : 10AM FINAL  
Site Code : 00000010  
Start Date : 5/30/2018  
Page No : 2

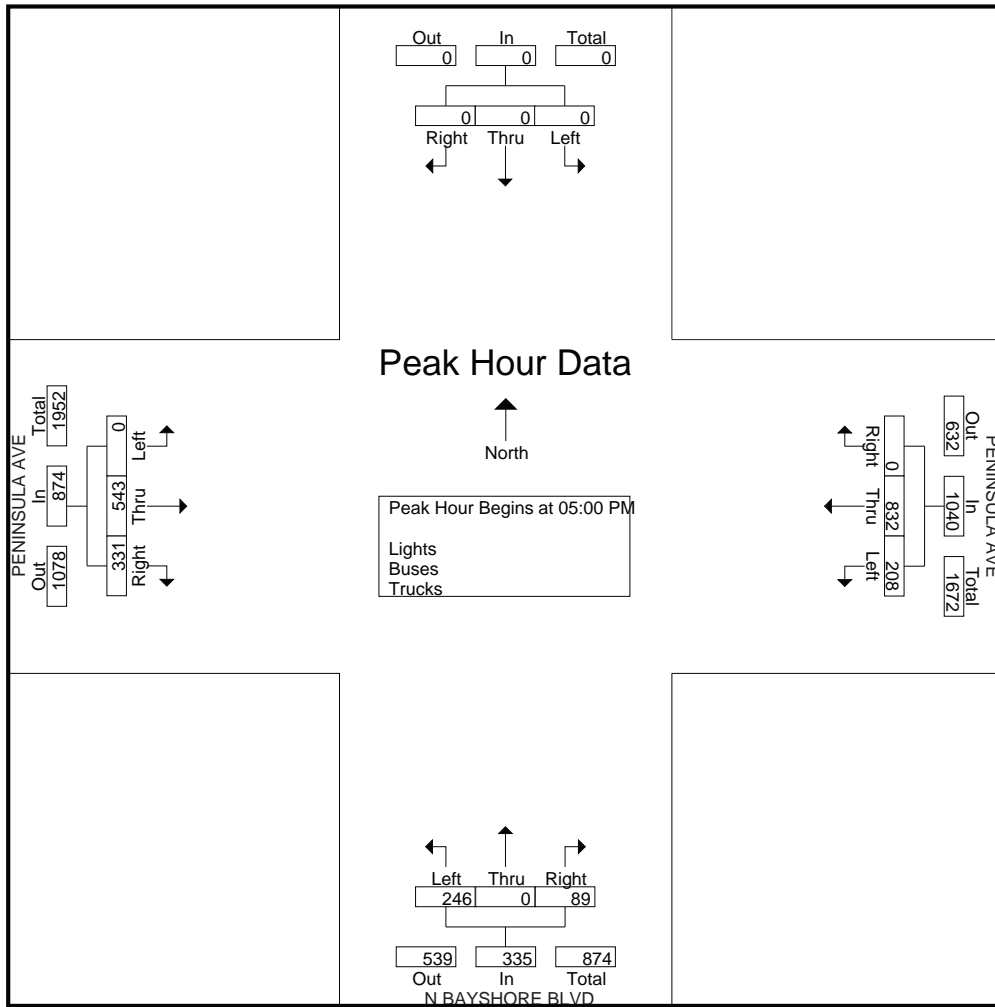




# Traffic Data Service

San Jose, CA  
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 tdsbay@cs.com

File Name : 10PM FINAL  
 Site Code : 00000010  
 Start Date : 5/30/2018  
 Page No : 2



# Traffic Data Service

San Jose, CA  
 (408) 622-4787  
 tdsbay@cs.com

File Name : 10PM FINAL  
 Site Code : 00000010  
 Start Date : 5/30/2018  
 Page No : 1

Groups Printed- Bikes

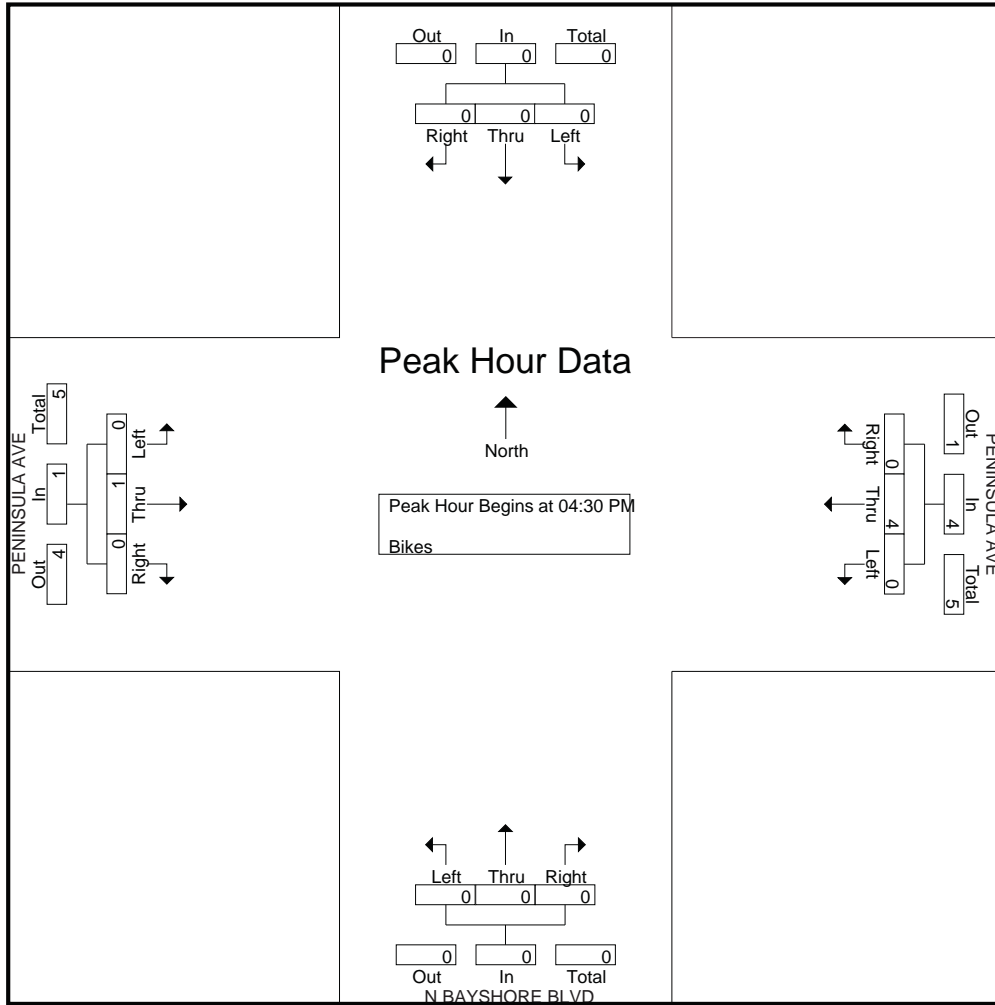
Start Time	Southbound					PENINSULA AVE Westbound					N BAYSHORE BLVD Northbound					PENINSULA AVE Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
04:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	3
05:30 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	5
Grand Total	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	1	0	0	1	8
Apprch %	0	0	0	0	0	0	100	0	0	100	0	0	0	0	0	0	100	0	0	100	0
Total %	0	0	0	0	0	0	87.5	0	0	87.5	0	0	0	0	0	0	12.5	0	0	12.5	0

Start Time	Southbound				PENINSULA AVE Westbound				N BAYSHORE BLVD Northbound				PENINSULA AVE Eastbound				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0	3
Total Volume	0	0	0	0	0	4	0	4	0	0	0	0	0	1	0	1	5
% App. Total	0	0	0	0	0	100	0	100	0	0	0	0	0	100	0	100	0
PHF	.000	.000	.000	.000	.000	.333	.000	.333	.000	.000	.000	.000	.000	.250	.000	.250	.417

# Traffic Data Service

San Jose, CA  
 (408) 622-4787  
 tdsbay@cs.com

File Name : 10PM FINAL  
 Site Code : 00000010  
 Start Date : 5/30/2018  
 Page No : 2

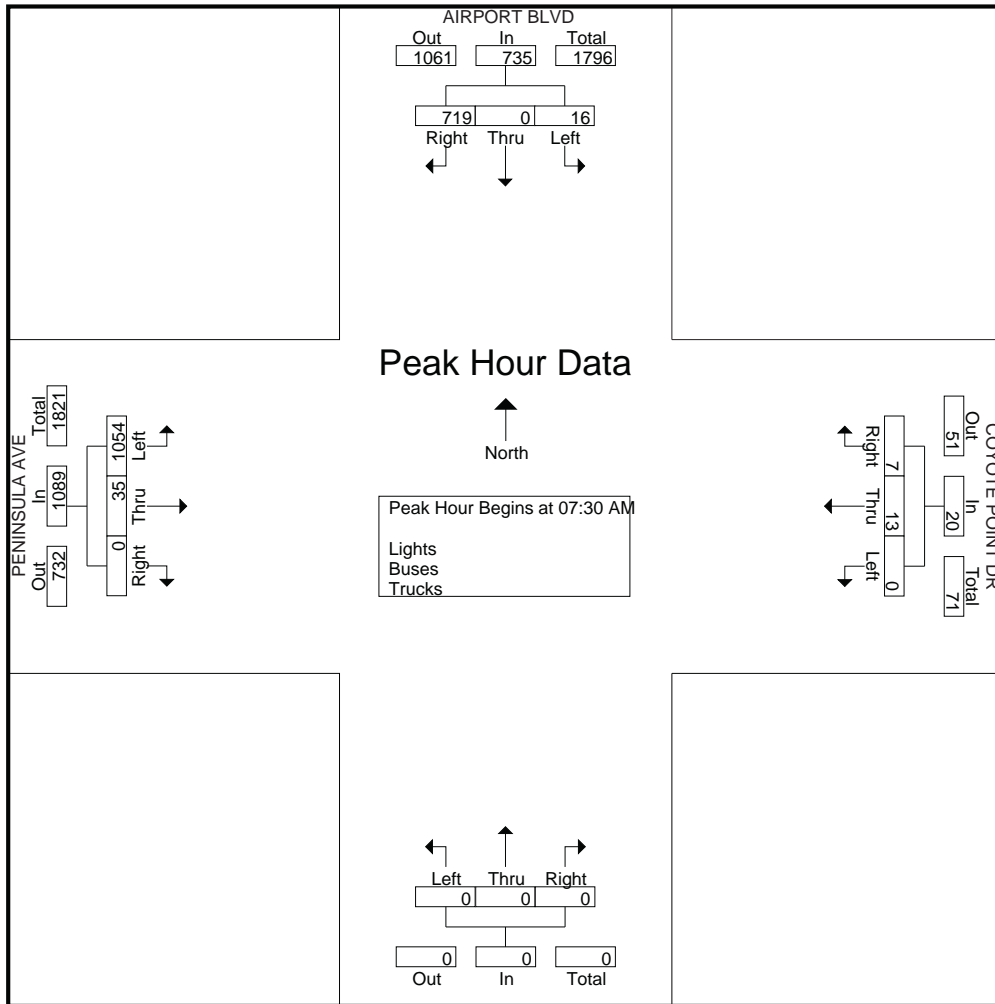




# Traffic Data Service

San Jose, CA  
 (408) 622-4787  
 tdsbay@cs.com

File Name : 11AM FINAL  
 Site Code : 00000011  
 Start Date : 5/31/2018  
 Page No : 2



# Traffic Data Service

San Jose, CA  
(408) 622-4787  
tdsbay@cs.com

File Name : 11AM FINAL  
Site Code : 00000011  
Start Date : 5/31/2018  
Page No : 1

Groups Printed- Bikes

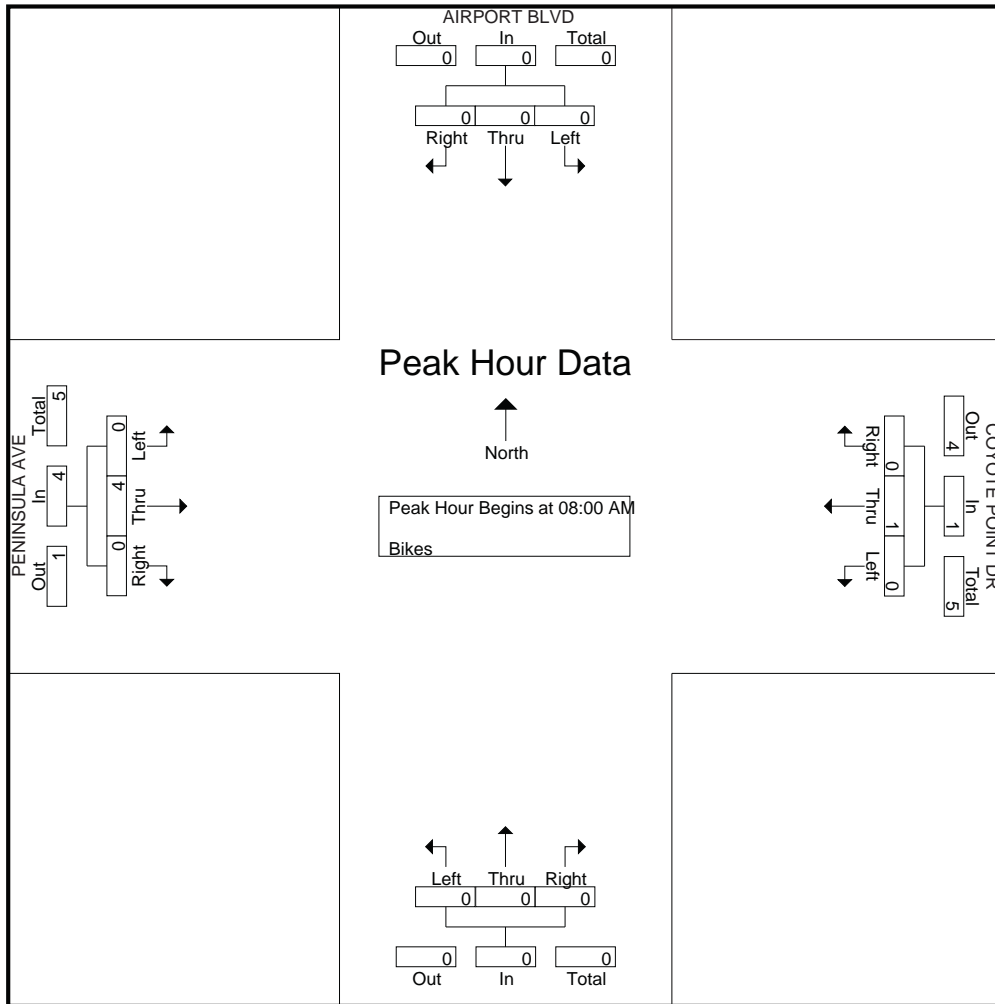
Start Time	AIRPORT BLVD Southbound					COYOTE POINT DR Westbound					Northbound					PENINSULA AVE Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
08:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	4	0	0	4	5
Grand Total	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	4	0	0	4	5
Apprch %	0	0	0	0		0	100	0	0		0	0	0	0		0	100	0	0		
Total %	0	0	0	0		0	20	0	0	20	0	0	0	0		0	80	0	0	80	

Start Time	AIRPORT BLVD Southbound				COYOTE POINT DR Westbound				Northbound				PENINSULA AVE Eastbound				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
08:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
Total Volume	0	0	0	0	0	1	0	1	0	0	0	0	0	4	0	4	5
% App. Total	0	0	0		0	100	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.000	.500	.000	.500	.625

# Traffic Data Service

San Jose, CA  
 (408) 622-4787  
 tdsbay@cs.com

File Name : 11AM FINAL  
 Site Code : 00000011  
 Start Date : 5/31/2018  
 Page No : 2



# Traffic Data Service

San Jose, CA  
(408) 622-4787  
tdsbay@cs.com

File Name : 11PM FINAL  
Site Code : 00000011  
Start Date : 5/31/2018  
Page No : 1

Groups Printed- Lights - Buses - Trucks

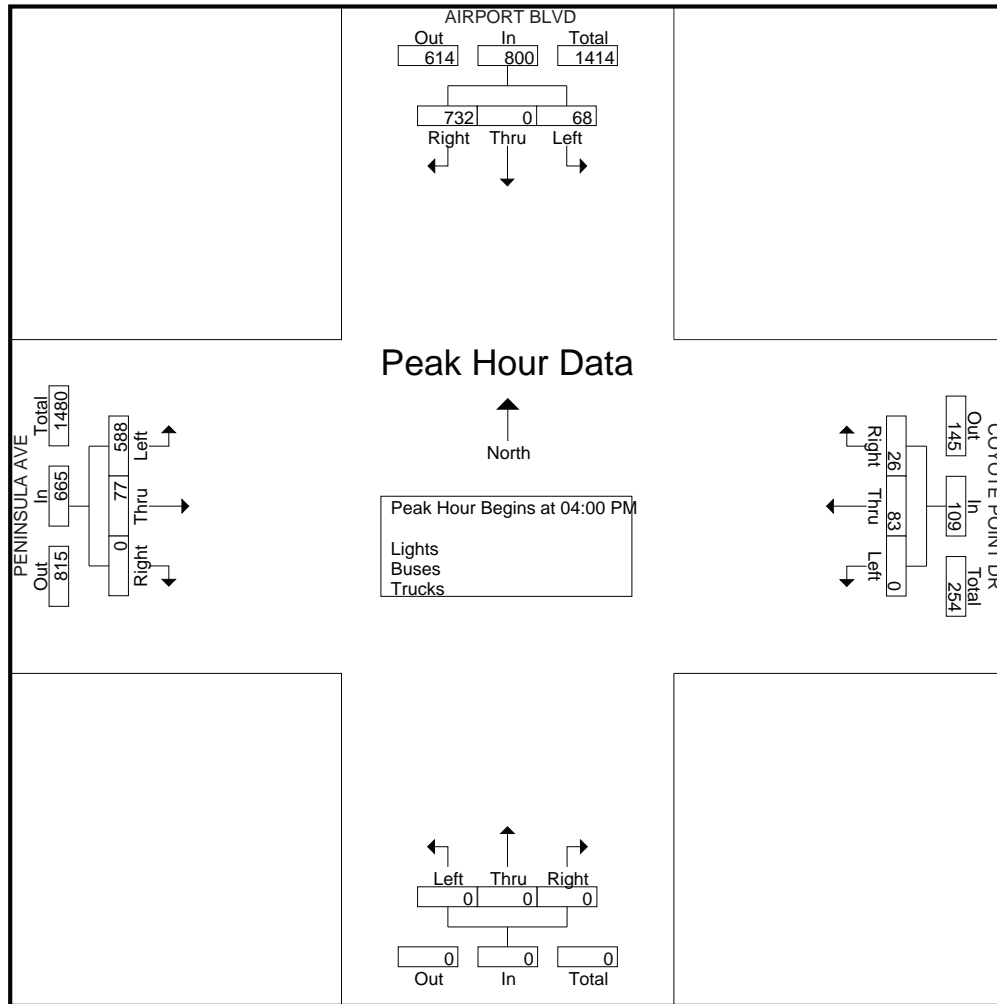
Start Time	AIRPORT BLVD Southbound					COYOTE POINT DR Westbound					Northbound					PENINSULA AVE Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
04:00 PM	181	0	27	1	209	8	24	0	0	32	0	0	0	0	0	0	13	130	4	147	388
04:15 PM	189	0	15	5	209	9	16	0	0	25	0	0	0	0	0	0	29	146	0	175	409
04:30 PM	178	0	14	5	197	7	23	0	0	30	0	0	0	0	0	0	16	148	0	164	391
04:45 PM	184	0	12	0	196	2	20	0	0	22	0	0	0	0	0	0	19	164	0	183	401
Total	732	0	68	11	811	26	83	0	0	109	0	0	0	0	0	0	77	588	4	669	1589
05:00 PM	164	0	6	2	172	17	9	0	0	26	0	0	0	0	0	0	12	151	0	163	361
05:15 PM	160	0	13	5	178	9	22	0	0	31	0	0	0	0	0	0	5	155	0	160	369
05:30 PM	146	0	31	0	177	11	34	0	0	45	0	0	0	0	0	0	8	178	0	186	408
05:45 PM	176	0	25	4	205	8	32	0	0	40	0	0	0	0	0	0	13	171	1	185	430
Total	646	0	75	11	732	45	97	0	0	142	0	0	0	0	0	0	38	655	1	694	1568
Grand Total	1378	0	143	22	1543	71	180	0	0	251	0	0	0	0	0	0	115	1243	5	1363	3157
Apprch %	89.3	0	9.3	1.4		28.3	71.7	0	0		0	0	0	0		0	8.4	91.2	0.4		
Total %	43.6	0	4.5	0.7	48.9	2.2	5.7	0	0	8	0	0	0	0	0	0	3.6	39.4	0.2	43.2	
Lights	1362	0	142	22	1526	70	179	0	0	249	0	0	0	0	0	0	115	1229	5	1349	3124
% Lights	98.8	0	99.3	100	98.9	98.6	99.4	0	0	99.2	0	0	0	0	0	0	100	98.9	100	99	99
Buses	4	0	0	0	4	0	1	0	0	1	0	0	0	0	0	0	0	3	0	3	8
% Buses	0.3	0	0	0	0.3	0	0.6	0	0	0.4	0	0	0	0	0	0	0	0.2	0	0.2	0.3
Trucks	12	0	1	0	13	1	0	0	0	1	0	0	0	0	0	0	0	11	0	11	25
% Trucks	0.9	0	0.7	0	0.8	1.4	0	0	0	0.4	0	0	0	0	0	0	0	0.9	0	0.8	0.8

Start Time	AIRPORT BLVD Southbound				COYOTE POINT DR Westbound				Northbound				PENINSULA AVE Eastbound				Int. Total	
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total		
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 04:00 PM																		
04:00 PM	181	0	<b>27</b>	<b>208</b>	8	<b>24</b>	0	<b>32</b>	0	0	0	0	0	0	13	130	143	383
04:15 PM	<b>189</b>	0	15	204	<b>9</b>	16	0	25	0	0	0	0	0	<b>29</b>	146	175	<b>404</b>	
04:30 PM	178	0	14	192	7	23	0	30	0	0	0	0	0	16	148	164	386	
04:45 PM	184	0	12	196	2	20	0	22	0	0	0	0	0	19	<b>164</b>	<b>183</b>	401	
Total Volume	732	0	68	800	26	83	0	109	0	0	0	0	0	77	588	665	1574	
% App. Total	91.5	0	8.5		23.9	76.1	0		0	0	0		0	11.6	88.4			
PHF	.968	.000	.630	.962	.722	.865	.000	.852	.000	.000	.000	.000	.000	.664	.896	.908	.974	

# Traffic Data Service

San Jose, CA  
 (408) 622-4787  
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File Name : 11PM FINAL  
 Site Code : 00000011  
 Start Date : 5/31/2018  
 Page No : 2



# Traffic Data Service

San Jose, CA  
 (408) 622-4787  
 tdsbay@cs.com

File Name : 11PM FINAL  
 Site Code : 00000011  
 Start Date : 5/31/2018  
 Page No : 1

Groups Printed- Bikes

Start Time	AIRPORT BLVD Southbound					COYOTE POINT DR Westbound					Northbound					PENINSULA AVE Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
04:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3
Total	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	5
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
05:30 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	3
Grand Total	2	0	0	0	2	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	8
Apprch %	100	0	0	0		0	100	0	0		0	0	0	0		0	100	0	0		
Total %	25	0	0	0	25	0	37.5	0	0	37.5	0	0	0	0	0	0	37.5	0	0	37.5	

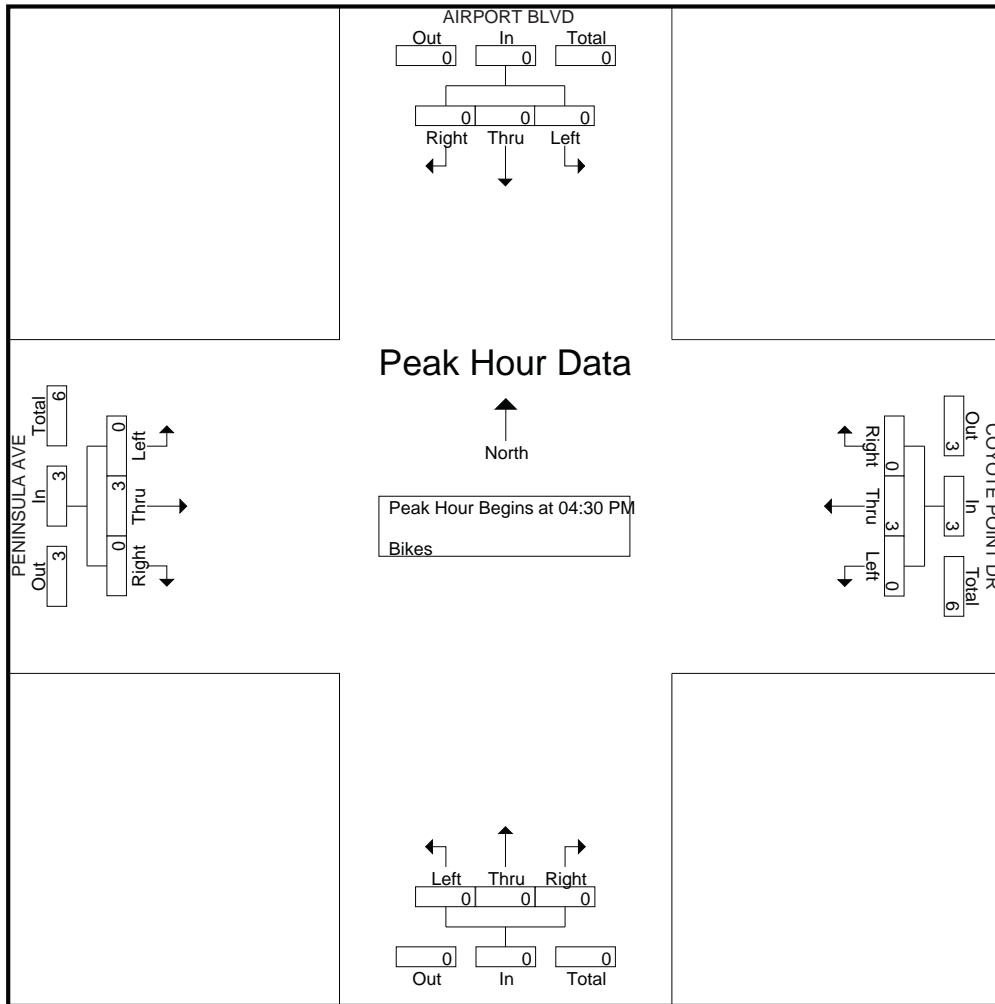
Start Time	AIRPORT BLVD Southbound					COYOTE POINT DR Westbound					Northbound					PENINSULA AVE Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
04:30 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
04:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Total Volume	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	6
% App. Total	0	0	0	0		0	100	0	0		0	0	0	0		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.375	.000	.375	.000	.000	.000	.000	.000	.000	.000	.375	.000	.375	.500	

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Entire Intersection Begins at 04:30 PM

# Traffic Data Service

San Jose, CA  
 (408) 622-4787  
 tdsbay@cs.com

File Name : 11PM FINAL  
 Site Code : 00000011  
 Start Date : 5/31/2018  
 Page No : 2



# Traffic Data Service

San Jose, CA  
(408) 622-4787  
tdsbay@cs.com

File Name : 14AM FINAL  
Site Code : 00000014  
Start Date : 5/30/2018  
Page No : 1

## Groups Printed- Lights - Buses - Trucks

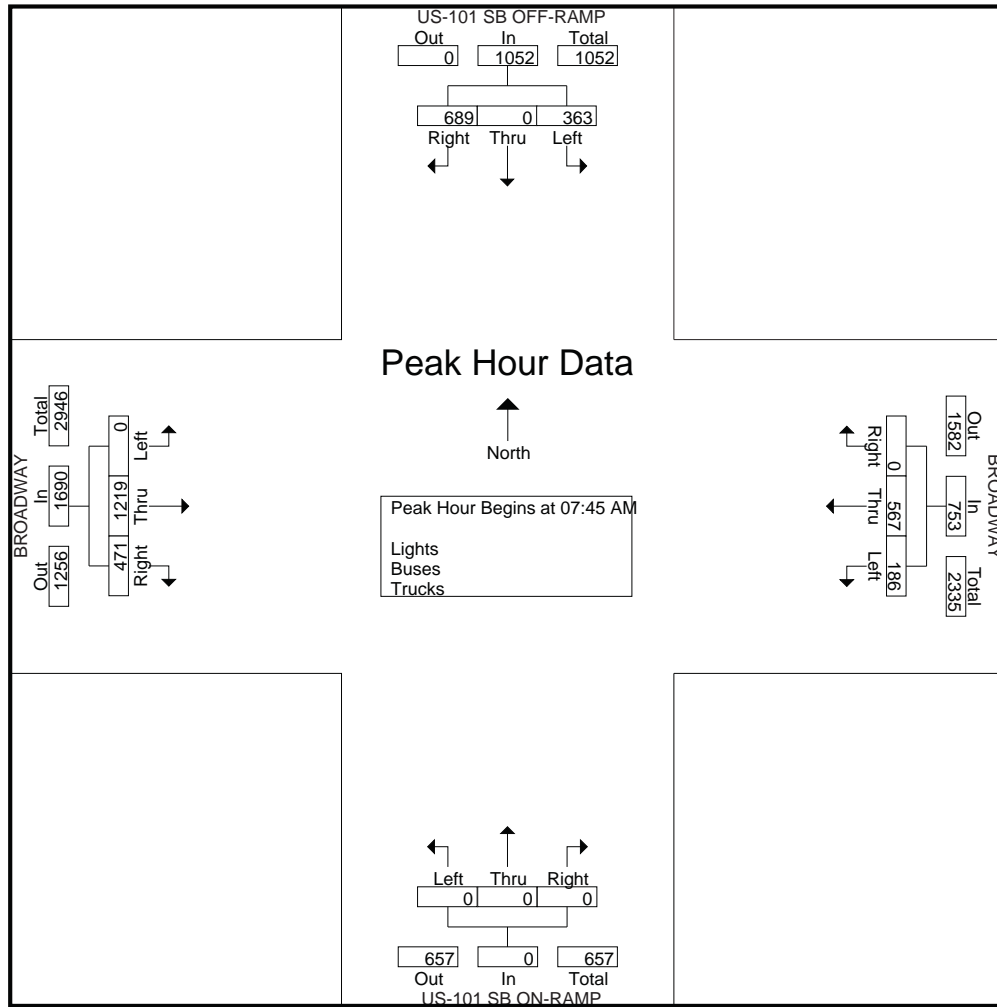
Start Time	US-101 SB OFF-RAMP Southbound					BROADWAY Westbound					US-101 SB ON-RAMP Northbound					BROADWAY Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	122	0	55	0	177	0	122	33	0	155	0	0	0	0	0	112	199	0	0	311	643
07:15 AM	144	0	59	5	208	0	128	25	0	153	0	0	0	0	0	123	273	0	0	396	757
07:30 AM	177	0	64	3	244	0	145	36	0	181	0	0	0	0	0	120	274	0	0	394	819
07:45 AM	201	0	83	2	286	0	149	49	0	198	0	0	0	0	0	110	301	0	0	411	895
Total	644	0	261	10	915	0	544	143	0	687	0	0	0	0	0	465	1047	0	0	1512	3114
08:00 AM	158	0	91	0	249	0	139	51	0	190	0	0	0	0	0	123	309	0	0	432	871
08:15 AM	191	0	87	0	278	0	132	39	0	171	0	0	0	0	0	129	298	0	0	427	876
08:30 AM	139	0	102	1	242	0	147	47	0	194	0	0	0	0	0	109	311	0	0	420	856
08:45 AM	203	0	86	4	293	0	135	33	0	168	0	0	0	0	0	130	261	0	0	391	852
Total	691	0	366	5	1062	0	553	170	0	723	0	0	0	0	0	491	1179	0	0	1670	3455
Grand Total	1335	0	627	15	1977	0	1097	313	0	1410	0	0	0	0	0	956	2226	0	0	3182	6569
Apprch %	67.5	0	31.7	0.8		0	77.8	22.2	0		0	0	0	0	0	30	70	0	0		
Total %	20.3	0	9.5	0.2	30.1	0	16.7	4.8	0	21.5	0	0	0	0	0	14.6	33.9	0	0	48.4	
Lights	1296	0	574	15	1885	0	1044	273	0	1317	0	0	0	0	0	924	2171	0	0	3095	6297
% Lights	97.1	0	91.5	100	95.3	0	95.2	87.2	0	93.4	0	0	0	0	0	96.7	97.5	0	0	97.3	95.9
Buses	3	0	27	0	30	0	8	12	0	20	0	0	0	0	0	4	9	0	0	13	63
% Buses	0.2	0	4.3	0	1.5	0	0.7	3.8	0	1.4	0	0	0	0	0	0.4	0.4	0	0	0.4	1
Trucks	36	0	26	0	62	0	45	28	0	73	0	0	0	0	0	28	46	0	0	74	209
% Trucks	2.7	0	4.1	0	3.1	0	4.1	8.9	0	5.2	0	0	0	0	0	2.9	2.1	0	0	2.3	3.2

Start Time	US-101 SB OFF-RAMP Southbound					BROADWAY Westbound					US-101 SB ON-RAMP Northbound					BROADWAY Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	<b>201</b>	0	83		<b>284</b>	0	<b>149</b>	49		<b>198</b>	0	0	0	0	0	110	301	0	0	411	<b>893</b>
08:00 AM	158	0	91		249	0	139	51		190	0	0	0	0	0	123	309	0	0	432	871
08:15 AM	191	0	87		278	0	132	39		171	0	0	0	0	0	<b>129</b>	298	0	0	427	876
08:30 AM	139	0	<b>102</b>		241	0	147	47		194	0	0	0	0	0	109	<b>311</b>	0	0	420	855
Total Volume	689	0	363		1052	0	567	186		753	0	0	0	0	0	471	1219	0	0	1690	3495
% App. Total	65.5	0	34.5			0	75.3	24.7			0	0	0	0	0	27.9	72.1	0	0		
PHF	.857	.000	.890		.926	.000	.951	.912		.951	.000	.000	.000	.000	.000	.913	.980	.000	.978		.978

# Traffic Data Service

San Jose, CA  
 (408) 622-4787  
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File Name : 14AM FINAL  
 Site Code : 00000014  
 Start Date : 5/30/2018  
 Page No : 2



# Traffic Data Service

San Jose, CA  
 (408) 622-4787  
 tdsbay@cs.com

File Name : 14AM FINAL  
 Site Code : 00000014  
 Start Date : 5/30/2018  
 Page No : 1

Groups Printed- Bikes

Start Time	US-101 SB OFF-RAMP Southbound					BROADWAY Westbound					US-101 SB ON-RAMP Northbound					BROADWAY Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	0	2
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Total	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	0	3
Grand Total	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	4	0	0	0	4
Apprch %	0	0	0	0		0	100	0	0		0	0	0	0		0	100	0	0		
Total %	0	0	0	0		0	20	0	0	20	0	0	0	0		0	80	0	0	80	

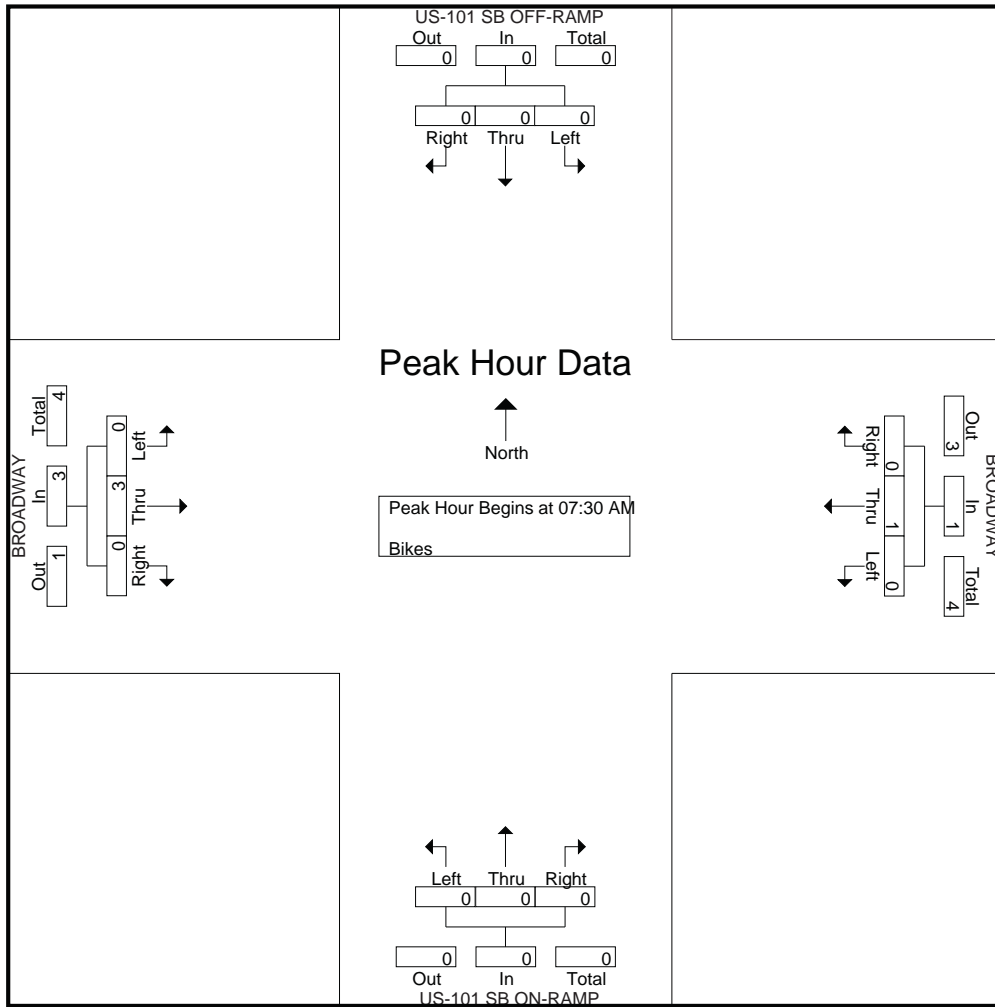
Start Time	US-101 SB OFF-RAMP Southbound					BROADWAY Westbound					US-101 SB ON-RAMP Northbound					BROADWAY Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	0	2
Total Volume	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	0	3
% App. Total	0	0	0	0		0	100	0	0		0	0	0	0		0	100	0	0		
PHF	.000	.000	.000	.000		.000	.250	.000	.250		.000	.000	.000	.000		.000	.375	.000	.375		.333

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Entire Intersection Begins at 07:30 AM

# Traffic Data Service

San Jose, CA  
 (408) 622-4787  
 tdsbay@cs.com

File Name : 14AM FINAL  
 Site Code : 00000014  
 Start Date : 5/30/2018  
 Page No : 2



# Traffic Data Service

San Jose, CA  
 (408) 622-4787  
 tdsbay@cs.com

File Name : 14PM FINAL  
 Site Code : 00000014  
 Start Date : 5/30/2018  
 Page No : 1

### Groups Printed- Lights - Buses - Trucks

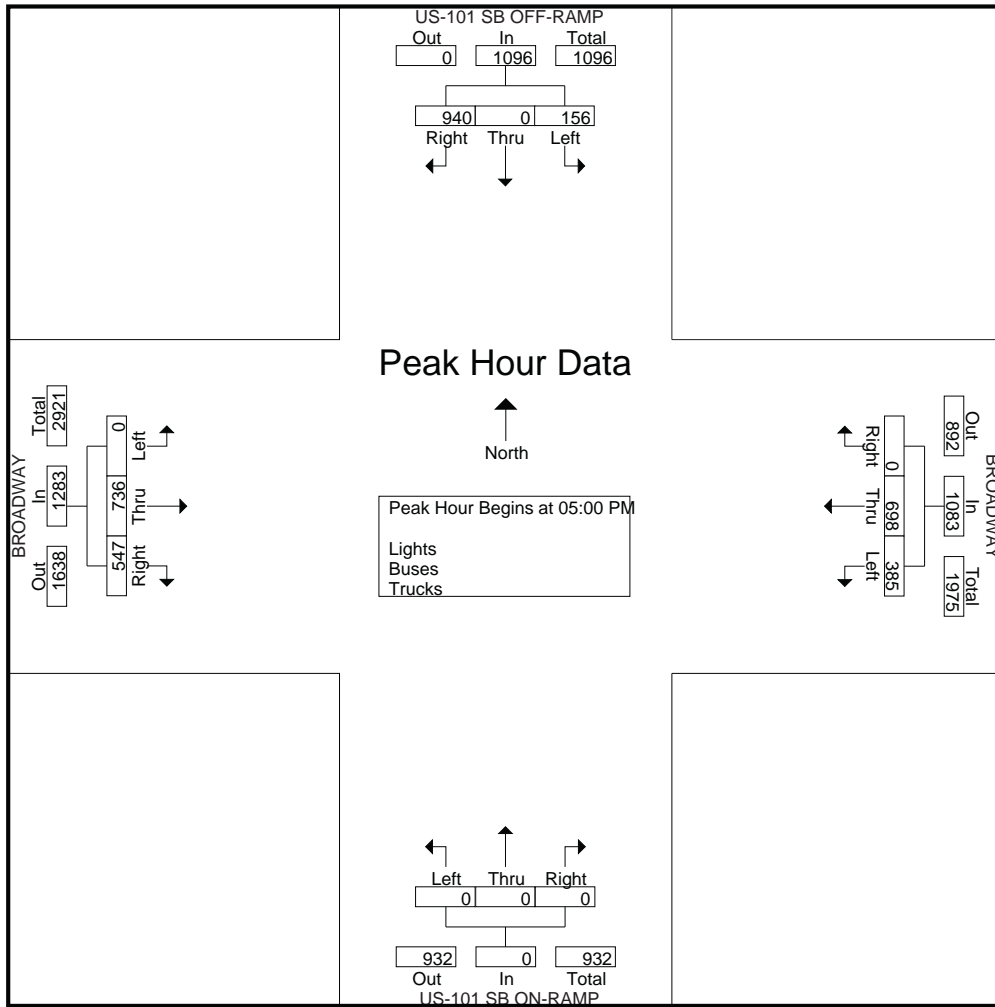
Start Time	US-101 SB OFF-RAMP Southbound					BROADWAY Westbound					US-101 SB ON-RAMP Northbound					BROADWAY Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
04:00 PM	192	0	43	3	238	0	128	87	0	215	0	0	0	0	0	157	190	0	0	347	800
04:15 PM	177	1	40	2	220	0	163	93	0	256	0	0	0	0	0	135	217	0	0	352	828
04:30 PM	195	0	46	4	245	0	176	99	0	275	0	0	0	0	0	159	181	0	0	340	860
04:45 PM	214	0	61	2	277	0	171	88	0	259	0	0	0	0	0	132	217	0	0	349	885
Total	778	1	190	11	980	0	638	367	0	1005	0	0	0	0	0	583	805	0	0	1388	3373
05:00 PM	222	0	44	2	268	0	173	102	0	275	0	0	0	0	0	127	196	0	0	323	866
05:15 PM	212	0	36	5	253	0	164	83	0	247	0	0	0	0	0	140	201	0	0	341	841
05:30 PM	236	0	31	1	268	0	191	103	0	294	0	0	0	0	0	154	160	0	0	314	876
05:45 PM	270	0	45	3	318	0	170	97	0	267	0	0	0	0	0	126	179	0	0	305	890
Total	940	0	156	11	1107	0	698	385	0	1083	0	0	0	0	0	547	736	0	0	1283	3473
Grand Total	1718	1	346	22	2087	0	1336	752	0	2088	0	0	0	0	0	1130	1541	0	0	2671	6846
Apprch %	82.3	0	16.6	1.1		0	64	36	0		0	0	0	0		42.3	57.7	0	0		
Total %	25.1	0	5.1	0.3	30.5	0	19.5	11	0	30.5	0	0	0	0	0	16.5	22.5	0	0	39	
Lights	1706	1	311	22	2040	0	1305	744	0	2049	0	0	0	0	0	1103	1509	0	0	2612	6701
% Lights	99.3	100	89.9	100	97.7	0	97.7	98.9	0	98.1	0	0	0	0	0	97.6	97.9	0	0	97.8	97.9
Buses	2	0	17	0	19	0	7	2	0	9	0	0	0	0	0	4	8	0	0	12	40
% Buses	0.1	0	4.9	0	0.9	0	0.5	0.3	0	0.4	0	0	0	0	0	0.4	0.5	0	0	0.4	0.6
Trucks	10	0	18	0	28	0	24	6	0	30	0	0	0	0	0	23	24	0	0	47	105
% Trucks	0.6	0	5.2	0	1.3	0	1.8	0.8	0	1.4	0	0	0	0	0	2	1.6	0	0	1.8	1.5

Start Time	US-101 SB OFF-RAMP Southbound				BROADWAY Westbound				US-101 SB ON-RAMP Northbound				BROADWAY Eastbound				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	222	0	44	266	0	173	102	275	0	0	0	0	127	196	0	323	864
05:15 PM	212	0	36	248	0	164	83	247	0	0	0	0	140	<b>201</b>	0	<b>341</b>	836
05:30 PM	236	0	31	267	0	<b>191</b>	<b>103</b>	<b>294</b>	0	0	0	0	<b>154</b>	160	0	314	875
05:45 PM	<b>270</b>	0	<b>45</b>	<b>315</b>	0	170	97	267	0	0	0	0	126	179	0	305	<b>887</b>
Total Volume	940	0	156	1096	0	698	385	1083	0	0	0	0	547	736	0	1283	3462
% App. Total	85.8	0	14.2		0	64.5	35.5		0	0	0		42.6	57.4	0		
PHF	.870	.000	.867	.870	.000	.914	.934	.921	.000	.000	.000	.000	.888	.915	.000	.941	.976

# Traffic Data Service

San Jose, CA  
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File Name : 14PM FINAL  
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 Start Date : 5/30/2018  
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## Groups Printed- Bikes

Start Time	US-101 SB OFF-RAMP Southbound					BROADWAY Westbound					US-101 SB ON-RAMP Northbound					BROADWAY Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	1
Total	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	0	1
Grand Total	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	2	0	0	0	2
Apprch %	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	100	0	0	0	0
Total %	0	0	0	0	0	0	66.7	0	0	66.7	0	0	0	0	0	0	33.3	0	0	33.3	0

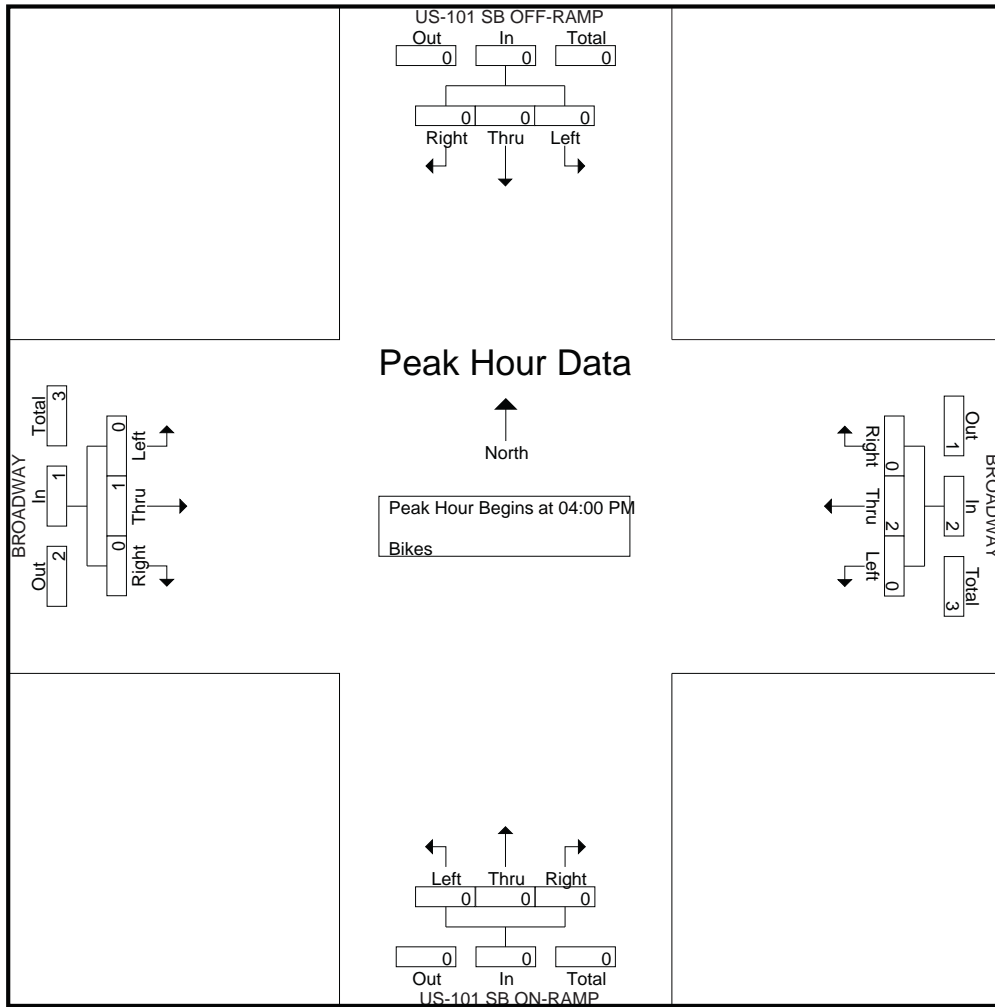
Start Time	US-101 SB OFF-RAMP Southbound					BROADWAY Westbound					US-101 SB ON-RAMP Northbound					BROADWAY Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	0	1
% App. Total	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	100	0	0	0	0
PHF	.000	.000	.000	.000	.000	.000	.500	.000	.000	.500	.000	.000	.000	.000	.000	.000	.250	.000	.000	.250	.750

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Entire Intersection Begins at 04:00 PM

# Traffic Data Service

San Jose, CA  
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File Name : 14PM FINAL  
Site Code : 00000014  
Start Date : 5/30/2018  
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**Appendix B – Existing Conditions Intersections Level of Service &  
Queueing Worksheets**

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↖	↑↑	↗	
Traffic Vol, veh/h	283	106	0	223	17	0
Future Vol, veh/h	283	106	0	223	17	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	-	-	160	-	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	308	115	0	242	18	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	423	0	487
Stage 1	-	-	-	-	366
Stage 2	-	-	-	-	121
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	1133	-	510
Stage 1	-	-	-	-	672
Stage 2	-	-	-	-	891
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1133	-	510
Mov Cap-2 Maneuver	-	-	-	-	510
Stage 1	-	-	-	-	672
Stage 2	-	-	-	-	891

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	510	-	-	1133	-
HCM Lane V/C Ratio	0.036	-	-	-	-
HCM Control Delay (s)	12.3	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

HCM 2010 TWSC  
2: Project Dwy E & Airport Blvd/Broadway

04/09/2020

Intersection						
Int Delay, s/veh	1.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑	
Traffic Vol, veh/h	283	0	70	223	0	12
Future Vol, veh/h	283	0	70	223	0	12
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	308	0	76	242	0	13






















Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	308	0	581
Stage 1	-	-	-	-	308
Stage 2	-	-	-	-	273
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	1249	-	445
Stage 1	-	-	-	-	719
Stage 2	-	-	-	-	748
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1249	-	414
Mov Cap-2 Maneuver	-	-	-	-	414
Stage 1	-	-	-	-	719
Stage 2	-	-	-	-	696

Approach	EB	WB	NB
HCM Control Delay, s	0	2.1	9.2
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	864	-	-	1249	-
HCM Lane V/C Ratio	0.015	-	-	0.061	-
HCM Control Delay (s)	9.2	-	-	8.1	0.2
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0.2	-

HCM 2010 Signalized Intersection Summary  
 3: Broadway/Airport Blvd & Old Bayshore Hwy

04/09/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	8	579	15	14	6	1152	389	16	4	83	102
Future Volume (veh/h)	70	8	579	15	14	6	1152	389	16	4	83	102
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	82	0	629	16	15	7	1252	423	17	4	90	111
Adj No. of Lanes	2	0	2	0	2	0	2	2	0	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	544	0	1742	49	49	23	1365	2088	84	9	745	333
Arrive On Green	0.15	0.00	0.15	0.03	0.03	0.03	0.40	0.60	0.60	0.01	0.21	0.21
Sat Flow, veh/h	3548	0	3167	1439	1421	675	3442	3469	139	1774	3539	1583
Grp Volume(v), veh/h	82	0	629	20	0	18	1252	215	225	4	90	111
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1791	0	1744	1721	1770	1838	1774	1770	1583
Q Serve(g_s), s	1.8	0.0	9.8	1.0	0.0	0.9	30.3	4.8	4.9	0.2	1.8	5.2
Cycle Q Clear(g_c), s	1.8	0.0	9.8	1.0	0.0	0.9	30.3	4.8	4.9	0.2	1.8	5.2
Prop In Lane	1.00		1.00	0.80		0.39	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	544	0	1742	62	0	60	1365	1065	1107	9	745	333
V/C Ratio(X)	0.15	0.00	0.36	0.32	0.00	0.30	0.92	0.20	0.20	0.43	0.12	0.33
Avail Cap(c_a), veh/h	727	0	1905	367	0	357	1469	1065	1107	101	745	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	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.2	0.0	11.1	41.4	0.0	41.4	25.1	7.9	7.9	43.6	28.1	29.4
Incr Delay (d2), s/veh	0.1	0.0	0.1	3.0	0.0	2.8	9.0	0.4	0.4	27.8	0.3	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	0.9	0.0	4.3	0.5	0.0	0.5	16.0	2.5	2.6	0.2	0.9	2.5
LnGrp Delay(d),s/veh	32.4	0.0	11.2	44.4	0.0	44.2	34.1	8.3	8.3	71.3	28.4	32.1
LnGrp LOS	C		B	D		D	C	A	A	E	C	C
Approach Vol, veh/h		711			38			1692			205	
Approach Delay, s/veh		13.7			44.3			27.4			31.2	
Approach LOS		B			D			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.0	57.4		18.0	39.3	23.0		7.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	51.0		18.0	37.5	18.5		18.0				
Max Q Clear Time (g_c+I1), s	2.2	6.9		11.8	32.3	7.2		3.0				
Green Ext Time (p_c), s	0.0	2.7		1.7	2.5	0.6		0.1				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			24.3									
HCM 2010 LOS			C									
<b>Notes</b>												



















HCM 2010 Signalized Intersection Summary  
 4: Broadway & California Dr

04/09/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	401	333	22	44	378	443	3	416	27	253	265	351
Future Volume (veh/h)	401	333	22	44	378	443	3	416	27	253	265	351
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	436	362	24	48	411	0	3	452	29	275	288	0
Adj No. of Lanes	2	1	0	1	2	1	1	2	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	522	463	31	75	563	252	387	897	57	316	941	800
Arrive On Green	0.15	0.27	0.27	0.04	0.16	0.00	0.27	0.27	0.27	0.18	0.51	0.00
Sat Flow, veh/h	3442	1728	115	1774	3539	1583	1087	3378	216	1774	1863	1583
Grp Volume(v), veh/h	436	0	386	48	411	0	3	236	245	275	288	0
Grp Sat Flow(s),veh/h/ln	1721	0	1843	1774	1770	1583	1087	1770	1825	1774	1863	1583
Q Serve(g_s), s	9.0	0.0	14.2	2.0	8.1	0.0	0.1	8.3	8.3	11.0	6.6	0.0
Cycle Q Clear(g_c), s	9.0	0.0	14.2	2.0	8.1	0.0	0.1	8.3	8.3	11.0	6.6	0.0
Prop In Lane	1.00		0.06	1.00		1.00	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	522	0	494	75	563	252	387	470	485	316	941	800
V/C Ratio(X)	0.84	0.00	0.78	0.64	0.73	0.00	0.01	0.50	0.51	0.87	0.31	0.00
Avail Cap(c_a), veh/h	540	0	614	124	870	389	387	470	485	327	941	800
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	30.2	0.0	24.8	34.5	29.3	0.0	19.8	22.8	22.8	29.3	10.6	0.0
Incr Delay (d2), s/veh	10.7	0.0	5.2	8.5	1.8	0.0	0.0	3.8	3.7	21.2	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	0.0	7.9	1.1	4.1	0.0	0.0	4.5	4.7	7.3	3.6	0.0
LnGrp Delay(d),s/veh	40.9	0.0	30.0	43.1	31.2	0.0	19.8	26.6	26.5	50.4	11.5	0.0
LnGrp LOS	D		C	D	C		B	C	C	D	B	
Approach Vol, veh/h		822			459			484			563	
Approach Delay, s/veh		35.8			32.4			26.5			30.5	
Approach LOS		D			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s	17.5	24.0	7.6	24.1		41.5	15.6	16.1				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s	13.5	19.0	5.1	24.4		37.0	11.5	18.0				
Max Q Clear Time (g_c+1), s	13.0	10.3	4.0	16.2		8.6	11.0	10.1				
Green Ext Time (p_c), s	0.0	1.8	0.0	1.4		1.7	0.1	1.6				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				31.9								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary  
5: Broadway & Carolan Dr

04/09/2020

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	0	0	0	69	0	298	0	1089	171	103	800	0	
Future Volume (veh/h)	0	0	0	69	0	298	0	1089	171	103	800	0	
Number				3	8	18	5	2	12	1	6	16	
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		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	
Adj Sat Flow, veh/h/ln				1900	1863	1863	1863	1863	1900	1863	1863	0	
Adj Flow Rate, veh/h				75	0	324	0	1184	186	112	870	0	
Adj No. of Lanes				0	1	1	1	3	0	1	3	0	
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %				2	2	2	2	2	2	2	2	0	
Cap, veh/h				432	0	385	130	1916	301	144	3023	0	
Arrive On Green				0.24	0.00	0.24	0.00	0.43	0.43	0.08	0.59	0.00	
Sat Flow, veh/h				1774	0	1583	634	4434	696	1774	5253	0	
Grp Volume(v), veh/h				75	0	324	0	905	465	112	870	0	
Grp Sat Flow(s),veh/h/ln				1774	0	1583	634	1695	1740	1774	1695	0	
Q Serve(g_s), s				1.9	0.0	10.8	0.0	11.5	11.5	3.4	4.6	0.0	
Cycle Q Clear(g_c), s				1.9	0.0	10.8	0.0	11.5	11.5	3.4	4.6	0.0	
Prop In Lane				1.00		1.00	1.00		0.40	1.00		0.00	
Lane Grp Cap(c), veh/h				432	0	385	130	1465	752	144	3023	0	
V/C Ratio(X)				0.17	0.00	0.84	0.00	0.62	0.62	0.78	0.29	0.00	
Avail Cap(c_a), veh/h				575	0	513	130	1465	752	240	3023	0	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	
Uniform Delay (d), s/veh				16.6	0.0	20.0	0.0	12.2	12.2	25.0	5.5	0.0	
Incr Delay (d2), s/veh				0.2	0.0	9.2	0.0	2.0	3.8	8.7	0.2	0.0	
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln				0.9	0.0	5.7	0.0	5.7	6.2	2.0	2.2	0.0	
LnGrp Delay(d),s/veh				16.8	0.0	29.2	0.0	14.2	16.0	33.7	5.7	0.0	
LnGrp LOS				B		C		B	B	C	A		
Approach Vol, veh/h					399			1370			982		
Approach Delay, s/veh					26.8			14.8			8.9		
Approach LOS					C			B			A		
Timer	1	2	3	4	5	6	7	8					
Assigned Phs	1	2				6		8					
Phs Duration (G+Y+Rc), s	9.0	28.5				37.5		18.0					
Change Period (Y+Rc), s	4.5	4.5				4.5		4.5					
Max Green Setting (Gmax), s	7.5	21.0				33.0		18.0					
Max Q Clear Time (g_c+1), s	5.4	13.5				6.6		12.8					
Green Ext Time (p_c), s	0.0	4.8				6.5		0.7					
<b>Intersection Summary</b>													
HCM 2010 Ctrl Delay				14.5									
HCM 2010 LOS				B									

# HCM 2010 Signalized Intersection Summary

## 6: Broadway & Rollins Rd

04/09/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	147	57	98	105	183	353	187	1165	35	218	700	262
Future Volume (veh/h)	147	57	98	105	183	353	187	1165	35	218	700	262
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	160	62	107	114	199	0	203	1266	38	237	761	0
Adj No. of Lanes	2	1	1	1	1	1	2	3	0	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	274	272	231	146	277	235	313	1836	55	343	1885	587
Arrive On Green	0.08	0.15	0.15	0.08	0.15	0.00	0.09	0.36	0.36	0.10	0.37	0.00
Sat Flow, veh/h	3442	1863	1583	1774	1863	1583	3442	5074	152	3442	5085	1583
Grp Volume(v), veh/h	160	62	107	114	199	0	203	846	458	237	761	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	1863	1583	1721	1695	1836	1721	1695	1583
Q Serve(g_s), s	2.6	1.7	3.6	3.7	5.9	0.0	3.3	12.3	12.3	3.9	6.4	0.0
Cycle Q Clear(g_c), s	2.6	1.7	3.6	3.7	5.9	0.0	3.3	12.3	12.3	3.9	6.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	274	272	231	146	277	235	313	1227	664	343	1885	587
V/C Ratio(X)	0.58	0.23	0.46	0.78	0.72	0.00	0.65	0.69	0.69	0.69	0.40	0.00
Avail Cap(c_a), veh/h	320	578	491	199	613	521	492	1227	664	385	1885	587
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(l)	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	25.8	21.9	22.7	26.1	23.5	0.0	25.5	15.7	15.7	25.3	13.5	0.0
Incr Delay (d2), s/veh	2.0	0.4	1.4	12.9	3.5	0.0	2.3	3.2	5.8	4.5	0.6	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	1.3	0.9	1.7	2.3	3.3	0.0	1.7	6.3	7.3	2.1	3.1	0.0
LnGrp Delay(d),s/veh	27.8	22.3	24.1	39.0	27.0	0.0	27.7	18.9	21.5	29.7	14.2	0.0
LnGrp LOS	C	C	C	D	C		C	B	C	C	B	
Approach Vol, veh/h		329			313			1507			998	
Approach Delay, s/veh		25.6			31.4			20.9			17.9	
Approach LOS		C			C			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.3	25.5	9.3	13.0	9.8	26.0	9.1	13.1				
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	6.5	21.0	6.5	18.0	8.3	19.2	5.4	19.1				
Max Q Clear Time (g_c+1), s	5.9	14.3	5.7	5.6	5.3	8.4	4.6	7.9				
Green Ext Time (p_c), s	0.1	4.2	0.0	0.5	0.2	3.7	0.0	0.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay					21.5							
HCM 2010 LOS					C							

# HCM Signalized Intersection Capacity Analysis

## 7: Broadway & US-101 SB Ramps

04/09/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↔	↔↔↔					↕↕↕	↕	↕↕	↕↕		
Traffic Volume (vph)	363	0	689	0	0	0	0	1194	471	186	491	0	
Future Volume (vph)	363	0	689	0	0	0	0	1194	471	186	491	0	
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		
Lane Util. Factor		1.00	0.76					0.86	0.86	0.97	0.95		
Frt		1.00	0.85					0.99	0.85	1.00	1.00		
Flt Protected		0.95	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (prot)		1770	3610					4751	1362	3433	3539		
Flt Permitted		0.95	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (perm)		1770	3610					4751	1362	3433	3539		
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)	395	0	749	0	0	0	0	1298	512	202	534	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	11	215	0	0	0	
Lane Group Flow (vph)	0	395	749	0	0	0	0	1395	189	202	534	0	
Turn Type	Split	NA	custom					NA	Perm	Split	NA		
Protected Phases	7	7	2 7					2		6	6		
Permitted Phases									2				
Actuated Green, G (s)		20.7	52.1					26.9	26.9	18.1	18.1		
Effective Green, g (s)		20.7	52.1					26.9	26.9	18.1	18.1		
Actuated g/C Ratio		0.26	0.66					0.34	0.34	0.23	0.23		
Clearance Time (s)		4.5						4.5	4.5	4.5	4.5		
Vehicle Extension (s)		3.0						3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)		462	2374					1613	462	784	808		
v/s Ratio Prot		c0.22	0.21					c0.29		0.06	c0.15		
v/s Ratio Perm									0.14				
v/c Ratio		0.85	0.32					0.86	0.41	0.26	0.66		
Uniform Delay, d1		27.8	5.9					24.4	20.1	25.0	27.8		
Progression Factor		1.00	1.00					1.00	1.00	1.00	1.00		
Incremental Delay, d2		14.3	0.1					6.4	2.7	0.8	4.2		
Delay (s)		42.1	5.9					30.9	22.7	25.8	32.0		
Level of Service		D	A					C	C	C	C		
Approach Delay (s)		18.4			0.0			29.1			30.3		
Approach LOS		B			A			C			C		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			26.0									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.80										
Actuated Cycle Length (s)			79.2									Sum of lost time (s)	13.5
Intersection Capacity Utilization			63.2%									ICU Level of Service	B
Analysis Period (min)			15										

c Critical Lane Group

HCM 2010 Signalized Intersection Summary  
 8: US-101 NB Ramp & Old Bayshore Hwy

04/09/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	227	88	902	359	7	344	7	418	12	10	5
Future Volume (veh/h)	8	227	88	902	359	7	344	7	418	12	10	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	9	247	96	980	390	8	531	0	292	13	11	5
Adj No. of Lanes	1	2	1	2	2	0	2	0	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	20	405	181	1136	1536	31	943	0	421	24	21	9
Arrive On Green	0.01	0.11	0.11	0.33	0.43	0.43	0.27	0.00	0.27	0.03	0.03	0.03
Sat Flow, veh/h	1774	3539	1583	3442	3547	73	3548	0	1583	793	671	305
Grp Volume(v), veh/h	9	247	96	980	194	204	531	0	292	29	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1721	1770	1850	1774	0	1583	1769	0	0
Q Serve(g_s), s	0.4	4.6	4.0	18.6	4.9	4.9	9.0	0.0	11.6	1.1	0.0	0.0
Cycle Q Clear(g_c), s	0.4	4.6	4.0	18.6	4.9	4.9	9.0	0.0	11.6	1.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.04	1.00		1.00	0.45		0.17
Lane Grp Cap(c), veh/h	20	405	181	1136	766	801	943	0	421	55	0	0
V/C Ratio(X)	0.44	0.61	0.53	0.86	0.25	0.25	0.56	0.00	0.69	0.53	0.00	0.00
Avail Cap(c_a), veh/h	127	916	410	1360	1030	1077	943	0	421	458	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	34.2	29.3	29.0	21.8	12.6	12.6	22.1	0.0	23.0	33.2	0.0	0.0
Incr Delay (d2), s/veh	14.3	1.5	2.4	5.2	0.2	0.2	2.4	0.0	9.1	7.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.3	1.9	9.5	2.4	2.5	4.7	0.0	6.1	0.7	0.0	0.0
LnGrp Delay(d),s/veh	48.5	30.8	31.4	27.0	12.7	12.7	24.5	0.0	32.1	41.0	0.0	0.0
LnGrp LOS	D	C	C	C	B	B	C		C	D		
Approach Vol, veh/h		352			1378				823			29
Approach Delay, s/veh		31.4			22.9				27.2			41.0
Approach LOS		C			C				C			D
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		23.0	27.5	12.5		6.6	5.3	34.6				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.5	27.5	18.0		18.0	5.0	40.5				
Max Q Clear Time (g_c+I1), s		13.6	20.6	6.6		3.1	2.4	6.9				
Green Ext Time (p_c), s		1.5	2.4	1.3		0.1	0.0	2.4				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			25.6									
HCM 2010 LOS			C									
<b>Notes</b>												

# HCM 2010 Signalized Intersection Summary












## 9: Anza Blvd & Airport Blvd

04/09/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	328	32	46	119	28	35	36	49	12	24	18
Future Volume (veh/h)	105	328	32	46	119	28	35	36	49	12	24	18
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	114	357	35	50	129	30	38	39	53	13	26	20
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	146	509	50	80	341	77	481	505	429	201	404	312
Arrive On Green	0.08	0.16	0.16	0.04	0.12	0.12	0.27	0.27	0.27	0.26	0.26	0.26
Sat Flow, veh/h	1774	3259	318	1774	2868	649	1774	1863	1583	763	1531	1184
Grp Volume(v), veh/h	114	193	199	50	78	81	38	39	53	31	0	28
Grp Sat Flow(s),veh/h/ln	1774	1770	1807	1774	1770	1748	1774	1863	1583	1825	0	1654
Q Serve(g_s), s	4.3	7.0	7.1	1.9	2.8	2.9	1.1	1.1	1.7	0.9	0.0	0.9
Cycle Q Clear(g_c), s	4.3	7.0	7.1	1.9	2.8	2.9	1.1	1.1	1.7	0.9	0.0	0.9
Prop In Lane	1.00		0.18	1.00		0.37	1.00		1.00	0.42		0.72
Lane Grp Cap(c), veh/h	146	276	282	80	211	208	481	505	429	481	0	436
V/C Ratio(X)	0.78	0.70	0.71	0.63	0.37	0.39	0.08	0.08	0.12	0.06	0.00	0.06
Avail Cap(c_a), veh/h	195	493	503	169	467	461	481	505	429	481	0	436
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	0.00	1.00
Uniform Delay (d), s/veh	30.7	27.3	27.3	32.0	27.7	27.8	18.5	18.5	18.7	18.8	0.0	18.8
Incr Delay (d2), s/veh	13.6	3.2	3.2	7.9	1.1	1.2	0.3	0.3	0.6	0.3	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	3.7	3.8	1.1	1.4	1.5	0.6	0.6	0.8	0.5	0.0	0.4
LnGrp Delay(d),s/veh	44.4	30.4	30.5	39.9	28.8	28.9	18.8	18.8	19.3	19.1	0.0	19.1
LnGrp LOS	D	C	C	D	C	C	B	B	B	B		B
Approach Vol, veh/h		506			209			130			59	
Approach Delay, s/veh		33.6			31.5			19.0			19.1	
Approach LOS		C			C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		23.0	7.6	15.2		22.5	10.1	12.6				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.5	6.5	19.0		18.0	7.5	18.0				
Max Q Clear Time (g_c+I1), s		3.7	3.9	9.1		2.9	6.3	4.9				
Green Ext Time (p_c), s		0.3	0.0	1.5		0.2	0.0	0.6				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			30.1									
HCM 2010 LOS			C									
<b>Notes</b>												

HCM 2010 Signalized Intersection Summary  
 10: US-101 NB Ramps & Airport Blvd

04/09/2020

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Traffic Volume (veh/h)	103	11	944	117	176	633		
Future Volume (veh/h)	103	11	944	117	176	633		
Number	4	14	3	8	5	12		
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		
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863		
Adj Flow Rate, veh/h	112	12	1117	0	191	688		
Adj No. of Lanes	2	0	2	1	1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	240	25	1360	714	550	1097		
Arrive On Green	0.07	0.07	0.38	0.00	0.31	0.31		
Sat Flow, veh/h	3324	341	3548	1863	1774	1583		
Grp Volume(v), veh/h	61	63	1117	0	191	688		
Grp Sat Flow(s),veh/h/ln	1770	1802	1774	1863	1774	1583		
Q Serve(g_s), s	1.9	2.0	16.5	0.0	4.8	13.7		
Cycle Q Clear(g_c), s	1.9	2.0	16.5	0.0	4.8	13.7		
Prop In Lane		0.19	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	132	134	1360	714	550	1097		
V/C Ratio(X)	0.46	0.47	0.82	0.00	0.35	0.63		
Avail Cap(c_a), veh/h	548	559	1863	978	550	1097		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00		
Uniform Delay (d), s/veh	25.8	25.8	16.1	0.0	15.5	4.8		
Incr Delay (d2), s/veh	2.5	2.6	2.2	0.0	1.7	2.7		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.0	1.1	8.3	0.0	2.6	11.7		
LnGrp Delay(d),s/veh	28.3	28.3	18.3	0.0	17.2	7.5		
LnGrp LOS	C	C	B		B	A		
Approach Vol, veh/h	124			1117	879			
Approach Delay, s/veh	28.3			18.3	9.7			
Approach LOS	C			B	A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		22.5		8.8				26.8
Change Period (Y+Rc), s		4.5		4.5				4.5
Max Green Setting (Gmax), s		18.0		18.0				30.5
Max Q Clear Time (g_c+I1), s		15.7		4.0				18.5
Green Ext Time (p_c), s		0.9		0.4				3.8
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			15.3					
HCM 2010 LOS			B					
<b>Notes</b>								

# HCM Signalized Intersection Capacity Analysis

## 11: Peninsula Ave & N. Bayshore Blvd

04/09/2020



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	277	174	915	198	48	684
Future Volume (vph)	277	174	915	198	48	684
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3445		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3445		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	301	189	995	215	52	743
RTOR Reduction (vph)	0	143	26	0	0	0
Lane Group Flow (vph)	301	46	1184	0	52	743
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8				1	6
Permitted Phases		8	2			
Actuated Green, G (s)	14.0	14.0	27.5		2.9	34.9
Effective Green, g (s)	14.0	14.0	27.5		2.9	34.9
Actuated g/C Ratio	0.24	0.24	0.47		0.05	0.60
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	427	382	1636		88	2133
v/s Ratio Prot	c0.17				0.03	c0.21
v/s Ratio Perm		0.03	c0.34			
v/c Ratio	0.70	0.12	0.72		0.59	0.35
Uniform Delay, d1	20.1	17.1	12.2		26.9	5.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	5.2	0.1	2.8		10.2	0.5
Delay (s)	25.3	17.3	15.0		37.1	6.2
Level of Service	C	B	B		D	A
Approach Delay (s)	22.2		15.0			8.3
Approach LOS	C		B			A

### Intersection Summary

HCM 2000 Control Delay	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	57.9	Sum of lost time (s)	13.5
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

# HCM Signalized Intersection Capacity Analysis

## 12: Peninsula Ave/Coyote Point Dr & Airport Blvd

04/09/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	16	719	1054	35	13	7
Future Volume (vph)	16	719	1054	35	13	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	3433	1863	1863	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	3433	1863	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	782	1146	38	14	8
RTOR Reduction (vph)	0	320	0	0	0	6
Lane Group Flow (vph)	17	462	1146	38	14	2
Turn Type	Perm	pt+ov	Prot	NA	NA	Perm
Protected Phases		4 5	5	2	6	
Permitted Phases	4					6
Actuated Green, G (s)	9.0	42.0	28.5	53.1	20.1	20.1
Effective Green, g (s)	9.0	42.0	28.5	53.1	20.1	20.1
Actuated g/C Ratio	0.13	0.59	0.40	0.75	0.28	0.28
Clearance Time (s)	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	224	935	1376	1391	526	447
v/s Ratio Prot		c0.29	c0.33	c0.02	0.01	
v/s Ratio Perm	0.01					0.00
v/c Ratio	0.08	0.49	0.83	0.03	0.03	0.01
Uniform Delay, d1	27.4	8.4	19.2	2.3	18.4	18.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.4	4.5	0.0	0.1	0.0
Delay (s)	27.5	8.8	23.6	2.4	18.5	18.3
Level of Service	C	A	C	A	B	B
Approach Delay (s)	9.2			23.0	18.5	
Approach LOS	A			C	B	

### Intersection Summary

HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	71.1	Sum of lost time (s)	13.5
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection						
Int Delay, s/veh	2.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↖	↑↑	↗	
Traffic Vol, veh/h	353	20	0	124	102	0
Future Vol, veh/h	353	20	0	124	102	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	-	-	160	-	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	384	22	0	135	111	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	406	0	463
Stage 1	-	-	-	-	395
Stage 2	-	-	-	-	68
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	1149	-	528
Stage 1	-	-	-	-	650
Stage 2	-	-	-	-	947
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1149	-	528
Mov Cap-2 Maneuver	-	-	-	-	528
Stage 1	-	-	-	-	650
Stage 2	-	-	-	-	947

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	528	-	-	1149	-
HCM Lane V/C Ratio	0.21	-	-	-	-
HCM Control Delay (s)	13.6	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.8	-	-	0	-

Intersection						
Int Delay, s/veh	1.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑	
Traffic Vol, veh/h	353	0	13	124	0	68
Future Vol, veh/h	353	0	13	124	0	68
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	384	0	14	135	0	74

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	384	0	480
Stage 1	-	-	-	-	384
Stage 2	-	-	-	-	96
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	1171	-	515
Stage 1	-	-	-	-	658
Stage 2	-	-	-	-	917
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1171	-	508
Mov Cap-2 Maneuver	-	-	-	-	508
Stage 1	-	-	-	-	658
Stage 2	-	-	-	-	905

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	9.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	817	-	-	1171	-
HCM Lane V/C Ratio	0.09	-	-	0.012	-
HCM Control Delay (s)	9.8	-	-	8.1	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-























HCM 2010 Signalized Intersection Summary  
 3: Broadway/Airport Blvd & Old Bayshore Hwy

PM Peak  
 04/09/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷	↶↷		↶↷		↶↷	↶↷		↶	↶↷	↶
Traffic Volume (veh/h)	149	12	785	7	16	7	746	270	14	4	155	140
Future Volume (veh/h)	149	12	785	7	16	7	746	270	14	4	155	140
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	171	0	853	8	17	8	811	293	15	4	168	152
Adj No. of Lanes	2	0	2	0	2	0	2	2	0	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	828	0	1491	28	61	29	818	1657	84	9	889	398
Arrive On Green	0.23	0.00	0.23	0.03	0.03	0.03	0.24	0.48	0.48	0.01	0.25	0.25
Sat Flow, veh/h	3548	0	3167	841	1817	872	3442	3427	175	1774	3539	1583
Grp Volume(v), veh/h	171	0	853	17	0	16	811	151	157	4	168	152
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1821	0	1709	1721	1770	1832	1774	1770	1583
Q Serve(g_s), s	2.9	0.0	14.4	0.7	0.0	0.7	17.3	3.5	3.6	0.2	2.7	5.9
Cycle Q Clear(g_c), s	2.9	0.0	14.4	0.7	0.0	0.7	17.3	3.5	3.6	0.2	2.7	5.9
Prop In Lane	1.00		1.00	0.46		0.51	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	828	0	1491	61	0	57	818	856	886	9	889	398
V/C Ratio(X)	0.21	0.00	0.57	0.29	0.00	0.28	0.99	0.18	0.18	0.42	0.19	0.38
Avail Cap(c_a), veh/h	867	0	1527	445	0	418	818	856	886	120	889	398
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.7	0.0	14.1	34.7	0.0	34.7	28.0	10.7	10.7	36.5	21.7	22.8
Incr Delay (d2), s/veh	0.1	0.0	0.5	2.5	0.0	2.6	29.3	0.4	0.4	27.2	0.5	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	1.4	0.0	6.3	0.4	0.0	0.4	11.4	1.8	1.9	0.2	1.4	2.8
LnGrp Delay(d),s/veh	22.9	0.0	14.6	37.3	0.0	37.3	57.3	11.2	11.2	63.7	22.1	25.6
LnGrp LOS	C		B	D		D	E	B	B	E	C	C
Approach Vol, veh/h		1024			33			1119			324	
Approach Delay, s/veh		16.0			37.3			44.6			24.3	
Approach LOS		B			D			D			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.9	40.1		21.7	22.0	23.0		7.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	31.0		18.0	17.5	18.5		18.0				
Max Q Clear Time (g_c+I1), s	2.2	5.6		16.4	19.3	7.9		2.7				
Green Ext Time (p_c), s	0.0	1.7		0.8	0.0	1.1		0.1				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			30.1									
HCM 2010 LOS			C									
<b>Notes</b>												



















HCM 2010 Signalized Intersection Summary  
4: Broadway & California Dr

PM Peak  
04/09/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	303	330	31	37	393	375	10	244	47	270	400	406
Future Volume (veh/h)	303	330	31	37	393	375	10	244	47	270	400	406
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	329	359	34	40	427	0	11	265	51	293	435	0
Adj No. of Lanes	2	1	0	1	2	1	1	2	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	417	414	39	67	579	259	364	833	158	336	989	841
Arrive On Green	0.12	0.25	0.25	0.04	0.16	0.00	0.28	0.28	0.28	0.19	0.53	0.00
Sat Flow, veh/h	3442	1676	159	1774	3539	1583	950	2970	563	1774	1863	1583
Grp Volume(v), veh/h	329	0	393	40	427	0	11	156	160	293	435	0
Grp Sat Flow(s),veh/h/ln	1721	0	1835	1774	1770	1583	950	1770	1763	1774	1863	1583
Q Serve(g_s), s	6.8	0.0	15.1	1.6	8.4	0.0	0.6	5.1	5.3	11.8	10.5	0.0
Cycle Q Clear(g_c), s	6.8	0.0	15.1	1.6	8.4	0.0	0.6	5.1	5.3	11.8	10.5	0.0
Prop In Lane	1.00		0.09	1.00		1.00	1.00		0.32	1.00		1.00
Lane Grp Cap(c), veh/h	417	0	453	67	579	259	364	496	495	336	989	841
V/C Ratio(X)	0.79	0.00	0.87	0.59	0.74	0.00	0.03	0.31	0.32	0.87	0.44	0.00
Avail Cap(c_a), veh/h	445	0	560	123	868	388	364	496	495	375	989	841
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	31.3	0.0	26.5	34.8	29.2	0.0	19.2	20.8	20.9	28.9	10.5	0.0
Incr Delay (d2), s/veh	8.7	0.0	11.6	8.1	1.9	0.0	0.2	1.7	1.7	18.3	1.4	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	3.7	0.0	9.1	1.0	4.2	0.0	0.2	2.7	2.8	7.5	5.7	0.0
LnGrp Delay(d),s/veh	40.1	0.0	38.1	42.8	31.0	0.0	19.4	22.5	22.6	47.2	11.9	0.0
LnGrp LOS	D		D	D	C		B	C	C	D	B	
Approach Vol, veh/h		722			467			327			728	
Approach Delay, s/veh		39.0			32.1			22.5			26.1	
Approach LOS		D			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s	18.4	25.1	7.3	22.6		43.5	13.4	16.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s	15.5	19.0	5.1	22.4		39.0	9.5	18.0				
Max Q Clear Time (g_c+1), s	13.8	7.3	3.6	17.1		12.5	8.8	10.4				
Green Ext Time (p_c), s	0.2	1.4	0.0	1.1		2.7	0.1	1.6				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			31.0									
HCM 2010 LOS			C									

























HCM 2010 Signalized Intersection Summary  
5: Broadway & Carolan Dr

PM Peak  
04/09/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	39	0	239	1	825	96	182	1036	1
Future Volume (veh/h)	0	0	0	39	0	239	1	825	96	182	1036	1
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln				1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h				42	0	260	1	897	104	198	1126	1
Adj No. of Lanes				0	1	1	1	3	0	1	3	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	2	2	2	2
Cap, veh/h				362	0	324	335	1847	213	249	3281	3
Arrive On Green				0.20	0.00	0.20	0.40	0.40	0.40	0.14	0.63	0.63
Sat Flow, veh/h				1774	0	1583	498	4624	534	1774	5247	5
Grp Volume(v), veh/h				42	0	260	1	657	344	198	727	400
Grp Sat Flow(s),veh/h/ln				1774	0	1583	498	1695	1768	1774	1695	1862
Q Serve(g_s), s				1.0	0.0	8.3	0.1	7.6	7.7	5.7	5.4	5.4
Cycle Q Clear(g_c), s				1.0	0.0	8.3	0.1	7.6	7.7	5.7	5.4	5.4
Prop In Lane				1.00		1.00	1.00		0.30	1.00		0.00
Lane Grp Cap(c), veh/h				362	0	324	335	1354	707	249	2119	1164
V/C Ratio(X)				0.12	0.00	0.80	0.00	0.48	0.49	0.79	0.34	0.34
Avail Cap(c_a), veh/h				605	0	540	335	1354	707	353	2119	1164
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh				17.1	0.0	20.0	9.5	11.8	11.8	22.0	4.7	4.7
Incr Delay (d2), s/veh				0.1	0.0	4.7	0.0	1.2	2.4	8.0	0.4	0.8
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				0.5	0.0	4.0	0.0	3.8	4.2	3.3	2.6	2.9
LnGrp Delay(d),s/veh				17.3	0.0	24.7	9.6	13.0	14.2	30.0	5.2	5.5
LnGrp LOS				B		C	A	B	B	C	A	A
Approach Vol, veh/h					302			1002			1325	
Approach Delay, s/veh					23.6			13.4			9.0	
Approach LOS					C			B			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	11.9	25.6				37.5		15.3				
Change Period (Y+Rc), s	4.5	4.5				4.5		4.5				
Max Green Setting (Gmax), s	10.5	18.0				33.0		18.0				
Max Q Clear Time (g_c+I1), s	7.7	9.7				7.4		10.3				
Green Ext Time (p_c), s	0.1	4.0				8.2		0.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				12.4								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary  
 6: Broadway & Rollins Rd

PM Peak  
 04/09/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	330	204	172	42	67	168	131	891	42	398	1005	105
Future Volume (veh/h)	330	204	172	42	67	168	131	891	42	398	1005	105
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	359	222	187	46	73	0	142	968	46	433	1092	0
Adj No. of Lanes	2	1	1	1	1	1	2	3	0	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	471	327	278	79	155	132	260	1602	76	544	2058	641
Arrive On Green	0.14	0.18	0.18	0.04	0.08	0.00	0.08	0.32	0.32	0.16	0.40	0.00
Sat Flow, veh/h	3442	1863	1583	1774	1863	1583	3442	4975	236	3442	5085	1583
Grp Volume(v), veh/h	359	222	187	46	73	0	142	659	355	433	1092	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	1863	1583	1721	1695	1821	1721	1695	1583
Q Serve(g_s), s	6.0	6.7	6.6	1.5	2.2	0.0	2.4	9.8	9.9	7.3	9.8	0.0
Cycle Q Clear(g_c), s	6.0	6.7	6.6	1.5	2.2	0.0	2.4	9.8	9.9	7.3	9.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.13	1.00		1.00
Lane Grp Cap(c), veh/h	471	327	278	79	155	132	260	1091	586	544	2058	641
V/C Ratio(X)	0.76	0.68	0.67	0.58	0.47	0.00	0.55	0.60	0.61	0.80	0.53	0.00
Avail Cap(c_a), veh/h	544	661	562	183	558	475	298	1091	586	602	2058	641
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	25.0	23.2	23.1	28.1	26.3	0.0	26.8	17.1	17.1	24.3	13.6	0.0
Incr Delay (d2), s/veh	5.4	2.5	2.8	6.6	2.2	0.0	1.8	2.5	4.6	6.7	1.0	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	3.2	3.7	3.1	0.9	1.3	0.0	1.2	5.0	5.7	3.9	4.7	0.0
LnGrp Delay(d),s/veh	30.4	25.6	26.0	34.7	28.5	0.0	28.6	19.6	21.7	31.1	14.5	0.0
LnGrp LOS	C	C	C	C	C		C	B	C	C	B	
Approach Vol, veh/h		768			119			1156			1525	
Approach Delay, s/veh		27.9			30.9			21.4			19.2	
Approach LOS		C			C			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.0	23.8	7.2	15.0	9.0	28.8	12.7	9.5				
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	10.5	19.0	6.2	21.3	5.2	24.3	9.5	18.0				
Max Q Clear Time (g_c+1), s	9.3	11.9	3.5	8.7	4.4	11.8	8.0	4.2				
Green Ext Time (p_c), s	0.2	3.6	0.0	1.5	0.0	5.9	0.2	0.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			22.2									
HCM 2010 LOS			C									

HCM Signalized Intersection Capacity Analysis  
 7: Broadway & US-101 SB Ramps

PM Peak  
 04/09/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	156	0	940	0	0	0	0	842	547	379	568	0
Future Volume (vph)	156	0	940	0	0	0	0	842	547	379	568	0
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	
Lane Util. Factor		1.00	0.76					0.86	0.86	0.97	0.95	
Frt		1.00	0.85					0.97	0.85	1.00	1.00	
Flt Protected		0.95	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1770	3610					4651	1362	3433	3539	
Flt Permitted		0.95	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1770	3610					4651	1362	3433	3539	
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)	170	0	1022	0	0	0	0	915	595	412	617	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	63	243	0	0	0
Lane Group Flow (vph)	0	170	1022	0	0	0	0	1102	102	412	617	0
Turn Type	Split	NA	custom					NA	Perm	Split	NA	
Protected Phases	7	7	2 7					2		6	6	
Permitted Phases									2			
Actuated Green, G (s)		17.2	42.1					20.4	20.4	18.1	18.1	
Effective Green, g (s)		17.2	42.1					20.4	20.4	18.1	18.1	
Actuated g/C Ratio		0.25	0.61					0.29	0.29	0.26	0.26	
Clearance Time (s)		4.5						4.5	4.5	4.5	4.5	
Vehicle Extension (s)		3.0						3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		439	2196					1371	401	897	925	
v/s Ratio Prot		0.10	c0.28					c0.24		0.12	c0.17	
v/s Ratio Perm									0.07			
v/c Ratio		0.39	0.47					0.80	0.25	0.46	0.67	
Uniform Delay, d1		21.6	7.4					22.5	18.6	21.4	22.9	
Progression Factor		1.00	1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.6	0.2					5.1	1.5	1.7	3.8	
Delay (s)		22.2	7.6					27.6	20.1	23.1	26.7	
Level of Service		C	A					C	C	C	C	
Approach Delay (s)		9.6			0.0			25.9			25.2	
Approach LOS		A			A			C			C	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			20.5									HCM 2000 Level of Service C
HCM 2000 Volume to Capacity ratio			0.67									
Actuated Cycle Length (s)			69.2									Sum of lost time (s) 13.5
Intersection Capacity Utilization			53.3%									ICU Level of Service A
Analysis Period (min)			15									

c Critical Lane Group

# HCM 2010 Signalized Intersection Summary

## 8: US-101 NB Ramp & Old Bayshore Hwy

PM Peak  
04/09/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	572	174	664	220	18	137	4	357	17	11	5
Future Volume (veh/h)	12	572	174	664	220	18	137	4	357	17	11	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	13	622	189	722	239	20	101	0	442	18	12	5
Adj No. of Lanes	1	2	1	2	2	0	1	0	2	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	28	779	348	820	1463	122	450	0	802	32	21	9
Arrive On Green	0.02	0.22	0.22	0.24	0.44	0.44	0.25	0.00	0.25	0.04	0.04	0.04
Sat Flow, veh/h	1774	3539	1583	3442	3309	275	1774	0	3167	912	608	253
Grp Volume(v), veh/h	13	622	189	722	127	132	101	0	442	35	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1721	1770	1814	1774	0	1583	1772	0	0
Q Serve(g_s), s	0.5	11.8	7.5	14.4	3.1	3.1	3.2	0.0	8.6	1.4	0.0	0.0
Cycle Q Clear(g_c), s	0.5	11.8	7.5	14.4	3.1	3.1	3.2	0.0	8.6	1.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.15	1.00		1.00	0.51		0.14
Lane Grp Cap(c), veh/h	28	779	348	820	783	802	450	0	802	62	0	0
V/C Ratio(X)	0.46	0.80	0.54	0.88	0.16	0.16	0.22	0.00	0.55	0.56	0.00	0.00
Avail Cap(c_a), veh/h	125	897	401	872	783	802	450	0	802	449	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	34.7	26.2	24.5	26.1	11.9	11.9	21.0	0.0	23.0	33.7	0.0	0.0
Incr Delay (d2), s/veh	11.2	4.5	1.3	10.0	0.1	0.1	1.2	0.0	2.7	7.7	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	0.3	6.3	3.4	8.0	1.5	1.6	1.7	0.0	4.0	0.8	0.0	0.0
LnGrp Delay(d),s/veh	45.9	30.8	25.9	36.1	12.0	12.0	22.2	0.0	25.7	41.5	0.0	0.0
LnGrp LOS	D	C	C	D	B	B	C		C	D		
Approach Vol, veh/h		824			981			543			35	
Approach Delay, s/veh		29.9			29.7			25.1			41.5	
Approach LOS		C			C			C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		22.5	21.4	20.1		7.0	5.6	35.9				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.0	18.0	18.0		18.0	5.0	31.0				
Max Q Clear Time (g_c+I1), s		10.6	16.4	13.8		3.4	2.5	5.1				
Green Ext Time (p_c), s		1.3	0.5	1.8		0.1	0.0	1.4				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				28.9								
HCM 2010 LOS				C								
<b>Notes</b>												

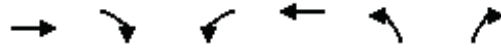
# HCM 2010 Signalized Intersection Summary 9: Anza Blvd & Airport Blvd

PM Peak  
04/09/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↖↗		↙	↖↗		↙	↖	↗		↖↗	
Traffic Volume (veh/h)	46	300	25	145	165	20	39	24	22	51	58	47
Future Volume (veh/h)	46	300	25	145	165	20	39	24	22	51	58	47
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	50	326	27	158	179	22	34	37	24	55	63	51
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	78	464	38	194	654	79	445	468	397	277	324	268
Arrive On Green	0.04	0.14	0.14	0.11	0.21	0.21	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1774	3311	273	1774	3179	386	1774	1863	1583	1110	1296	1074
Grp Volume(v), veh/h	50	173	180	158	99	102	34	37	24	90	0	79
Grp Sat Flow(s),veh/h/ln	1774	1770	1815	1774	1770	1795	1774	1863	1583	1807	0	1673
Q Serve(g_s), s	2.0	6.7	6.8	6.3	3.4	3.5	1.1	1.1	0.8	2.8	0.0	2.7
Cycle Q Clear(g_c), s	2.0	6.7	6.8	6.3	3.4	3.5	1.1	1.1	0.8	2.8	0.0	2.7
Prop In Lane	1.00		0.15	1.00		0.21	1.00		1.00	0.61		0.64
Lane Grp Cap(c), veh/h	78	248	254	194	364	369	445	468	397	451	0	418
V/C Ratio(X)	0.64	0.70	0.71	0.81	0.27	0.28	0.08	0.08	0.06	0.20	0.00	0.19
Avail Cap(c_a), veh/h	160	442	453	194	476	483	445	468	397	451	0	418
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(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.9	29.6	29.6	31.4	24.1	24.1	20.6	20.6	20.5	21.4	0.0	21.3
Incr Delay (d2), s/veh	8.5	3.6	3.6	22.4	0.4	0.4	0.3	0.3	0.3	1.0	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	3.5	3.6	4.3	1.7	1.7	0.6	0.6	0.4	1.5	0.0	1.4
LnGrp Delay(d),s/veh	42.4	33.1	33.2	53.8	24.5	24.5	21.0	21.0	20.8	22.3	0.0	22.3
LnGrp LOS	D	C	C	D	C	C	C	C	C	C		C
Approach Vol, veh/h		403			359			95			169	
Approach Delay, s/veh		34.3			37.4			20.9			22.3	
Approach LOS		C			D			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		22.6	12.4	14.6		22.5	7.7	19.3				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.1	7.9	18.0		18.0	6.5	19.4				
Max Q Clear Time (g_c+I1), s		3.1	8.3	8.8		4.8	4.0	5.5				
Green Ext Time (p_c), s		0.2	0.0	1.3		0.7	0.0	0.8				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			32.2									
HCM 2010 LOS			C									
<b>Notes</b>												

HCM 2010 Signalized Intersection Summary  
 10: US-101 NB Ramps & Airport Blvd

PM Peak  
 04/09/2020



Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Traffic Volume (veh/h)	281	28	625	77	60	440		
Future Volume (veh/h)	281	28	625	77	60	440		
Number	4	14	3	8	5	12		
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		
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863		
Adj Flow Rate, veh/h	305	30	739	0	65	478		
Adj No. of Lanes	2	0	2	1	1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	488	48	943	495	592	950		
Arrive On Green	0.15	0.15	0.27	0.00	0.33	0.33		
Sat Flow, veh/h	3351	318	3548	1863	1774	1583		
Grp Volume(v), veh/h	165	170	739	0	65	478		
Grp Sat Flow(s),veh/h/ln	1770	1807	1774	1863	1774	1583		
Q Serve(g_s), s	4.7	4.8	10.4	0.0	1.4	9.3		
Cycle Q Clear(g_c), s	4.7	4.8	10.4	0.0	1.4	9.3		
Prop In Lane		0.18	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	265	271	943	495	592	950		
V/C Ratio(X)	0.62	0.63	0.78	0.00	0.11	0.50		
Avail Cap(c_a), veh/h	591	603	1349	708	592	950		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00		
Uniform Delay (d), s/veh	21.5	21.5	18.4	0.0	12.4	6.2		
Incr Delay (d2), s/veh	2.4	2.4	2.0	0.0	0.4	1.9		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.5	2.5	5.3	0.0	0.7	7.3		
LnGrp Delay(d),s/veh	23.9	23.9	20.3	0.0	12.8	8.1		
LnGrp LOS	C	C	C		B	A		
Approach Vol, veh/h	335			739	543			
Approach Delay, s/veh	23.9			20.3	8.7			
Approach LOS	C			C	A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		22.5		12.6				18.8
Change Period (Y+Rc), s		4.5		4.5				4.5
Max Green Setting (Gmax), s		18.0		18.0				20.5
Max Q Clear Time (g_c+I1), s		11.3		6.8				12.4
Green Ext Time (p_c), s		1.2		1.4				1.9
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			17.1					
HCM 2010 LOS			B					
<b>Notes</b>								

# HCM Signalized Intersection Capacity Analysis

## 11: Peninsula Ave & N. Bayshore Blvd

PM Peak  
04/09/2020



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	246	79	604	331	162	581
Future Volume (vph)	246	79	604	331	162	581
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	0.95		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3351		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3351		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	267	86	657	360	176	632
RTOR Reduction (vph)	0	65	117	0	0	0
Lane Group Flow (vph)	267	21	900	0	176	632
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8				1	6
Permitted Phases		8	2			
Actuated Green, G (s)	13.2	13.2	20.4		8.2	33.1
Effective Green, g (s)	13.2	13.2	20.4		8.2	33.1
Actuated g/C Ratio	0.24	0.24	0.37		0.15	0.60
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	422	377	1236		262	2118
v/s Ratio Prot	c0.15				c0.10	0.18
v/s Ratio Perm		0.01	c0.27			
v/c Ratio	0.63	0.05	0.73		0.67	0.30
Uniform Delay, d1	18.9	16.2	15.1		22.3	5.4
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.1	0.1	3.8		6.6	0.4
Delay (s)	22.0	16.3	18.8		28.9	5.8
Level of Service	C	B	B		C	A
Approach Delay (s)	20.6		18.8			10.8
Approach LOS	C		B			B

### Intersection Summary

HCM 2000 Control Delay	16.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	55.3	Sum of lost time (s)	13.5
Intersection Capacity Utilization	61.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 12: Peninsula Ave/Coyote Point Dr & Airport Blvd

PM Peak  
 04/09/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	75	646	655	38	97	26
Future Volume (vph)	75	646	655	38	97	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	3433	1863	1863	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	3433	1863	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	702	712	41	105	28
RTOR Reduction (vph)	0	327	0	0	0	18
Lane Group Flow (vph)	82	375	712	41	105	10
Turn Type	Perm	pt+ov	Prot	NA	NA	Perm
Protected Phases		4 5	5	2	6	
Permitted Phases	4					6
Actuated Green, G (s)	10.0	31.7	17.2	42.7	21.0	21.0
Effective Green, g (s)	10.0	31.7	17.2	42.7	21.0	21.0
Actuated g/C Ratio	0.16	0.51	0.28	0.69	0.34	0.34
Clearance Time (s)	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	286	813	957	1289	634	538
v/s Ratio Prot		c0.24	c0.21	0.02	c0.06	
v/s Ratio Perm	0.05					0.01
v/c Ratio	0.29	0.46	0.74	0.03	0.17	0.02
Uniform Delay, d1	22.7	9.6	20.2	3.0	14.2	13.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.4	3.2	0.0	0.6	0.1
Delay (s)	23.3	10.0	23.4	3.0	14.8	13.6
Level of Service	C	A	C	A	B	B
Approach Delay (s)	11.4			22.3	14.5	
Approach LOS	B			C	B	

Intersection Summary

HCM 2000 Control Delay	16.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	61.7	Sum of lost time (s)	13.5
Intersection Capacity Utilization	52.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

# Queues

## 3: Broadway/Airport Blvd & Old Bayshore Hwy

04/09/2020



Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	43	42	629	38	1252	440	4	90	111
v/c Ratio	0.24	0.23	0.34	0.15	0.83	0.18	0.04	0.12	0.24
Control Delay	39.5	39.3	1.0	35.7	28.8	6.7	43.0	30.1	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0
Total Delay	39.5	39.3	1.0	35.7	29.1	6.7	43.0	30.1	3.9
Queue Length 50th (ft)	24	23	0	8	327	42	2	22	0
Queue Length 95th (ft)	57	55	14	25	#511	98	13	45	24
Internal Link Dist (ft)		573		269		426		518	
Turn Bay Length (ft)	360						210		115
Base Capacity (vph)	355	360	1957	718	1514	2435	104	770	460
Starvation Cap Reductn	0	0	0	0	40	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.12	0.32	0.05	0.85	0.18	0.04	0.12	0.24

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 4: Broadway & California Dr

04/09/2020



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	436	386	48	411	482	3	481	275	288	382
v/c Ratio	0.86	0.62	0.41	0.58	0.74	0.01	0.56	0.90	0.32	0.40
Control Delay	51.2	27.9	47.0	31.5	12.9	23.7	28.5	65.1	14.4	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.3	5.1	1.4
Total Delay	51.2	27.9	47.0	31.5	12.9	23.7	28.5	115.4	19.5	4.4
Queue Length 50th (ft)	109	166	23	95	26	1	107	134	85	2
Queue Length 95th (ft)	#191	263	57	140	125	8	158	#277	143	47
Internal Link Dist (ft)		329		578			73		137	
Turn Bay Length (ft)	225		95		350	50				
Base Capacity (vph)	509	625	116	821	688	265	865	307	888	951
Starvation Cap Reductn	0	0	0	0	0	0	0	60	525	369
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.62	0.41	0.50	0.70	0.01	0.56	1.11	0.79	0.66

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 5: Broadway & Carolan Dr

04/09/2020



Lane Group	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	75	324	1370	112	870
v/c Ratio	0.25	0.63	0.58	0.46	0.26
Control Delay	19.7	9.7	12.4	27.7	4.5
Queue Delay	0.0	0.0	1.2	0.0	0.0
Total Delay	19.7	9.7	13.6	27.7	4.5
Queue Length 50th (ft)	20	7	102	30	27
Queue Length 95th (ft)	47	60	184	78	66
Internal Link Dist (ft)	312		137		329
Turn Bay Length (ft)		200		125	
Base Capacity (vph)	627	752	2350	261	3308
Starvation Cap Reductn	0	0	691	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.12	0.43	0.83	0.43	0.26

### Intersection Summary

# Queues

## 6: Broadway & Rollins Rd

04/09/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	160	62	107	114	199	384	203	1304	237	761	285
v/c Ratio	0.55	0.15	0.22	0.64	0.52	0.74	0.48	0.78	0.68	0.49	0.42
Control Delay	37.7	21.9	2.5	48.1	27.5	18.5	31.5	24.6	40.9	20.3	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.7	21.9	2.5	48.1	27.5	18.5	31.5	24.6	40.9	20.3	5.0
Queue Length 50th (ft)	31	20	0	43	69	49	38	163	46	87	0
Queue Length 95th (ft)	#69	48	14	#123	125	134	73	#253	#103	137	52
Internal Link Dist (ft)		340			251			329		336	
Turn Bay Length (ft)	130		110			160	90		200		155
Base Capacity (vph)	289	523	562	179	555	642	445	1665	348	1561	683
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.12	0.19	0.64	0.36	0.60	0.46	0.78	0.68	0.49	0.42

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 7: Broadway & US-101 SB Ramps

04/09/2020



Lane Group	EBT	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	395	749	1406	404	202	534
v/c Ratio	0.85	0.32	0.87	0.60	0.26	0.66
Control Delay	47.3	6.3	31.5	9.1	26.4	32.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.3	6.3	31.5	9.1	26.4	32.5
Queue Length 50th (ft)	186	60	249	31	42	128
Queue Length 95th (ft)	#333	82	#323	126	71	181
Internal Link Dist (ft)	446		336			426
Turn Bay Length (ft)		200		105		
Base Capacity (vph)	480	2368	1623	677	784	808
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.32	0.87	0.60	0.26	0.66

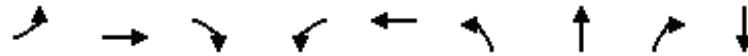
### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 8: US-101 NB Ramp & Old Bayshore Hwy

04/09/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	9	247	96	980	398	292	276	268	29
v/c Ratio	0.08	0.49	0.26	0.77	0.20	0.70	0.63	0.47	0.18
Control Delay	38.9	34.1	2.5	28.0	10.5	38.7	25.8	7.0	33.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.9	34.1	2.5	28.0	10.5	38.7	25.8	7.0	33.0
Queue Length 50th (ft)	4	52	0	177	35	116	73	0	10
Queue Length 95th (ft)	20	101	7	#385	103	#304	#224	65	38
Internal Link Dist (ft)		386			573		242		94
Turn Bay Length (ft)	205		170			130			
Base Capacity (vph)	118	855	507	1268	1975	417	441	575	434
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.29	0.19	0.77	0.20	0.70	0.63	0.47	0.07

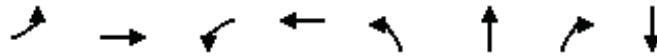
### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Queues

9: Anza Blvd & Airport Blvd

04/09/2020



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	114	392	50	159	34	43	53	59
v/c Ratio	0.63	0.54	0.32	0.27	0.08	0.09	0.10	0.07
Control Delay	50.3	28.1	39.0	22.7	23.3	23.4	0.4	17.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.3	28.1	39.0	22.7	23.3	23.4	0.4	17.1
Queue Length 50th (ft)	51	85	22	27	12	15	0	7
Queue Length 95th (ft)	#131	127	57	52	37	44	0	23
Internal Link Dist (ft)		477		433		347		50
Turn Bay Length (ft)	90		210					
Base Capacity (vph)	187	948	162	898	439	461	519	860
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.41	0.31	0.18	0.08	0.09	0.10	0.07

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 10: US-101 NB Ramps & Airport Blvd

04/09/2020



Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	124	575	578	191	688
v/c Ratio	0.30	0.78	0.77	0.39	0.50
Control Delay	28.0	26.0	25.6	24.4	1.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	28.0	26.0	25.6	24.4	1.9
Queue Length 50th (ft)	23	211	211	68	9
Queue Length 95th (ft)	47	#407	#405	128	35
Internal Link Dist (ft)	300		611	186	
Turn Bay Length (ft)				230	230
Base Capacity (vph)	975	790	800	491	1386
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.13	0.73	0.72	0.39	0.50

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 11: Peninsula Ave & N. Bayshore Blvd

04/09/2020



Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	301	189	1210	52	743
v/c Ratio	0.68	0.35	0.71	0.32	0.36
Control Delay	27.3	5.1	16.5	31.0	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	27.3	5.1	16.5	31.0	7.2
Queue Length 50th (ft)	90	0	175	17	60
Queue Length 95th (ft)	160	38	#324	48	104
Internal Link Dist (ft)	179		604		286
Turn Bay Length (ft)				100	
Base Capacity (vph)	573	640	1714	161	2083
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.53	0.30	0.71	0.32	0.36

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 12: Peninsula Ave/Coyote Point Dr & Airport Blvd

04/09/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	17	782	1146	38	14	8
v/c Ratio	0.08	0.62	0.83	0.03	0.03	0.02
Control Delay	26.6	2.9	26.7	3.5	21.8	13.3
Queue Delay	0.0	0.0	3.4	0.0	0.0	0.0
Total Delay	26.6	2.9	30.2	3.5	21.8	13.3
Queue Length 50th (ft)	7	0	206	3	4	0
Queue Length 95th (ft)	22	35	#400	15	20	11
Internal Link Dist (ft)	611			286	438	
Turn Bay Length (ft)			85			
Base Capacity (vph)	451	1267	1428	1389	525	452
Starvation Cap Reductn	0	0	194	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.62	0.93	0.03	0.03	0.02

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Queues  
3: Broadway/Airport Blvd & Old Bayshore Hwy

PM Peak  
03/31/2020



Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	87	88	853	33	811	308	4	168	152
v/c Ratio	0.28	0.28	0.47	0.10	0.88	0.15	0.03	0.17	0.26
Control Delay	26.6	26.5	1.5	26.8	39.7	9.0	34.0	21.2	4.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.6	26.5	1.5	26.8	39.7	9.0	34.0	21.2	4.1
Queue Length 50th (ft)	29	29	0	4	145	18	1	24	0
Queue Length 95th (ft)	76	77	18	19	#341	78	11	61	31
Internal Link Dist (ft)		573		269		426		518	
Turn Bay Length (ft)	360						210		115
Base Capacity (vph)	462	466	1827	932	917	2091	135	999	577
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.19	0.47	0.04	0.88	0.15	0.03	0.17	0.26

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

Queues  
4: Broadway & California Dr

PM Peak  
03/31/2020



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	329	393	40	427	408	11	316	293	435	441
v/c Ratio	0.79	0.69	0.34	0.60	0.63	0.05	0.35	0.86	0.46	0.46
Control Delay	48.7	32.0	44.3	31.9	8.0	24.3	24.0	56.8	15.1	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	54.9	23.7	2.5
Total Delay	48.7	32.0	44.3	31.9	8.0	24.3	24.0	111.6	38.8	8.3
Queue Length 50th (ft)	83	176	20	99	0	4	63	142	137	35
Queue Length 95th (ft)	#147	#306	50	145	71	17	100	#277	215	96
Internal Link Dist (ft)		329		578			73		137	
Turn Bay Length (ft)	225		95		350	50				
Base Capacity (vph)	420	574	116	821	680	239	891	353	936	949
Starvation Cap Reductn	0	0	0	0	0	0	0	94	502	374
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.68	0.34	0.52	0.60	0.05	0.35	1.13	1.00	0.77

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

Queues  
5: Broadway & Carolan Dr

PM Peak  
03/31/2020



Lane Group	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	42	260	1	1001	198	1127
v/c Ratio	0.16	0.56	0.01	0.52	0.58	0.33
Control Delay	19.1	8.4	12.0	13.2	26.3	4.2
Queue Delay	0.0	0.0	0.0	0.7	0.0	0.0
Total Delay	19.1	8.4	12.0	13.9	26.3	4.2
Queue Length 50th (ft)	11	0	0	74	50	35
Queue Length 95th (ft)	31	47	3	130	#117	78
Internal Link Dist (ft)	312			137		329
Turn Bay Length (ft)		200	40		125	
Base Capacity (vph)	643	741	171	1938	375	3387
Starvation Cap Reductn	0	0	0	558	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.35	0.01	0.73	0.53	0.33

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

Queues  
6: Broadway & Rollins Rd

PM Peak  
03/31/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	359	222	187	46	73	183	142	1014	433	1092	114
v/c Ratio	0.74	0.45	0.32	0.29	0.26	0.43	0.53	0.71	0.81	0.55	0.16
Control Delay	39.7	25.3	4.0	35.1	27.0	5.9	39.0	25.2	42.1	18.4	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.7	25.3	4.0	35.1	27.0	5.9	39.0	25.2	42.1	18.4	2.2
Queue Length 50th (ft)	73	84	0	18	27	0	29	133	89	129	0
Queue Length 95th (ft)	#147	145	33	51	60	33	#62	201	#178	195	19
Internal Link Dist (ft)		340			251			329		336	
Turn Bay Length (ft)	130		110			160	90		200		155
Base Capacity (vph)	486	592	651	163	500	584	266	1438	537	2001	716
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.38	0.29	0.28	0.15	0.31	0.53	0.71	0.81	0.55	0.16

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

Queues  
7: Broadway & US-101 SB Ramps

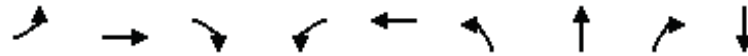
PM Peak  
03/31/2020



Lane Group	EBT	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	170	1022	1165	345	412	617
v/c Ratio	0.39	0.47	0.81	0.54	0.46	0.67
Control Delay	24.6	8.2	26.6	6.0	23.7	27.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.6	8.2	26.6	6.0	23.7	27.2
Queue Length 50th (ft)	60	92	166	0	76	125
Queue Length 95th (ft)	112	124	220	65	115	178
Internal Link Dist (ft)	446		336			426
Turn Bay Length (ft)		200		105		
Base Capacity (vph)	460	2188	1434	644	897	925
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.47	0.81	0.54	0.46	0.67
Intersection Summary						

Queues  
8: US-101 NB Ramp & Old Bayshore Hwy

PM Peak  
03/31/2020



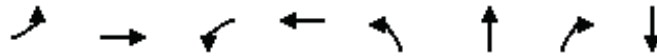
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	13	622	189	722	259	134	205	202	35
v/c Ratio	0.11	0.77	0.37	0.85	0.14	0.32	0.41	0.39	0.21
Control Delay	37.7	34.8	6.8	40.0	11.2	27.6	8.5	6.7	32.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.7	34.8	6.8	40.0	11.2	27.6	8.5	6.7	32.5
Queue Length 50th (ft)	6	151	0	178	31	57	7	0	14
Queue Length 95th (ft)	24	#223	50	#293	68	113	67	54	41
Internal Link Dist (ft)		386			573		242		94
Turn Bay Length (ft)	205		170			130			
Base Capacity (vph)	121	873	532	847	1804	414	500	523	443
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.71	0.36	0.85	0.14	0.32	0.41	0.39	0.08

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

Queues  
9: Anza Blvd & Airport Blvd

PM Peak  
03/31/2020



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	50	353	158	201	33	35	24	169
v/c Ratio	0.34	0.59	0.84	0.23	0.08	0.08	0.05	0.20
Control Delay	39.8	31.8	72.3	22.7	23.8	23.8	0.2	17.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.8	31.8	72.3	22.7	23.8	23.8	0.2	17.0
Queue Length 50th (ft)	22	77	73	38	12	13	0	22
Queue Length 95th (ft)	57	118	#188	66	36	38	0	50
Internal Link Dist (ft)		477		433		347		50
Turn Bay Length (ft)	90		210					
Base Capacity (vph)	154	851	187	974	407	423	492	840
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.41	0.84	0.21	0.08	0.08	0.05	0.20

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

Queues  
10: US-101 NB Ramps & Airport Blvd

PM Peak  
03/31/2020



Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	335	380	383	65	478
v/c Ratio	0.53	0.74	0.74	0.12	0.42
Control Delay	25.5	30.0	29.7	18.4	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	25.5	30.0	29.7	18.4	3.6
Queue Length 50th (ft)	59	131	131	18	28
Queue Length 95th (ft)	95	#268	#269	47	75
Internal Link Dist (ft)	300		611	186	
Turn Bay Length (ft)				230	230
Base Capacity (vph)	1040	564	572	522	1125
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.32	0.67	0.67	0.12	0.42

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

Queues  
11: Peninsula Ave & N. Bayshore Blvd

PM Peak  
03/31/2020



Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	267	86	1017	176	632
v/c Ratio	0.63	0.19	0.75	0.67	0.30
Control Delay	26.0	5.7	17.9	38.7	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	26.0	5.7	17.9	38.7	6.5
Queue Length 50th (ft)	79	0	122	56	46
Queue Length 95th (ft)	141	26	#228	#145	86
Internal Link Dist (ft)	179		604		286
Turn Bay Length (ft)				100	
Base Capacity (vph)	578	574	1351	272	2118
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.46	0.15	0.75	0.65	0.30

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

Queues

PM Peak

12: Peninsula Ave/Coyote Point Dr & Airport Blvd

03/31/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	82	702	712	41	105	28
v/c Ratio	0.29	0.62	0.74	0.03	0.17	0.05
Control Delay	24.6	3.5	26.5	4.3	17.6	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.6	3.5	26.5	4.3	17.6	7.9
Queue Length 50th (ft)	27	5	115	4	27	0
Queue Length 95th (ft)	59	44	#211	17	70	17
Internal Link Dist (ft)	611			286	438	
Turn Bay Length (ft)			85			
Base Capacity (vph)	532	1161	1033	1288	632	555
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.60	0.69	0.03	0.17	0.05

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

**Appendix C – Existing plus Project Conditions Intersections  
Level of Service & Queueing Worksheets**

Intersection						
Int Delay, s/veh	0.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↖	↑↑	↗	
Traffic Vol, veh/h	283	250	0	223	41	0
Future Vol, veh/h	283	250	0	223	41	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	-	-	160	-	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	308	272	0	242	45	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	580	0	565 290
Stage 1	-	-	-	-	444 -
Stage 2	-	-	-	-	121 -
Critical Hdwy	-	-	4.14	-	6.84 6.94
Critical Hdwy Stg 1	-	-	-	-	5.84 -
Critical Hdwy Stg 2	-	-	-	-	5.84 -
Follow-up Hdwy	-	-	2.22	-	3.52 3.32
Pot Cap-1 Maneuver	-	-	990	-	455 707
Stage 1	-	-	-	-	614 -
Stage 2	-	-	-	-	891 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	990	-	455 707
Mov Cap-2 Maneuver	-	-	-	-	455 -
Stage 1	-	-	-	-	614 -
Stage 2	-	-	-	-	891 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	455	-	-	990	-
HCM Lane V/C Ratio	0.098	-	-	-	-
HCM Control Delay (s)	13.8	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

HCM 2010 TWSC  
 2: Project Dwy E & Airport Blvd/Broadway

04/01/2020

Intersection						
Int Delay, s/veh	2.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑	
Traffic Vol, veh/h	283	0	165	223	0	27
Future Vol, veh/h	283	0	165	223	0	27
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	308	0	179	242	0	29






















Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	308	0	787
Stage 1	-	-	-	-	308
Stage 2	-	-	-	-	479
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	1249	-	329
Stage 1	-	-	-	-	719
Stage 2	-	-	-	-	589
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1249	-	274
Mov Cap-2 Maneuver	-	-	-	-	274
Stage 1	-	-	-	-	719
Stage 2	-	-	-	-	491

Approach	EB	WB	NB
HCM Control Delay, s	0	3.7	9.3
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	864	-	-	1249	-
HCM Lane V/C Ratio	0.034	-	-	0.144	-
HCM Control Delay (s)	9.3	-	-	8.4	0.3
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.5	-

HCM 2010 Signalized Intersection Summary  
 3: Broadway/Airport Blvd & Old Bayshore Hwy























04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	8	579	15	14	6	1152	437	16	4	91	108
Future Volume (veh/h)	106	8	579	15	14	6	1152	437	16	4	91	108
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	121	0	629	16	15	7	1252	475	17	4	99	117
Adj No. of Lanes	2	0	2	0	2	0	2	2	0	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	547	0	1744	49	49	23	1365	2097	75	9	744	333
Arrive On Green	0.15	0.00	0.15	0.03	0.03	0.03	0.40	0.60	0.60	0.01	0.21	0.21
Sat Flow, veh/h	3548	0	3167	1439	1421	675	3442	3486	125	1774	3539	1583
Grp Volume(v), veh/h	121	0	629	20	0	18	1252	241	251	4	99	117
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1791	0	1744	1721	1770	1841	1774	1770	1583
Q Serve(g_s), s	2.6	0.0	9.8	1.0	0.0	0.9	30.3	5.5	5.5	0.2	2.0	5.5
Cycle Q Clear(g_c), s	2.6	0.0	9.8	1.0	0.0	0.9	30.3	5.5	5.5	0.2	2.0	5.5
Prop In Lane	1.00		1.00	0.80		0.39	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	547	0	1744	62	0	60	1365	1065	1107	9	744	333
V/C Ratio(X)	0.22	0.00	0.36	0.32	0.00	0.30	0.92	0.23	0.23	0.43	0.13	0.35
Avail Cap(c_a), veh/h	726	0	1904	366	0	357	1467	1065	1107	101	744	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	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.6	0.0	11.1	41.5	0.0	41.4	25.2	8.1	8.1	43.6	28.2	29.6
Incr Delay (d2), s/veh	0.2	0.0	0.1	3.0	0.0	2.8	9.1	0.5	0.5	27.8	0.4	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	4.3	0.5	0.0	0.5	16.0	2.8	2.9	0.2	1.0	2.7
LnGrp Delay(d),s/veh	32.8	0.0	11.2	44.5	0.0	44.2	34.2	8.6	8.6	71.4	28.6	32.5
LnGrp LOS	C		B	D		D	C	A	A	E	C	C
Approach Vol, veh/h		750			38			1744			220	
Approach Delay, s/veh		14.7			44.3			27.0			31.4	
Approach LOS		B			D			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.0	57.4		18.1	39.4	23.0		7.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	51.0		18.0	37.5	18.5		18.0				
Max Q Clear Time (g_c+I1), s	2.2	7.5		11.8	32.3	7.5		3.0				
Green Ext Time (p_c), s	0.0	3.1		1.8	2.5	0.6		0.1				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			24.2									
HCM 2010 LOS			C									
<b>Notes</b>												

# HCM 2010 Signalized Intersection Summary




















## 4: Broadway & California Dr

04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	401	333	22	44	378	455	3	440	27	255	269	351
Future Volume (veh/h)	401	333	22	44	378	455	3	440	27	255	269	351
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	436	362	24	48	411	0	3	478	29	277	292	0
Adj No. of Lanes	2	1	0	1	2	1	1	2	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	522	463	31	75	563	252	385	897	54	318	941	800
Arrive On Green	0.15	0.27	0.27	0.04	0.16	0.00	0.26	0.26	0.26	0.18	0.51	0.00
Sat Flow, veh/h	3442	1728	115	1774	3539	1583	1083	3391	205	1774	1863	1583
Grp Volume(v), veh/h	436	0	386	48	411	0	3	249	258	277	292	0
Grp Sat Flow(s),veh/h/ln	1721	0	1843	1774	1770	1583	1083	1770	1827	1774	1863	1583
Q Serve(g_s), s	9.0	0.0	14.2	2.0	8.1	0.0	0.1	8.8	8.9	11.1	6.7	0.0
Cycle Q Clear(g_c), s	9.0	0.0	14.2	2.0	8.1	0.0	0.1	8.8	8.9	11.1	6.7	0.0
Prop In Lane	1.00		0.06	1.00		1.00	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	522	0	494	75	563	252	385	468	483	318	941	800
V/C Ratio(X)	0.84	0.00	0.78	0.64	0.73	0.00	0.01	0.53	0.53	0.87	0.31	0.00
Avail Cap(c_a), veh/h	540	0	614	124	870	389	385	468	483	327	941	800
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	30.2	0.0	24.8	34.5	29.3	0.0	19.9	23.1	23.1	29.3	10.6	0.0
Incr Delay (d2), s/veh	10.7	0.0	5.2	8.5	1.8	0.0	0.0	4.3	4.2	21.4	0.9	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	5.1	0.0	7.9	1.1	4.1	0.0	0.0	4.8	5.0	7.4	3.6	0.0
LnGrp Delay(d),s/veh	40.9	0.0	30.0	43.1	31.2	0.0	19.9	27.3	27.3	50.7	11.5	0.0
LnGrp LOS	D		C	D	C		B	C	C	D	B	
Approach Vol, veh/h		822			459			510			569	
Approach Delay, s/veh		35.8			32.4			27.2			30.6	
Approach LOS		D			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s	17.6	23.9	7.6	24.1		41.5	15.6	16.1				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s	13.5	19.0	5.1	24.4		37.0	11.5	18.0				
Max Q Clear Time (g_c+I1), s	13.1	10.9	4.0	16.2		8.7	11.0	10.1				
Green Ext Time (p_c), s	0.0	1.8	0.0	1.4		1.7	0.1	1.6				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			32.0									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary  
 5: Broadway & Carolan Dr
























04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	69	0	298	0	1125	171	103	806	0
Future Volume (veh/h)	0	0	0	69	0	298	0	1125	171	103	806	0
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln				1900	1863	1863	1863	1863	1900	1863	1863	0
Adj Flow Rate, veh/h				75	0	324	0	1223	186	112	876	0
Adj No. of Lanes				0	1	1	1	3	0	1	3	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	2	2	2	0
Cap, veh/h				432	0	385	130	1926	293	144	3023	0
Arrive On Green				0.24	0.00	0.24	0.00	0.43	0.43	0.08	0.59	0.00
Sat Flow, veh/h				1774	0	1583	630	4456	678	1774	5253	0
Grp Volume(v), veh/h				75	0	324	0	931	478	112	876	0
Grp Sat Flow(s),veh/h/ln				1774	0	1583	630	1695	1743	1774	1695	0
Q Serve(g_s), s				1.9	0.0	10.8	0.0	11.9	11.9	3.4	4.7	0.0
Cycle Q Clear(g_c), s				1.9	0.0	10.8	0.0	11.9	11.9	3.4	4.7	0.0
Prop In Lane				1.00		1.00	1.00		0.39	1.00		0.00
Lane Grp Cap(c), veh/h				432	0	385	130	1465	753	144	3023	0
V/C Ratio(X)				0.17	0.00	0.84	0.00	0.64	0.64	0.78	0.29	0.00
Avail Cap(c_a), veh/h				575	0	513	130	1465	753	240	3023	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				16.6	0.0	20.0	0.0	12.3	12.3	25.0	5.5	0.0
Incr Delay (d2), s/veh				0.2	0.0	9.2	0.0	2.1	4.1	8.7	0.2	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.9	0.0	5.7	0.0	6.0	6.6	2.0	2.3	0.0
LnGrp Delay(d),s/veh				16.8	0.0	29.2	0.0	14.4	16.4	33.7	5.8	0.0
LnGrp LOS				B		C		B	B	C	A	
Approach Vol, veh/h					399			1409			988	
Approach Delay, s/veh					26.8			15.1			8.9	
Approach LOS					C			B			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	9.0	28.5				37.5		18.0				
Change Period (Y+Rc), s	4.5	4.5				4.5		4.5				
Max Green Setting (Gmax), s	7.5	21.0				33.0		18.0				
Max Q Clear Time (g_c+I1), s	5.4	13.9				6.7		12.8				
Green Ext Time (p_c), s	0.0	4.7				6.5		0.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				14.6								
HCM 2010 LOS				B								

# HCM 2010 Signalized Intersection Summary

## 6: Broadway & Rollins Rd


























04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	147	57	98	105	183	353	187	1201	35	218	706	262
Future Volume (veh/h)	147	57	98	105	183	353	187	1201	35	218	706	262
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	160	62	107	114	199	0	203	1305	38	237	767	0
Adj No. of Lanes	2	1	1	1	1	1	2	3	0	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	274	272	231	146	277	235	313	1838	54	343	1885	587
Arrive On Green	0.08	0.15	0.15	0.08	0.15	0.00	0.09	0.36	0.36	0.10	0.37	0.00
Sat Flow, veh/h	3442	1863	1583	1774	1863	1583	3442	5079	148	3442	5085	1583
Grp Volume(v), veh/h	160	62	107	114	199	0	203	871	472	237	767	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	1863	1583	1721	1695	1837	1721	1695	1583
Q Serve(g_s), s	2.6	1.7	3.6	3.7	5.9	0.0	3.3	12.8	12.8	3.9	6.5	0.0
Cycle Q Clear(g_c), s	2.6	1.7	3.6	3.7	5.9	0.0	3.3	12.8	12.8	3.9	6.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	274	272	231	146	277	235	313	1227	665	343	1885	587
V/C Ratio(X)	0.58	0.23	0.46	0.78	0.72	0.00	0.65	0.71	0.71	0.69	0.41	0.00
Avail Cap(c_a), veh/h	320	578	491	199	613	521	492	1227	665	385	1885	587
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	25.8	21.9	22.7	26.1	23.5	0.0	25.5	15.9	15.9	25.3	13.5	0.0
Incr Delay (d2), s/veh	2.0	0.4	1.4	12.9	3.5	0.0	2.3	3.5	6.3	4.5	0.7	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	1.3	0.9	1.7	2.3	3.3	0.0	1.7	6.5	7.6	2.1	3.1	0.0
LnGrp Delay(d),s/veh	27.8	22.3	24.1	39.0	27.0	0.0	27.7	19.4	22.2	29.7	14.2	0.0
LnGrp LOS	C	C	C	D	C		C	B	C	C	B	
Approach Vol, veh/h		329			313			1546			1004	
Approach Delay, s/veh		25.6			31.4			21.4			17.9	
Approach LOS		C			C			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.3	25.5	9.3	13.0	9.8	26.0	9.1	13.1				
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	6.5	21.0	6.5	18.0	8.3	19.2	5.4	19.1				
Max Q Clear Time (g_c+1), s	5.9	14.8	5.7	5.6	5.3	8.5	4.6	7.9				
Green Ext Time (p_c), s	0.1	4.1	0.0	0.5	0.2	3.8	0.0	0.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			21.7									
HCM 2010 LOS			C									

# HCM Signalized Intersection Capacity Analysis

## 7: Broadway & US-101 SB Ramps






















04/01/2020

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations			  					  		 	 	 	
Traffic Volume (vph)	375	0	689	0	0	0	0	1230	471	188	497	0	
Future Volume (vph)	375	0	689	0	0	0	0	1230	471	188	497	0	
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		
Lane Util. Factor		1.00	0.76					0.86	0.86	0.97	0.95		
Frt		1.00	0.85					0.99	0.85	1.00	1.00		
Flt Protected		0.95	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (prot)		1770	3610					4755	1362	3433	3539		
Flt Permitted		0.95	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (perm)		1770	3610					4755	1362	3433	3539		
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)	408	0	749	0	0	0	0	1337	512	204	540	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	10	210	0	0	0	
Lane Group Flow (vph)	0	408	749	0	0	0	0	1429	200	204	540	0	
Turn Type	Split	NA	custom					NA	Perm	Split	NA		
Protected Phases	7	7	2 7					2		6	6		
Permitted Phases									2				
Actuated Green, G (s)		20.9	52.3					26.9	26.9	18.1	18.1		
Effective Green, g (s)		20.9	52.3					26.9	26.9	18.1	18.1		
Actuated g/C Ratio		0.26	0.66					0.34	0.34	0.23	0.23		
Clearance Time (s)		4.5						4.5	4.5	4.5	4.5		
Vehicle Extension (s)		3.0						3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)		465	2377					1610	461	782	806		
v/s Ratio Prot		c0.23	0.21					c0.30		0.06	c0.15		
v/s Ratio Perm									0.15				
v/c Ratio		0.88	0.32					0.89	0.43	0.26	0.67		
Uniform Delay, d1		28.0	5.8					24.8	20.4	25.2	27.9		
Progression Factor		1.00	1.00					1.00	1.00	1.00	1.00		
Incremental Delay, d2		16.8	0.1					7.7	3.0	0.8	4.4		
Delay (s)		44.8	5.9					32.5	23.3	26.0	32.3		
Level of Service		D	A					C	C	C	C		
Approach Delay (s)		19.6			0.0			30.5			30.6		
Approach LOS		B			A			C			C		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			27.1		HCM 2000 Level of Service						C		
HCM 2000 Volume to Capacity ratio			0.82										
Actuated Cycle Length (s)			79.4		Sum of lost time (s)						13.5		
Intersection Capacity Utilization			64.7%		ICU Level of Service						C		
Analysis Period (min)			15										

c Critical Lane Group

HCM 2010 Signalized Intersection Summary  
 8: US-101 NB Ramp & Old Bayshore Hwy

04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	227	88	908	359	7	344	7	454	12	10	5
Future Volume (veh/h)	8	227	88	908	359	7	344	7	454	12	10	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	9	247	96	987	390	8	549	0	312	13	11	5
Adj No. of Lanes	1	2	1	2	2	0	2	0	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	20	405	181	1141	1541	32	941	0	420	24	21	9
Arrive On Green	0.01	0.11	0.11	0.33	0.43	0.43	0.27	0.00	0.27	0.03	0.03	0.03
Sat Flow, veh/h	1774	3539	1583	3442	3547	73	3548	0	1583	793	671	305
Grp Volume(v), veh/h	9	247	96	987	194	204	549	0	312	29	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1721	1770	1850	1774	0	1583	1769	0	0
Q Serve(g_s), s	0.4	4.6	4.0	18.8	4.9	4.9	9.4	0.0	12.6	1.1	0.0	0.0
Cycle Q Clear(g_c), s	0.4	4.6	4.0	18.8	4.9	4.9	9.4	0.0	12.6	1.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.04	1.00		1.00	0.45		0.17
Lane Grp Cap(c), veh/h	20	405	181	1141	769	804	941	0	420	55	0	0
V/C Ratio(X)	0.44	0.61	0.53	0.86	0.25	0.25	0.58	0.00	0.74	0.53	0.00	0.00
Avail Cap(c_a), veh/h	127	913	409	1357	1027	1074	941	0	420	456	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	34.3	29.4	29.1	21.9	12.5	12.5	22.3	0.0	23.5	33.3	0.0	0.0
Incr Delay (d2), s/veh	14.3	1.5	2.4	5.3	0.2	0.2	2.6	0.0	11.3	7.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.3	1.9	9.8	2.4	2.5	4.9	0.0	6.8	0.7	0.0	0.0
LnGrp Delay(d),s/veh	48.6	30.9	31.5	27.2	12.7	12.7	24.9	0.0	34.8	41.1	0.0	0.0
LnGrp LOS	D	C	C	C	B	B	C		C	D		
Approach Vol, veh/h		352			1385			861			29	
Approach Delay, s/veh		31.5			23.0			28.5			41.1	
Approach LOS		C			C			C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		23.0	27.6	12.5		6.6	5.3	34.8				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.5	27.5	18.0		18.0	5.0	40.5				
Max Q Clear Time (g_c+I1), s		14.6	20.8	6.6		3.1	2.4	6.9				
Green Ext Time (p_c), s		1.4	2.4	1.3		0.1	0.0	2.4				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			26.1									
HCM 2010 LOS			C									
<b>Notes</b>												












HCM 2010 Signalized Intersection Summary  
 9: Anza Blvd & Airport Blvd

04/01/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	412	32	56	133	28	35	36	109	12	24	18
Future Volume (veh/h)	105	412	32	56	133	28	35	36	109	12	24	18
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	114	448	35	61	145	30	38	39	118	13	26	20
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	145	597	47	88	431	87	464	488	414	194	390	302
Arrive On Green	0.08	0.18	0.18	0.05	0.15	0.15	0.26	0.26	0.26	0.25	0.25	0.25
Sat Flow, veh/h	1774	3328	259	1774	2934	593	1774	1863	1583	763	1531	1184
Grp Volume(v), veh/h	114	238	245	61	86	89	38	39	118	31	0	28
Grp Sat Flow(s),veh/h/ln	1774	1770	1817	1774	1770	1758	1774	1863	1583	1825	0	1654
Q Serve(g_s), s	4.5	9.0	9.1	2.4	3.1	3.2	1.1	1.1	4.2	0.9	0.0	0.9
Cycle Q Clear(g_c), s	4.5	9.0	9.1	2.4	3.1	3.2	1.1	1.1	4.2	0.9	0.0	0.9
Prop In Lane	1.00		0.14	1.00		0.34	1.00		1.00	0.42		0.72
Lane Grp Cap(c), veh/h	145	318	326	88	260	258	464	488	414	465	0	421
V/C Ratio(X)	0.78	0.75	0.75	0.70	0.33	0.34	0.08	0.08	0.28	0.07	0.00	0.07
Avail Cap(c_a), veh/h	188	463	476	176	451	448	464	488	414	465	0	421
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	0.00	1.00
Uniform Delay (d), s/veh	31.8	27.5	27.5	33.1	27.0	27.1	19.7	19.7	20.8	20.0	0.0	20.0
Incr Delay (d2), s/veh	14.9	3.8	3.9	9.5	0.7	0.8	0.3	0.3	1.7	0.3	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	4.7	4.9	1.4	1.6	1.6	0.6	0.6	2.0	0.5	0.0	0.4
LnGrp Delay(d),s/veh	46.7	31.3	31.4	42.6	27.8	27.9	20.0	20.0	22.5	20.3	0.0	20.3
LnGrp LOS	D	C	C	D	C	C	C	B	C	C		C
Approach Vol, veh/h		597			236			195			59	
Approach Delay, s/veh		34.3			31.6			21.5			20.3	
Approach LOS		C			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		23.0	8.0	17.2		22.5	10.3	14.9				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.5	7.0	18.5		18.0	7.5	18.0				
Max Q Clear Time (g_c+I1), s		6.2	4.4	11.1		2.9	6.5	5.2				
Green Ext Time (p_c), s		0.5	0.0	1.6		0.2	0.0	0.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			30.7									
HCM 2010 LOS			C									
<b>Notes</b>												

HCM 2010 Signalized Intersection Summary  
 10: US-101 NB Ramps & Airport Blvd

04/01/2020

									
Movement	EBT	EBR	WBL	WBT	NBL	NBR			
Lane Configurations									
Traffic Volume (veh/h)	111	18	944	164	224	633			
Future Volume (veh/h)	111	18	944	164	224	633			
Number	4	14	3	8	5	12			
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			
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863			
Adj Flow Rate, veh/h	121	20	1153	0	243	688			
Adj No. of Lanes	2	0	2	1	1	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	2	2	2	2			
Cap, veh/h	232	38	1388	729	540	1101			
Arrive On Green	0.08	0.08	0.39	0.00	0.30	0.30			
Sat Flow, veh/h	3144	494	3548	1863	1774	1583			
Grp Volume(v), veh/h	69	72	1153	0	243	688			
Grp Sat Flow(s),veh/h/ln	1770	1776	1774	1863	1774	1583			
Q Serve(g_s), s	2.2	2.3	17.3	0.0	6.5	13.8			
Cycle Q Clear(g_c), s	2.2	2.3	17.3	0.0	6.5	13.8			
Prop In Lane		0.28	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	135	135	1388	729	540	1101			
V/C Ratio(X)	0.51	0.53	0.83	0.00	0.45	0.62			
Avail Cap(c_a), veh/h	539	540	1830	961	540	1101			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00			
Uniform Delay (d), s/veh	26.3	26.3	16.2	0.0	16.6	4.8			
Incr Delay (d2), s/veh	3.0	3.2	2.6	0.0	2.7	2.7			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.2	1.2	8.8	0.0	3.6	11.9			
LnGrp Delay(d),s/veh	29.3	29.5	18.8	0.0	19.3	7.5			
LnGrp LOS	C	C	B		B	A			
Approach Vol, veh/h	141			1153	931				
Approach Delay, s/veh	29.4			18.8	10.6				
Approach LOS	C			B	B				
Timer	1	2	3	4	5	6	7	8	
Assigned Phs		2		4				8	
Phs Duration (G+Y+Rc), s		22.5		9.0				27.6	
Change Period (Y+Rc), s		4.5		4.5				4.5	
Max Green Setting (Gmax), s		18.0		18.0				30.5	
Max Q Clear Time (g_c+I1), s		15.8		4.3				19.3	
Green Ext Time (p_c), s		0.9		0.5				3.8	
<b>Intersection Summary</b>									
HCM 2010 Ctrl Delay			16.0						
HCM 2010 LOS			B						
<b>Notes</b>									

# HCM Signalized Intersection Capacity Analysis

## 11: Peninsula Ave & N. Bayshore Blvd

04/01/2020



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	277	186	950	198	50	690
Future Volume (vph)	277	186	950	198	50	690
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3448		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3448		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	301	202	1033	215	54	750
RTOR Reduction (vph)	0	153	25	0	0	0
Lane Group Flow (vph)	301	49	1223	0	54	750
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8				1	6
Permitted Phases		8	2			
Actuated Green, G (s)	14.0	14.0	27.5		2.9	34.9
Effective Green, g (s)	14.0	14.0	27.5		2.9	34.9
Actuated g/C Ratio	0.24	0.24	0.47		0.05	0.60
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	427	382	1637		88	2133
v/s Ratio Prot	c0.17				c0.03	0.21
v/s Ratio Perm		0.03	c0.35			
v/c Ratio	0.70	0.13	0.75		0.61	0.35
Uniform Delay, d1	20.1	17.2	12.4		27.0	5.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	5.2	0.2	3.2		12.0	0.5
Delay (s)	25.3	17.3	15.5		39.0	6.3
Level of Service	C	B	B		D	A
Approach Delay (s)	22.1		15.5			8.5
Approach LOS	C		B			A

### Intersection Summary

HCM 2000 Control Delay	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	57.9	Sum of lost time (s)	13.5
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

# HCM Signalized Intersection Capacity Analysis

## 12: Peninsula Ave/Coyote Point Dr & Airport Blvd

04/01/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	16	727	1101	35	13	7
Future Volume (vph)	16	727	1101	35	13	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	3433	1863	1863	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	3433	1863	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	790	1197	38	14	8
RTOR Reduction (vph)	0	318	0	0	0	6
Lane Group Flow (vph)	17	472	1197	38	14	2
Turn Type	Perm	pt+ov	Prot	NA	NA	Perm
Protected Phases		4 5	5	2	6	
Permitted Phases	4					6
Actuated Green, G (s)	9.1	42.5	28.9	53.1	19.7	19.7
Effective Green, g (s)	9.1	42.5	28.9	53.1	19.7	19.7
Actuated g/C Ratio	0.13	0.60	0.41	0.75	0.28	0.28
Clearance Time (s)	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	226	944	1393	1389	515	437
v/s Ratio Prot		c0.30	c0.35	c0.02	0.01	
v/s Ratio Perm	0.01					0.00
v/c Ratio	0.08	0.50	0.86	0.03	0.03	0.01
Uniform Delay, d1	27.3	8.2	19.3	2.3	18.8	18.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.4	5.5	0.0	0.1	0.0
Delay (s)	27.5	8.7	24.8	2.4	18.9	18.7
Level of Service	C	A	C	A	B	B
Approach Delay (s)	9.1			24.1	18.8	
Approach LOS	A			C	B	

### Intersection Summary

HCM 2000 Control Delay	18.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	71.2	Sum of lost time (s)	13.5
Intersection Capacity Utilization	56.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection						
Int Delay, s/veh	6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↖	↑↑	↗	
Traffic Vol, veh/h	353	46	0	124	241	0
Future Vol, veh/h	353	46	0	124	241	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	-	-	160	-	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	384	50	0	135	262	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	434	0	477
Stage 1	-	-	-	-	409
Stage 2	-	-	-	-	68
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	1122	-	517
Stage 1	-	-	-	-	639
Stage 2	-	-	-	-	947
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1122	-	517
Mov Cap-2 Maneuver	-	-	-	-	517
Stage 1	-	-	-	-	639
Stage 2	-	-	-	-	947

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	517	-	-	1122	-
HCM Lane V/C Ratio	0.507	-	-	-	-
HCM Control Delay (s)	18.9	-	-	0	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	2.8	-	-	0	-

HCM 2010 TWSC  
 2: Project Dwy E & Airport Blvd/Broadway

04/06/2020

Intersection						
Int Delay, s/veh	2.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑	
Traffic Vol, veh/h	353	0	31	124	0	161
Future Vol, veh/h	353	0	31	124	0	161
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	384	0	34	135	0	175






















Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	384	0	520
Stage 1	-	-	-	-	384
Stage 2	-	-	-	-	136
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	1171	-	486
Stage 1	-	-	-	-	658
Stage 2	-	-	-	-	876
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1171	-	471
Mov Cap-2 Maneuver	-	-	-	-	471
Stage 1	-	-	-	-	658
Stage 2	-	-	-	-	849

Approach	EB	WB	NB
HCM Control Delay, s	0	1.7	10.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	817	-	-	1171	-
HCM Lane V/C Ratio	0.214	-	-	0.029	-
HCM Control Delay (s)	10.6	-	-	8.2	0.1
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.8	-	-	0.1	-

HCM 2010 Signalized Intersection Summary  
 3: Broadway/Airport Blvd & Old Bayshore Hwy

04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	12	785	7	16	7	746	278	14	4	202	175
Future Volume (veh/h)	156	12	785	7	16	7	746	278	14	4	202	175
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	179	0	853	8	17	8	811	302	15	4	220	190
Adj No. of Lanes	2	0	2	0	2	0	2	2	0	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	828	0	1492	28	61	29	818	1660	82	9	889	398
Arrive On Green	0.23	0.00	0.23	0.03	0.03	0.03	0.24	0.48	0.48	0.01	0.25	0.25
Sat Flow, veh/h	3548	0	3167	841	1817	872	3442	3433	170	1774	3539	1583
Grp Volume(v), veh/h	179	0	853	17	0	16	811	155	162	4	220	190
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1821	0	1709	1721	1770	1833	1774	1770	1583
Q Serve(g_s), s	3.0	0.0	14.4	0.7	0.0	0.7	17.3	3.7	3.7	0.2	3.7	7.5
Cycle Q Clear(g_c), s	3.0	0.0	14.4	0.7	0.0	0.7	17.3	3.7	3.7	0.2	3.7	7.5
Prop In Lane	1.00		1.00	0.46		0.51	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	828	0	1492	61	0	57	818	856	886	9	889	398
V/C Ratio(X)	0.22	0.00	0.57	0.29	0.00	0.28	0.99	0.18	0.18	0.42	0.25	0.48
Avail Cap(c_a), veh/h	867	0	1527	445	0	418	818	856	886	120	889	398
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.8	0.0	14.1	34.7	0.0	34.7	28.0	10.8	10.8	36.5	22.0	23.5
Incr Delay (d2), s/veh	0.1	0.0	0.5	2.5	0.0	2.6	29.3	0.5	0.5	27.2	0.7	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	1.5	0.0	6.3	0.4	0.0	0.4	11.4	1.9	2.0	0.2	1.9	3.7
LnGrp Delay(d),s/veh	22.9	0.0	14.6	37.3	0.0	37.3	57.3	11.2	11.2	63.7	22.7	27.5
LnGrp LOS	C		B	D		D	E	B	B	E	C	C
Approach Vol, veh/h		1032			33			1128			414	
Approach Delay, s/veh		16.0			37.3			44.3			25.3	
Approach LOS		B			D			D			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.9	40.1		21.7	22.0	23.0		7.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	31.0		18.0	17.5	18.5		18.0				
Max Q Clear Time (g_c+I1), s	2.2	5.7		16.4	19.3	9.5		2.7				
Green Ext Time (p_c), s	0.0	1.8		0.8	0.0	1.3		0.1				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			30.0									
HCM 2010 LOS			C									
<b>Notes</b>												




















HCM 2010 Signalized Intersection Summary  
 4: Broadway & California Dr

04/01/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	303	330	31	37	393	377	10	248	47	282	423	406
Future Volume (veh/h)	303	330	31	37	393	377	10	248	47	282	423	406
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	329	359	34	40	427	0	11	270	51	307	460	0
Adj No. of Lanes	2	1	0	1	2	1	1	2	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	417	414	39	67	579	259	352	814	152	349	989	841
Arrive On Green	0.12	0.25	0.25	0.04	0.16	0.00	0.27	0.27	0.27	0.20	0.53	0.00
Sat Flow, veh/h	3442	1676	159	1774	3539	1583	928	2980	555	1774	1863	1583
Grp Volume(v), veh/h	329	0	393	40	427	0	11	159	162	307	460	0
Grp Sat Flow(s),veh/h/ln	1721	0	1835	1774	1770	1583	928	1770	1765	1774	1863	1583
Q Serve(g_s), s	6.8	0.0	15.1	1.6	8.4	0.0	0.6	5.3	5.4	12.3	11.3	0.0
Cycle Q Clear(g_c), s	6.8	0.0	15.1	1.6	8.4	0.0	0.6	5.3	5.4	12.3	11.3	0.0
Prop In Lane	1.00		0.09	1.00		1.00	1.00		0.31	1.00		1.00
Lane Grp Cap(c), veh/h	417	0	453	67	579	259	352	484	482	349	989	841
V/C Ratio(X)	0.79	0.00	0.87	0.59	0.74	0.00	0.03	0.33	0.34	0.88	0.46	0.00
Avail Cap(c_a), veh/h	445	0	560	123	868	388	352	484	482	375	989	841
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	31.3	0.0	26.5	34.8	29.2	0.0	19.6	21.3	21.4	28.7	10.7	0.0
Incr Delay (d2), s/veh	8.7	0.0	11.6	8.1	1.9	0.0	0.2	1.8	1.9	19.9	1.6	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	3.7	0.0	9.1	1.0	4.2	0.0	0.2	2.8	2.9	8.0	6.2	0.0
LnGrp Delay(d),s/veh	40.1	0.0	38.1	42.8	31.0	0.0	19.8	23.1	23.2	48.5	12.3	0.0
LnGrp LOS	D		D	D	C		B	C	C	D	B	
Approach Vol, veh/h		722			467			332			767	
Approach Delay, s/veh		39.0			32.1			23.1			26.8	
Approach LOS		D			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s	18.9	24.6	7.3	22.6		43.5	13.4	16.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s	15.5	19.0	5.1	22.4		39.0	9.5	18.0				
Max Q Clear Time (g_c+I1), s	14.3	7.4	3.6	17.1		13.3	8.8	10.4				
Green Ext Time (p_c), s	0.1	1.4	0.0	1.1		2.9	0.1	1.6				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			31.2									
HCM 2010 LOS			C									

























HCM 2010 Signalized Intersection Summary  
5: Broadway & Carolan Dr

04/01/2020

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	0	0	0	39	0	239	1	831	96	182	1071	1	
Future Volume (veh/h)	0	0	0	39	0	239	1	831	96	182	1071	1	
Number				3	8	18	5	2	12	1	6	16	
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		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	
Adj Sat Flow, veh/h/ln				1900	1863	1863	1863	1863	1900	1863	1863	1900	
Adj Flow Rate, veh/h				42	0	260	1	903	104	198	1164	1	
Adj No. of Lanes				0	1	1	1	3	0	1	3	0	
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %				2	2	2	2	2	2	2	2	2	
Cap, veh/h				362	0	324	328	1849	212	249	3281	3	
Arrive On Green				0.20	0.00	0.20	0.40	0.40	0.40	0.14	0.63	0.63	
Sat Flow, veh/h				1774	0	1583	480	4628	531	1774	5248	5	
Grp Volume(v), veh/h				42	0	260	1	661	346	198	752	413	
Grp Sat Flow(s),veh/h/ln				1774	0	1583	480	1695	1769	1774	1695	1862	
Q Serve(g_s), s				1.0	0.0	8.3	0.1	7.7	7.7	5.7	5.6	5.6	
Cycle Q Clear(g_c), s				1.0	0.0	8.3	0.1	7.7	7.7	5.7	5.6	5.6	
Prop In Lane				1.00		1.00	1.00		0.30	1.00		0.00	
Lane Grp Cap(c), veh/h				362	0	324	328	1354	707	249	2119	1164	
V/C Ratio(X)				0.12	0.00	0.80	0.00	0.49	0.49	0.79	0.35	0.35	
Avail Cap(c_a), veh/h				605	0	540	328	1354	707	353	2119	1164	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh				17.1	0.0	20.0	9.5	11.8	11.8	22.0	4.8	4.8	
Incr Delay (d2), s/veh				0.1	0.0	4.7	0.0	1.3	2.4	8.0	0.5	0.8	
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				0.5	0.0	4.0	0.0	3.8	4.2	3.3	2.7	3.1	
LnGrp Delay(d),s/veh				17.3	0.0	24.7	9.6	13.1	14.3	30.0	5.2	5.6	
LnGrp LOS				B		C	A	B	B	C	A	A	
Approach Vol, veh/h					302			1008			1363		
Approach Delay, s/veh					23.6			13.5			8.9		
Approach LOS					C			B			A		
Timer	1	2	3	4	5	6	7	8					
Assigned Phs	1	2				6		8					
Phs Duration (G+Y+Rc), s	11.9	25.6				37.5		15.3					
Change Period (Y+Rc), s	4.5	4.5				4.5		4.5					
Max Green Setting (Gmax), s	10.5	18.0				33.0		18.0					
Max Q Clear Time (g_c+1), s	7.7	9.7				7.6		10.3					
Green Ext Time (p_c), s	0.1	4.0				8.5		0.7					
<b>Intersection Summary</b>													
HCM 2010 Ctrl Delay				12.3									
HCM 2010 LOS				B									

HCM 2010 Signalized Intersection Summary  
 6: Broadway & Rollins Rd













04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	330	204	172	42	67	168	131	897	42	398	1040	105
Future Volume (veh/h)	330	204	172	42	67	168	131	897	42	398	1040	105
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	359	222	187	46	73	0	142	975	46	433	1130	0
Adj No. of Lanes	2	1	1	1	1	1	2	3	0	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	471	327	278	79	155	132	260	1602	75	544	2058	641
Arrive On Green	0.14	0.18	0.18	0.04	0.08	0.00	0.08	0.32	0.32	0.16	0.40	0.00
Sat Flow, veh/h	3442	1863	1583	1774	1863	1583	3442	4977	234	3442	5085	1583
Grp Volume(v), veh/h	359	222	187	46	73	0	142	664	357	433	1130	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	1863	1583	1721	1695	1821	1721	1695	1583
Q Serve(g_s), s	6.0	6.7	6.6	1.5	2.2	0.0	2.4	9.9	9.9	7.3	10.2	0.0
Cycle Q Clear(g_c), s	6.0	6.7	6.6	1.5	2.2	0.0	2.4	9.9	9.9	7.3	10.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.13	1.00		1.00
Lane Grp Cap(c), veh/h	471	327	278	79	155	132	260	1091	586	544	2058	641
V/C Ratio(X)	0.76	0.68	0.67	0.58	0.47	0.00	0.55	0.61	0.61	0.80	0.55	0.00
Avail Cap(c_a), veh/h	544	661	562	183	558	475	298	1091	586	602	2058	641
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	25.0	23.2	23.1	28.1	26.3	0.0	26.8	17.2	17.2	24.3	13.7	0.0
Incr Delay (d2), s/veh	5.4	2.5	2.8	6.6	2.2	0.0	1.8	2.5	4.7	6.7	1.1	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	3.2	3.7	3.1	0.9	1.3	0.0	1.2	5.0	5.7	3.9	4.9	0.0
LnGrp Delay(d),s/veh	30.4	25.6	26.0	34.7	28.5	0.0	28.6	19.7	21.8	31.1	14.7	0.0
LnGrp LOS	C	C	C	C	C		C	B	C	C	B	
Approach Vol, veh/h		768			119			1163			1563	
Approach Delay, s/veh		27.9			30.9			21.4			19.3	
Approach LOS		C			C			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.0	23.8	7.2	15.0	9.0	28.8	12.7	9.5				
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	10.5	19.0	6.2	21.3	5.2	24.3	9.5	18.0				
Max Q Clear Time (g_c+1), s	9.3	11.9	3.5	8.7	4.4	12.2	8.0	4.2				
Green Ext Time (p_c), s	0.2	3.6	0.0	1.5	0.0	6.0	0.2	0.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				22.2								
HCM 2010 LOS				C								

# HCM Signalized Intersection Capacity Analysis

## 7: Broadway & US-101 SB Ramps

04/01/2020

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↔	↔↔↔					↔↔↔	↔	↔↔	↔↔		
Traffic Volume (vph)	158	0	940	0	0	0	0	848	547	391	603	0	
Future Volume (vph)	158	0	940	0	0	0	0	848	547	391	603	0	
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		
Lane Util. Factor		1.00	0.76					0.86	0.86	0.97	0.95		
Frt		1.00	0.85					0.97	0.85	1.00	1.00		
Flt Protected		0.95	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (prot)		1770	3610					4652	1362	3433	3539		
Flt Permitted		0.95	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (perm)		1770	3610					4652	1362	3433	3539		
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)	172	0	1022	0	0	0	0	922	595	425	655	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	63	243	0	0	0	
Lane Group Flow (vph)	0	172	1022	0	0	0	0	1109	102	425	655	0	
Turn Type	Split	NA	custom					NA	Perm	Split	NA		
Protected Phases	7	7	2 7					2		6	6		
Permitted Phases									2				
Actuated Green, G (s)		17.2	42.1					20.4	20.4	18.1	18.1		
Effective Green, g (s)		17.2	42.1					20.4	20.4	18.1	18.1		
Actuated g/C Ratio		0.25	0.61					0.29	0.29	0.26	0.26		
Clearance Time (s)		4.5						4.5	4.5	4.5	4.5		
Vehicle Extension (s)		3.0						3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)		439	2196					1371	401	897	925		
v/s Ratio Prot		0.10	c0.28					c0.24		0.12	c0.19		
v/s Ratio Perm									0.07				
v/c Ratio		0.39	0.47					0.81	0.25	0.47	0.71		
Uniform Delay, d1		21.6	7.4					22.6	18.6	21.5	23.2		
Progression Factor		1.00	1.00					1.00	1.00	1.00	1.00		
Incremental Delay, d2		0.6	0.2					5.2	1.5	1.8	4.6		
Delay (s)		22.2	7.6					27.8	20.1	23.3	27.7		
Level of Service		C	A					C	C	C	C		
Approach Delay (s)		9.7			0.0			26.1			26.0		
Approach LOS		A			A			C			C		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			20.9									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.69										
Actuated Cycle Length (s)			69.2									Sum of lost time (s)	13.5
Intersection Capacity Utilization			53.7%									ICU Level of Service	A
Analysis Period (min)			15										

c Critical Lane Group

# HCM 2010 Signalized Intersection Summary





















## 8: US-101 NB Ramp & Old Bayshore Hwy

04/01/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	572	174	699	220	18	137	4	364	17	11	5
Future Volume (veh/h)	12	572	174	699	220	18	137	4	364	17	11	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	13	622	189	760	239	20	101	0	450	18	12	5
Adj No. of Lanes	1	2	1	2	2	0	1	0	2	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	28	772	346	833	1470	122	454	0	810	32	21	9
Arrive On Green	0.02	0.22	0.22	0.24	0.44	0.44	0.26	0.00	0.26	0.03	0.03	0.03
Sat Flow, veh/h	1774	3539	1583	3442	3309	275	1774	0	3167	912	608	253
Grp Volume(v), veh/h	13	622	189	760	127	132	101	0	450	35	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1721	1770	1814	1774	0	1583	1772	0	0
Q Serve(g_s), s	0.5	12.1	7.7	15.5	3.1	3.2	3.2	0.0	8.9	1.4	0.0	0.0
Cycle Q Clear(g_c), s	0.5	12.1	7.7	15.5	3.1	3.2	3.2	0.0	8.9	1.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.15	1.00		1.00	0.51		0.14
Lane Grp Cap(c), veh/h	28	772	346	833	786	806	454	0	810	62	0	0
V/C Ratio(X)	0.46	0.81	0.55	0.91	0.16	0.16	0.22	0.00	0.56	0.57	0.00	0.00
Avail Cap(c_a), veh/h	123	881	394	833	786	806	454	0	810	441	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	35.3	26.8	25.1	26.7	12.0	12.0	21.2	0.0	23.3	34.4	0.0	0.0
Incr Delay (d2), s/veh	11.3	4.9	1.3	14.3	0.1	0.1	1.1	0.0	2.7	7.9	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	0.3	6.4	3.5	9.0	1.5	1.6	1.7	0.0	4.2	0.8	0.0	0.0
LnGrp Delay(d),s/veh	46.6	31.7	26.4	40.9	12.1	12.1	22.4	0.0	26.1	42.2	0.0	0.0
LnGrp LOS	D	C	C	D	B	B	C		C	D		
Approach Vol, veh/h		824			1019			551			35	
Approach Delay, s/veh		30.7			33.6			25.4			42.2	
Approach LOS		C			C			C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		23.0	22.0	20.3		7.0	5.6	36.6				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.5	17.5	18.0		18.0	5.0	30.5				
Max Q Clear Time (g_c+I1), s		10.9	17.5	14.1		3.4	2.5	5.2				
Green Ext Time (p_c), s		1.4	0.0	1.7		0.1	0.0	1.4				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			30.9									
HCM 2010 LOS			C									
<b>Notes</b>												













HCM 2010 Signalized Intersection Summary  
 9: Anza Blvd & Airport Blvd

04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	315	25	202	247	20	39	24	33	51	58	47
Future Volume (veh/h)	46	315	25	202	247	20	39	24	33	51	58	47
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	50	342	27	220	268	22	34	37	36	55	63	51
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	78	481	38	184	677	55	453	475	404	276	322	267
Arrive On Green	0.04	0.14	0.14	0.10	0.20	0.20	0.26	0.26	0.26	0.25	0.25	0.25
Sat Flow, veh/h	1774	3325	261	1774	3314	270	1774	1863	1583	1110	1296	1074
Grp Volume(v), veh/h	50	181	188	220	142	148	34	37	36	90	0	79
Grp Sat Flow(s),veh/h/ln	1774	1770	1817	1774	1770	1815	1774	1863	1583	1807	0	1673
Q Serve(g_s), s	2.0	7.1	7.1	7.5	5.0	5.1	1.1	1.1	1.3	2.8	0.0	2.7
Cycle Q Clear(g_c), s	2.0	7.1	7.1	7.5	5.0	5.1	1.1	1.1	1.3	2.8	0.0	2.7
Prop In Lane	1.00		0.14	1.00		0.15	1.00		1.00	0.61		0.64
Lane Grp Cap(c), veh/h	78	256	263	184	361	371	453	475	404	449	0	416
V/C Ratio(X)	0.64	0.71	0.72	1.20	0.39	0.40	0.08	0.08	0.09	0.20	0.00	0.19
Avail Cap(c_a), veh/h	159	439	451	184	464	476	453	475	404	449	0	416
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	0.00	1.00
Uniform Delay (d), s/veh	34.1	29.5	29.6	32.5	25.0	25.0	20.5	20.5	20.6	21.5	0.0	21.5
Incr Delay (d2), s/veh	8.6	3.6	3.6	130.0	0.7	0.7	0.3	0.3	0.4	1.0	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	3.7	3.9	10.2	2.5	2.6	0.6	0.6	0.6	1.5	0.0	1.4
LnGrp Delay(d),s/veh	42.7	33.1	33.2	162.4	25.6	25.7	20.8	20.8	21.0	22.5	0.0	22.5
LnGrp LOS	D	C	C	F	C	C	C	C	C	C		C
Approach Vol, veh/h		419			510			107			169	
Approach Delay, s/veh		34.3			84.7			20.9			22.5	
Approach LOS		C			F			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		23.0	12.0	15.0		22.5	7.7	19.3				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.5	7.5	18.0		18.0	6.5	19.0				
Max Q Clear Time (g_c+I1), s		3.3	9.5	9.1		4.8	4.0	7.1				
Green Ext Time (p_c), s		0.3	0.0	1.3		0.7	0.0	1.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay	52.8											
HCM 2010 LOS	D											
<b>Notes</b>												

HCM 2010 Signalized Intersection Summary  
 10: US-101 NB Ramps & Airport Blvd

04/01/2020

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	 							
Traffic Volume (veh/h)	328	74	625	86	69	440		
Future Volume (veh/h)	328	74	625	86	69	440		
Number	4	14	3	8	5	12		
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		
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863		
Adj Flow Rate, veh/h	357	80	745	0	75	478		
Adj No. of Lanes	2	0	2	1	1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	525	116	934	491	562	919		
Arrive On Green	0.18	0.18	0.26	0.00	0.32	0.32		
Sat Flow, veh/h	2974	638	3548	1863	1774	1583		
Grp Volume(v), veh/h	218	219	745	0	75	478		
Grp Sat Flow(s),veh/h/ln	1770	1750	1774	1863	1774	1583		
Q Serve(g_s), s	6.5	6.7	11.1	0.0	1.7	10.3		
Cycle Q Clear(g_c), s	6.5	6.7	11.1	0.0	1.7	10.3		
Prop In Lane		0.36	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	322	319	934	491	562	919		
V/C Ratio(X)	0.68	0.69	0.80	0.00	0.13	0.52		
Avail Cap(c_a), veh/h	561	555	1280	672	562	919		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00		
Uniform Delay (d), s/veh	21.7	21.7	19.5	0.0	13.8	7.2		
Incr Delay (d2), s/veh	2.5	2.6	2.5	0.0	0.5	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	3.4	3.5	5.7	0.0	0.9	7.8		
LnGrp Delay(d),s/veh	24.1	24.4	22.0	0.0	14.3	9.3		
LnGrp LOS	C	C	C		B	A		
Approach Vol, veh/h	437			745	553			
Approach Delay, s/veh	24.2			22.0	10.0			
Approach LOS	C			C	A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		22.5		14.8				19.5
Change Period (Y+Rc), s		4.5		4.5				4.5
Max Green Setting (Gmax), s		18.0		18.0				20.5
Max Q Clear Time (g_c+I1), s		12.3		8.7				13.1
Green Ext Time (p_c), s		1.1		1.7				1.8
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			18.7					
HCM 2010 LOS			B					
<b>Notes</b>								

# HCM Signalized Intersection Capacity Analysis

## 11: Peninsula Ave & N. Bayshore Blvd

04/01/2020



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	246	81	611	331	174	616
Future Volume (vph)	246	81	611	331	174	616
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	0.95		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3353		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3353		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	267	88	664	360	189	670
RTOR Reduction (vph)	0	67	115	0	0	0
Lane Group Flow (vph)	267	21	909	0	189	670
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8				1	6
Permitted Phases		8	2			
Actuated Green, G (s)	13.2	13.2	20.3		8.3	33.1
Effective Green, g (s)	13.2	13.2	20.3		8.3	33.1
Actuated g/C Ratio	0.24	0.24	0.37		0.15	0.60
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	422	377	1230		265	2118
v/s Ratio Prot	c0.15				c0.11	0.19
v/s Ratio Perm		0.01	c0.27			
v/c Ratio	0.63	0.06	0.74		0.71	0.32
Uniform Delay, d1	18.9	16.2	15.2		22.4	5.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.1	0.1	4.0		8.8	0.4
Delay (s)	22.0	16.3	19.2		31.1	5.9
Level of Service	C	B	B		C	A
Approach Delay (s)	20.6		19.2			11.4
Approach LOS	C		B			B

### Intersection Summary

HCM 2000 Control Delay	16.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	55.3	Sum of lost time (s)	13.5
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

# HCM Signalized Intersection Capacity Analysis

## 12: Peninsula Ave/Coyote Point Dr & Airport Blvd

04/01/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	75	693	664	38	97	26
Future Volume (vph)	75	693	664	38	97	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	3433	1863	1863	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	3433	1863	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	753	722	41	105	28
RTOR Reduction (vph)	0	321	0	0	0	19
Lane Group Flow (vph)	82	432	722	41	105	9
Turn Type	Perm	pt+ov	Prot	NA	NA	Perm
Protected Phases		4 5	5	2	6	
Permitted Phases	4					6
Actuated Green, G (s)	10.5	32.5	17.5	42.7	20.7	20.7
Effective Green, g (s)	10.5	32.5	17.5	42.7	20.7	20.7
Actuated g/C Ratio	0.17	0.52	0.28	0.69	0.33	0.33
Clearance Time (s)	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	298	827	965	1278	620	526
v/s Ratio Prot		c0.27	c0.21	0.02	c0.06	
v/s Ratio Perm	0.05					0.01
v/c Ratio	0.28	0.52	0.75	0.03	0.17	0.02
Uniform Delay, d1	22.5	9.7	20.3	3.1	14.7	13.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.6	3.2	0.0	0.6	0.1
Delay (s)	23.0	10.3	23.6	3.2	15.3	14.0
Level of Service	C	B	C	A	B	B
Approach Delay (s)	11.6			22.5	15.0	
Approach LOS	B			C	B	

### Intersection Summary

HCM 2000 Control Delay	16.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	62.2	Sum of lost time (s)	13.5
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

# Queues

## 3: Broadway/Airport Blvd & Old Bayshore Hwy

04/01/2020



Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	62	62	629	38	1252	492	4	99	117
v/c Ratio	0.31	0.31	0.34	0.15	0.84	0.20	0.04	0.13	0.26
Control Delay	40.2	40.1	1.0	36.5	30.0	7.2	44.0	30.8	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0
Total Delay	40.2	40.1	1.0	36.5	30.4	7.2	44.0	30.8	4.5
Queue Length 50th (ft)	34	34	0	8	334	50	2	24	0
Queue Length 95th (ft)	75	75	14	26	#525	115	13	50	28
Internal Link Dist (ft)		573		269		426		518	
Turn Bay Length (ft)	360						210		115
Base Capacity (vph)	351	355	1946	710	1496	2410	102	761	457
Starvation Cap Reductn	0	0	0	0	40	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.17	0.32	0.05	0.86	0.20	0.04	0.13	0.26

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 4: Broadway & California Dr

04/01/2020



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	436	386	48	411	495	3	507	277	292	382
v/c Ratio	0.86	0.62	0.41	0.58	0.77	0.01	0.59	0.90	0.33	0.40
Control Delay	51.2	27.9	47.0	31.5	14.7	23.7	29.1	66.2	14.4	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	49.7	5.4	1.4
Total Delay	51.2	27.9	47.0	31.5	14.7	23.7	29.1	115.9	19.8	4.4
Queue Length 50th (ft)	109	166	23	95	34	1	114	136	86	2
Queue Length 95th (ft)	#191	263	57	140	142	8	167	#281	145	47
Internal Link Dist (ft)		329		578			73		137	
Turn Bay Length (ft)	225		95		350	50				
Base Capacity (vph)	509	625	116	821	683	264	864	307	888	951
Starvation Cap Reductn	0	0	0	0	0	0	0	60	524	369
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.62	0.41	0.50	0.72	0.01	0.59	1.12	0.80	0.66

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 5: Broadway & Carolan Dr

04/01/2020



Lane Group	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	75	324	1409	112	876
v/c Ratio	0.25	0.63	0.60	0.46	0.26
Control Delay	19.7	9.8	12.7	27.8	4.5
Queue Delay	0.0	0.0	1.4	0.0	0.0
Total Delay	19.7	9.8	14.1	27.8	4.5
Queue Length 50th (ft)	20	8	106	30	28
Queue Length 95th (ft)	47	60	191	78	67
Internal Link Dist (ft)	312		137		329
Turn Bay Length (ft)		200		125	
Base Capacity (vph)	627	751	2348	261	3307
Starvation Cap Reductn	0	0	682	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.12	0.43	0.85	0.43	0.26

### Intersection Summary

Queues

6: Broadway & Rollins Rd

04/01/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	160	62	107	114	199	384	203	1343	237	767	285
v/c Ratio	0.55	0.15	0.22	0.64	0.52	0.74	0.48	0.81	0.68	0.49	0.42
Control Delay	37.7	21.9	2.5	48.1	27.5	18.6	31.5	25.5	40.9	20.4	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.7	21.9	2.5	48.1	27.5	18.6	31.5	25.5	40.9	20.4	5.0
Queue Length 50th (ft)	31	20	0	43	69	49	38	169	46	88	0
Queue Length 95th (ft)	#69	48	14	#123	125	135	73	#280	#103	139	52
Internal Link Dist (ft)		340			251			329		336	
Turn Bay Length (ft)	130		110			160	90		200		155
Base Capacity (vph)	289	523	562	179	555	641	444	1665	348	1560	683
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.12	0.19	0.64	0.36	0.60	0.46	0.81	0.68	0.49	0.42

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Queues

7: Broadway & US-101 SB Ramps

04/01/2020



Lane Group	EBT	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	408	749	1439	410	204	540
v/c Ratio	0.88	0.31	0.89	0.61	0.26	0.67
Control Delay	49.8	6.2	33.1	10.0	26.4	32.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.8	6.2	33.1	10.0	26.4	32.8
Queue Length 50th (ft)	193	60	258	38	43	130
Queue Length 95th (ft)	#349	82	#353	139	72	183
Internal Link Dist (ft)	446		336			426
Turn Bay Length (ft)		200		105		
Base Capacity (vph)	478	2362	1619	671	782	806
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.32	0.89	0.61	0.26	0.67

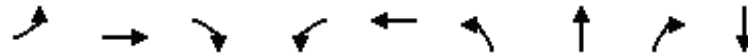
Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 8: US-101 NB Ramp & Old Bayshore Hwy

04/01/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	9	247	96	987	398	303	291	281	29
v/c Ratio	0.08	0.49	0.26	0.78	0.20	0.73	0.63	0.48	0.18
Control Delay	38.9	34.1	2.5	28.3	10.5	40.2	23.6	7.0	33.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.9	34.1	2.5	28.3	10.5	40.2	23.6	7.0	33.0
Queue Length 50th (ft)	4	52	0	178	35	122	67	0	10
Queue Length 95th (ft)	20	101	7	#389	103	#318	#218	67	38
Internal Link Dist (ft)		386			573		242		94
Turn Bay Length (ft)	205		170			130			
Base Capacity (vph)	118	855	507	1268	1975	417	460	584	434
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.29	0.19	0.78	0.20	0.73	0.63	0.48	0.07

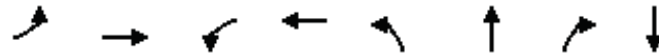
### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 9: Anza Blvd & Airport Blvd

04/01/2020



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	114	483	61	175	34	43	118	59
v/c Ratio	0.64	0.62	0.38	0.27	0.08	0.10	0.23	0.07
Control Delay	52.6	29.6	41.1	22.8	24.3	24.4	4.5	17.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.6	29.6	41.1	22.8	24.3	24.4	4.5	17.8
Queue Length 50th (ft)	54	111	28	31	13	16	0	7
Queue Length 95th (ft)	#133	160	66	57	37	45	29	23
Internal Link Dist (ft)		477		433		347		50
Turn Bay Length (ft)	90		210					
Base Capacity (vph)	183	909	171	877	429	450	510	840
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.53	0.36	0.20	0.08	0.10	0.23	0.07

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 10: US-101 NB Ramps & Airport Blvd

04/01/2020



Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	141	595	609	243	688
v/c Ratio	0.35	0.82	0.82	0.53	0.52
Control Delay	26.8	29.0	29.2	27.6	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	26.8	29.0	29.2	27.6	2.2
Queue Length 50th (ft)	25	224	230	90	12
Queue Length 95th (ft)	50	#431	#441	162	40
Internal Link Dist (ft)	300		611	186	
Turn Bay Length (ft)				230	230
Base Capacity (vph)	913	738	750	458	1323
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.15	0.81	0.81	0.53	0.52

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 11: Peninsula Ave & N. Bayshore Blvd

04/01/2020



Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	301	202	1248	54	750
v/c Ratio	0.68	0.37	0.73	0.34	0.36
Control Delay	27.3	5.1	17.3	31.3	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	27.3	5.1	17.3	31.3	7.2
Queue Length 50th (ft)	90	0	184	18	61
Queue Length 95th (ft)	160	39	#341	49	106
Internal Link Dist (ft)	179		604		286
Turn Bay Length (ft)				100	
Base Capacity (vph)	573	649	1714	161	2083
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.53	0.31	0.73	0.34	0.36

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 12: Peninsula Ave/Coyote Point Dr & Airport Blvd

04/01/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	17	790	1197	38	14	8
v/c Ratio	0.08	0.63	0.86	0.03	0.03	0.02
Control Delay	26.6	2.9	28.1	3.5	21.8	13.3
Queue Delay	0.0	0.0	6.3	0.0	0.0	0.0
Total Delay	26.6	2.9	34.4	3.5	21.8	13.3
Queue Length 50th (ft)	7	0	220	3	4	0
Queue Length 95th (ft)	22	35	#428	15	20	11
Internal Link Dist (ft)	611			286	438	
Turn Bay Length (ft)			85			
Base Capacity (vph)	451	1270	1427	1389	514	443
Starvation Cap Reductn	0	0	189	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.62	0.97	0.03	0.03	0.02

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Queues

12: Peninsula Ave/Coyote Point Dr & Airport Blvd

With Mitigations

04/09/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	16	727	1101	35	13	7
v/c Ratio	0.07	0.60	0.82	0.03	0.02	0.01
Control Delay	26.9	2.8	26.1	3.3	21.5	13.6
Queue Delay	0.0	0.0	2.1	0.0	0.0	0.0
Total Delay	26.9	2.8	28.2	3.3	21.5	13.6
Queue Length 50th (ft)	6	0	194	2	4	0
Queue Length 95th (ft)	22	34	#363	13	18	10
Internal Link Dist (ft)	611			286	438	
Turn Bay Length (ft)			85			
Base Capacity (vph)	453	1237	1434	1396	549	471
Starvation Cap Reductn	0	0	199	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.59	0.89	0.03	0.02	0.01

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 3: Broadway/Airport Blvd & Old Bayshore Hwy

04/01/2020



Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	92	91	853	33	811	317	4	220	190
v/c Ratio	0.29	0.29	0.47	0.10	0.89	0.15	0.03	0.22	0.33
Control Delay	26.7	26.6	1.5	26.8	40.0	9.1	34.2	21.4	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.7	26.6	1.5	26.8	40.0	9.1	34.2	21.4	6.0
Queue Length 50th (ft)	30	30	0	4	146	19	1	32	0
Queue Length 95th (ft)	80	80	18	19	#341	81	11	76	49
Internal Link Dist (ft)		573		269		426		518	
Turn Bay Length (ft)	360						210		115
Base Capacity (vph)	461	465	1827	930	915	2086	134	997	582
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.20	0.47	0.04	0.89	0.15	0.03	0.22	0.33

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Queues

4: Broadway & California Dr

04/01/2020



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	329	393	40	427	410	11	321	307	460	441
v/c Ratio	0.79	0.69	0.34	0.60	0.64	0.05	0.36	0.89	0.49	0.46
Control Delay	48.7	32.0	44.3	31.9	8.0	24.4	24.1	60.5	15.6	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	52.8	32.7	2.5
Total Delay	48.7	32.0	44.3	31.9	8.0	24.4	24.1	113.3	48.3	8.3
Queue Length 50th (ft)	83	176	20	99	0	4	64	150	147	35
Queue Length 95th (ft)	#147	#306	50	145	71	17	102	#294	230	96
Internal Link Dist (ft)		329		578			73		137	
Turn Bay Length (ft)	225		95		350	50				
Base Capacity (vph)	420	574	116	821	681	231	881	353	936	949
Starvation Cap Reductn	0	0	0	0	0	0	0	93	492	374
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.68	0.34	0.52	0.60	0.05	0.36	1.18	1.04	0.77

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 5: Broadway & Carolan Dr

04/01/2020



Lane Group	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	42	260	1	1007	198	1165
v/c Ratio	0.16	0.56	0.01	0.52	0.58	0.34
Control Delay	19.1	8.4	12.0	13.2	26.3	4.2
Queue Delay	0.0	0.0	0.0	0.7	0.0	0.0
Total Delay	19.1	8.4	12.0	14.0	26.3	4.2
Queue Length 50th (ft)	11	0	0	75	50	36
Queue Length 95th (ft)	31	47	3	131	#117	80
Internal Link Dist (ft)	312			137		329
Turn Bay Length (ft)		200	40		125	
Base Capacity (vph)	643	741	164	1940	375	3387
Starvation Cap Reductn	0	0	0	557	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.35	0.01	0.73	0.53	0.34

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 6: Broadway & Rollins Rd

04/01/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	359	222	187	46	73	183	142	1021	433	1130	114
v/c Ratio	0.74	0.45	0.32	0.29	0.26	0.43	0.53	0.71	0.81	0.56	0.16
Control Delay	39.7	25.3	4.0	35.1	27.0	5.9	39.0	25.3	42.1	18.7	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.7	25.3	4.0	35.1	27.0	5.9	39.0	25.3	42.1	18.7	2.2
Queue Length 50th (ft)	73	84	0	18	27	0	29	134	89	134	0
Queue Length 95th (ft)	#147	145	33	51	60	33	#62	202	#178	204	19
Internal Link Dist (ft)		340			251			329		336	
Turn Bay Length (ft)	130		110			160	90		200		155
Base Capacity (vph)	486	592	651	163	500	584	266	1438	537	2001	716
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.38	0.29	0.28	0.15	0.31	0.53	0.71	0.81	0.56	0.16

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 7: Broadway & US-101 SB Ramps

04/01/2020



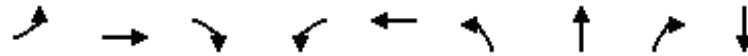
Lane Group	EBT	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	172	1022	1172	345	425	655
v/c Ratio	0.39	0.47	0.82	0.54	0.47	0.71
Control Delay	24.6	8.2	26.9	6.0	23.9	28.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.6	8.2	26.9	6.0	23.9	28.3
Queue Length 50th (ft)	61	92	168	0	79	134
Queue Length 95th (ft)	113	124	222	65	119	191
Internal Link Dist (ft)	446		336			426
Turn Bay Length (ft)		200		105		
Base Capacity (vph)	460	2188	1433	644	897	925
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.47	0.82	0.54	0.47	0.71

### Intersection Summary

Queues

8: US-101 NB Ramp & Old Bayshore Hwy

04/01/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	13	622	189	760	259	134	209	206	35
v/c Ratio	0.11	0.77	0.37	0.92	0.15	0.31	0.41	0.39	0.21
Control Delay	37.7	34.8	6.8	48.2	11.5	27.0	8.3	6.6	32.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.7	34.8	6.8	48.2	11.5	27.0	8.3	6.6	32.5
Queue Length 50th (ft)	6	151	0	192	32	57	7	0	14
Queue Length 95th (ft)	24	#223	50	#322	70	112	67	54	41
Internal Link Dist (ft)		386			573		242		94
Turn Bay Length (ft)	205		170			130			
Base Capacity (vph)	121	873	532	823	1779	426	511	535	443
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.71	0.36	0.92	0.15	0.31	0.41	0.39	0.08

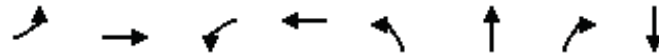
Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 9: Anza Blvd & Airport Blvd

04/01/2020



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	50	369	220	290	33	35	36	169
v/c Ratio	0.34	0.60	1.24	0.33	0.08	0.08	0.07	0.20
Control Delay	40.2	32.0	182.3	24.8	23.7	23.7	0.3	17.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.2	32.0	182.3	24.8	23.7	23.7	0.3	17.2
Queue Length 50th (ft)	22	82	~130	61	12	13	0	22
Queue Length 95th (ft)	58	123	#277	96	36	38	0	50
Internal Link Dist (ft)		477		433		347		50
Turn Bay Length (ft)	90		210					
Base Capacity (vph)	153	846	177	956	414	430	497	836
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.44	1.24	0.30	0.08	0.08	0.07	0.20

### Intersection Summary

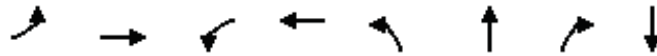
- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

Queues

9: Anza Blvd & Airport Blvd

With Mitigations

04/09/2020



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	46	340	154	315	31	32	33	156
v/c Ratio	0.29	0.36	0.53	0.52	0.07	0.07	0.06	0.17
Control Delay	38.0	20.1	34.1	29.0	22.9	22.8	0.2	16.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.0	20.1	34.1	29.0	22.9	22.8	0.2	16.9
Queue Length 50th (ft)	20	58	72	71	11	11	0	20
Queue Length 95th (ft)	54	90	132	110	34	35	0	47
Internal Link Dist (ft)		477		433		347		50
Turn Bay Length (ft)	90		210					
Base Capacity (vph)	167	1508	433	901	464	482	540	905
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.23	0.36	0.35	0.07	0.07	0.06	0.17

Intersection Summary

# Queues

## 10: US-101 NB Ramps & Airport Blvd

04/01/2020



Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	437	387	385	75	478
v/c Ratio	0.60	0.77	0.75	0.15	0.44
Control Delay	24.8	33.2	32.2	20.0	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	24.8	33.2	32.2	20.0	5.0
Queue Length 50th (ft)	76	140	138	22	41
Queue Length 95th (ft)	117	#298	#293	56	109
Internal Link Dist (ft)	300		611	186	
Turn Bay Length (ft)				230	230
Base Capacity (vph)	1002	542	550	501	1097
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.44	0.71	0.70	0.15	0.44

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 11: Peninsula Ave & N. Bayshore Blvd

04/01/2020



Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	267	88	1024	189	670
v/c Ratio	0.63	0.20	0.76	0.71	0.32
Control Delay	26.0	5.7	18.3	41.3	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	26.0	5.7	18.3	41.3	6.6
Queue Length 50th (ft)	79	0	124	60	49
Queue Length 95th (ft)	141	26	#248	#158	93
Internal Link Dist (ft)	179		604		286
Turn Bay Length (ft)				100	
Base Capacity (vph)	578	575	1342	272	2118
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.46	0.15	0.76	0.69	0.32

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 12: Peninsula Ave/Coyote Point Dr & Airport Blvd

04/01/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	82	753	722	41	105	28
v/c Ratio	0.28	0.66	0.75	0.03	0.17	0.05
Control Delay	24.1	4.3	26.9	4.5	18.1	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.1	4.3	26.9	4.5	18.1	8.1
Queue Length 50th (ft)	27	13	118	4	27	0
Queue Length 95th (ft)	59	57	#218	17	70	17
Internal Link Dist (ft)	611			286	438	
Turn Bay Length (ft)			85			
Base Capacity (vph)	528	1164	1025	1279	618	544
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.65	0.70	0.03	0.17	0.05

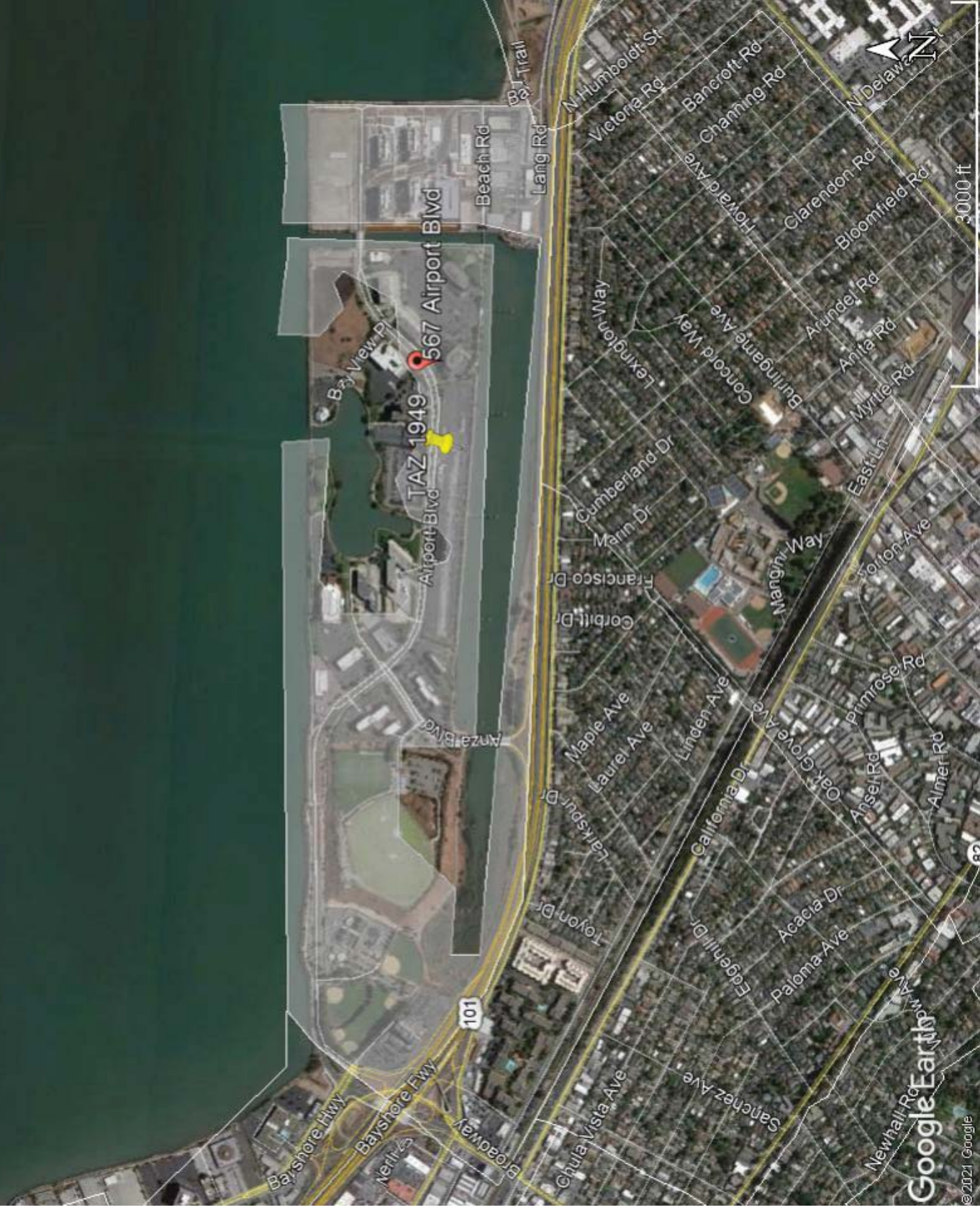
### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

**Appendix D – CCAG/VTA Travel Demand Model VMT Outputs**

# CCAG/MTA TAZ Boundaries

567 Airport Boulevard  
Burlingame, California



**Regional Data**

## 2015 Base Year VMT Data

County	Total Employment	Home-Based Work	
		VMT Production	Home-Based Work VMT Attraction
1 San Francisco	600353		4978073
2 San Mateo	371161		6211800
3 Santa Clara	1040507		17528101
4 Alameda	772058		12467465
5 Contra Costa	392237		6484896
6 Solano	154343		2372308
7 Napa	80612		1276516
8 Sonoma	224098		4056479
9 Marin	127199		2660711
10 Santa Cruz	116050		1542326
11 Monterey	203429		5169897
12 San Benito	18087		405762
13 San Joaquin	231176		5030305
<b>TOTAL</b>	<b>4331310</b>	<b>0</b>	<b>70184639</b>

## 2015 VMT Metrics

County	Home-Based Work VMT Attr. per Employee	Threshold: 85% of commute per Employee
1 San Francisco	8.29	7.05
2 <b>San Mateo</b>	16.74	<b>14.23</b>
3 Santa Clara	16.85	14.32
4 Alameda	16.15	13.73
5 Contra Costa	16.53	14.05
6 Solano	15.37	13.06
7 Napa	15.84	13.46
8 Sonoma	18.10	15.39
9 Marin	20.92	17.78
10 Santa Cruz	13.29	11.30
11 Monterey	25.41	21.60
12 San Benito	22.43	19.07
13 San Joaquin	21.76	18.50
<b>TOTAL</b>	<b>16.20</b>	<b>13.77</b>

### City Data

2015 Base Year VMT Data

City	Total Employment	Home-Based Work VMT Production	Home-Based Work VMT Attraction
Burlingame	30940		504424

2015 VMT Metrics

City	Home-Based Work VMT Attr. per Employee	Threshold: 85% of commute per Employee
Burlingame	16.30	13.86

### TAZ Data

2015 Base Year VMT Data

TAZ	Total Employment	Home-Based Work VMT Production	Home-Based Work VMT Attraction
1949	4661	0	83509

2015 VMT Metrics

TAZ	Home-Based Work VMT Attr. per Employee	% HBW per Employee to reduce
1949	17.92	20.6%

**Appendix E – SB 743 Implementation TDM Strategy Assessment, Fehr  
& Peers**

**TECHNICAL MEMORANDUM**

**Date:** 2.26.19

**To:** Chris Gray (WRCOG), Chris Tzeng (WRCOG), Sarah Dominguez (SCAG), Mike Gainor (SCAG)

**From:** Ronald T. Milam, AICP, PTP and Jason Pack, PE

**Subject:** SB 743 Implementation TDM Strategy Assessment

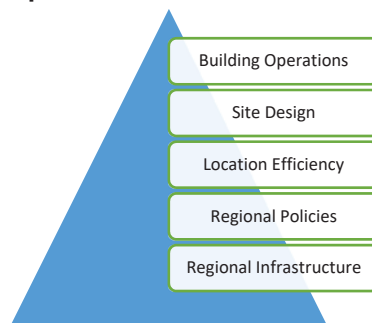
OC18-0567

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This technical memorandum summarizes our assessment of new research related to transportation demand management (TDM) effectiveness for reducing vehicle miles of travel (VMT). The purpose of this work was to compile new TDM information that has been published in research papers since release of the *Quantifying Greenhouse Gas Mitigation Measures*, CAPCOA, August 2010 and to identify those strategies suited to WRCOG jurisdictions given the rural and suburban land use context. The matrix in Attachment A summarizes the overall evaluation of all the CAPCOA strategies while the matrix in Attachment B identifies the top seven strategies suited for the study area.

This information can be used as part of the SB 743 implementation to determine potentially feasible VMT mitigation measures for individual land use projects in the WRCOG area. An important consideration for the mitigation effectiveness is the scale for TDM strategy implementation. The biggest effects of TDM strategies on VMT (and resultant emissions) derive from regional policies related to land use location efficiency and infrastructure investments that support transit, walking, and bicycling. While there are many measures that can influence VMT and emissions that relate to site design and building operations, they have smaller effects that are often dependent on final building tenants. **Figure 1** presents a conceptual illustration of the relative importance of scale.

**Figure 1: Transportation-Related GHG Reduction Measures**



Of the 50 transportation measures presented in the CAPCOA 2010 report *Quantifying Greenhouse Gas Mitigation Measures*, 41 are applicable at building and site level. The remaining nine are functions of, or depend on, site location and/ or actions by local and regional agencies or funders. **Table 1** summarizes the strategies according to the scope of implementation and the agents who would implement them.

**TABLE 1: SUMMARY OF TRANSPORTATION-RELATED CAPCOA MEASURES**

Scope	Agents	CAPCOA Strategies (see full CAPCOA list below)
Building Operations	Employer, Manager	<b>26 total</b> from five CAPCOA strategy groups: <ul style="list-style-type: none"> <li>• <b>3</b> from 3.2 Site Enhancements group</li> <li>• <b>3</b> from 3.3 Parking Pricing Availability group</li> <li>• <b>15</b> from 3.4 Commute Trip Reduction group</li> <li>• <b>2</b> from 3.5 Transit Access group</li> <li>• <b>3</b> from 3.7 Vehicle Operations group</li> </ul>
Site Design	Owner, Architect	<b>15 total</b> from three strategy groups: <ul style="list-style-type: none"> <li>• <b>6</b> from 3.1 Land Use group</li> <li>• <b>6</b> from 3.2 Site Enhancements group</li> <li>• <b>1</b> from 3.3 Parking group</li> <li>• <b>2</b> from 3.6 Road Access group</li> </ul>
Location Efficiency	Developer, Local Agency	<b>3 shared</b> with Regional and Local Policies
Alignment with Regional and Local Policies	Regional and local agencies	<b>3 shared</b> with Location Efficiency
Regional Infrastructure and Services	Regional and local agencies	<b>6 total</b>

Of these strategies, only a few are likely to be effective in a rural or suburban setting such as the WRCOG area. To help winnow the list, we reviewed how land use context could influence each strategy’s effectiveness and identified the seven for more detailed review. These strategies are described in Attachment B and listed below. Please note that disruptive trends, including but not limited to, transportation network companies (TNCs), autonomous vehicles (AVs), internet shopping, and micro-transit may affect the future effectiveness of these strategies.

1. Increase diversity of land uses – This strategy focuses on inclusion of mixed uses within projects or in consideration of the surrounding area to minimize vehicle travel in terms of both the number of trips and the length of those trips.
2. Provide pedestrian network improvements – This strategy focuses on creating a pedestrian network within the project and connecting to nearby destinations. Projects in the WRCOG area range in size, so the emphasis of this strategy for smaller projects would likely be the construction of network improvements that connect the project sites directly to nearby destinations. For larger projects, this strategy could focus on the development of a robust pedestrian network within the

project itself. Alternatively, implementation could occur through an impact fee program such as the TUMF or benefit/assessment district based on local or regional plans.

3. Provide traffic calming measures and low-stress bicycle network improvements – This strategy combines the CAPCOA research focused on traffic calming with new research on providing a low-stress bicycle network. Traffic calming creates networks with low vehicle speeds and volumes that are more conducive to walking and bicycling. Building a low-stress bicycle network produces a similar outcome. Implementation options are similar to strategy 2 above. One potential change in this strategy over time is that e-bikes (and e-scooters) could extend the effective range of travel on the bicycle network, which could enhance the effectiveness of this strategy.
4. Implement car-sharing program – This strategy reduces the need to own a vehicle or reduces the number of vehicles owned by a household by making it convenient to access a shared vehicle for those trips where vehicle use is essential. Note that implementation of this strategy would require regional or local agency implementation and coordination and would not likely be applicable for individual development projects.
5. Increase transit service frequency and speed – This strategy focuses on improving transit service convenience and travel time competitiveness with driving. While the WRCOG area has fixed route rail and bus service that could be enhanced, it's also possible that new forms of low-cost demand-responsive transit service could be provided. The demand-responsive service could be provided as subsidized trips by contracting to private TNCs or Taxi companies. Alternatively, a public transit operator could provide the subsidized service but would need to improve on traditional cost effectiveness by relying on TNC ride-hailing technology, using smaller vehicles sized to demand, and flexible driver employment terms where drivers are paid by trip versus by hour. This type of service would reduce wait times for travelers and improve the typical in-vehicle travel time compared to traditional transit. Note that implementation of this strategy would require regional or local agency implementation, substantial changes to current transit practices, and would not likely be applicable for individual development projects.
6. Encourage telecommuting and alternative work schedules – This strategy relies on effective internet access and speeds to individual project sites/buildings to provide the opportunity for telecommuting. The effectiveness of the strategy depends on the ultimate building tenants and this should be a factor in considering the potential VMT reduction.
7. Provide ride-sharing programs – This strategy focuses on encouraging carpooling and vanpooling by project site/building tenants and has similar limitations as strategy 6 above.

Because of the limitations noted above, strategies 1, 2, 3, 6, and 7 are initially considered the highest priorities for individual land use project mitigation subject to review and discussion with the project team and advisory committee.

The VMT reduction strategies can be quantified using CACPOA calculation methodologies and recent ARB research findings. Attachment C provides calculation methodologies for each of the mitigations provided above, along with their range of effectiveness.

Please review this information and let us know if you have any follow up questions.

**ATTACHMENT A**

Comparison of CAPCOA Strategies Versus New Research Since 2010

		New Information Since CAPCOA Was Published in 2010					
CAPCOA Category	CAPCOA #	CAPCOA Strategy	CAPCOA Reduction	Strength of Substantial Evidence for CEQA Impact Analysis?	Change in VMT reduction compared to CAPCOA	Literature or Evidence Cited	
Land Use/Location	3.1.1	LUT-1 Increase Density	0.8% - 3.0% VMT reduction due to increase in density	Adequate	<p>New information</p> <p>Increasing residential density is associated with lower VMT per capita. Increased residential density in areas with high jobs access may have a greater VMT change than increases in regions with lower jobs access.</p> <p>The range of reductions is based on a range of elasticities from -0.04 to -0.22. The low end of the reductions represents a -0.04 elasticity of demand in response to a 10% increase in residential units or employment density and a -0.22 elasticity in response to 50% increase to residential/employment density.</p>	<p>0.4% - 10.75%</p>	<p>Primary sources: Boarnet, M. and Handy, S. (2014). Impacts of Residential Density on Passenger Vehicle Use and Greenhouse Gas Emissions - Policy Brief and Technical Background Document. California Air Resources Board. Retrieved from: <a href="https://arb.ca.gov/cc/sb375/policies/policies.htm">https://arb.ca.gov/cc/sb375/policies/policies.htm</a></p> <p>Secondary source: Stevens, M. (2017). Does Compact Development Make People Drive Less? Journal of the American Planning Association, 83(1), 7-18.</p>
Land Use/Location	3.1.9	LUT-9 Improve Design of Development	3.0% - 21.3% reduction in VMT due to increasing intersection density vs. typical ITE suburban development	Adequate	<p>No update to CAPCOA literature; advise applying CAPCOA measure only to large developments with significant internal street structure.</p>	<p>Same</p>	N/A
Land Use/Location	3.1.4	LUT-4 Increase Destination Accessibility	6.7%-20% VMT reduction due to decrease in distance to major job center or downtown	Adequate	<p>Reduction in VMT due to increased regional accessibility (jobs gravity). Locating new development in areas with good access to destinations reduces VMT by reducing trip lengths and making walking, biking, and transit trips more feasible. Destination accessibility is measured in terms of the number of jobs (or other attractions) reachable within a given travel time, which tends to be highest at central locations and lowest at peripheral ones.</p>	<p>0.5%-12%</p>	<p>Primary sources: Handy, S. et al. (2014). Impacts of Network Connectivity on Passenger Vehicle Use and Greenhouse Gas Emissions - Policy Brief and Technical Background Document. California Air Resources Board. Retrieved from: <a href="https://arb.ca.gov/cc/sb375/policies/policies.htm">https://arb.ca.gov/cc/sb375/policies/policies.htm</a></p> <p>Handy, S. et al. (2013). Impacts of Regional Accessibility on Passenger Vehicle Use and Greenhouse Gas Emissions - Policy Brief and Technical Background Document. California Air Resources Board. Retrieved from: <a href="https://arb.ca.gov/cc/sb375/policies/policies.htm">https://arb.ca.gov/cc/sb375/policies/policies.htm</a></p> <p>Secondary source: Holtzclaw, et al. (2002.) Location Efficiency: Neighborhood and Socioeconomic Characteristics Determine Auto Ownership and Use - Studies in Chicago, Los Angeles, and Chicago. Transportation Planning and Technology, Vol. 25, pp. 1-27.</p>

Comparison of CAPCOA Strategies Versus New Research Since 2010

CAPCOA Category		APCOA #	APCOA Strategy	APCOA Reduction	Strength of Substantial Evidence for CEQA Impact Analysis?	New Information Since CAPCOA Was Published in 2010		
Land Use/ Location	3.1.13	LUT-3 Increase Diversity of Urban and Suburban Developments	9%-30% VMT reduction due to mixing land uses within a single development	Adequate	New Information	Change in VMT reduction compared to CAPCOA	Literature or Evidence Cited	
					<p>1) VMT reduction due to mix of land uses within a single development. Mixing land uses within a single development can decrease VMT (and resulting GHG emissions), since building users do not need to drive to meet all of their needs. 2) Reduction in VMT due to regional change in entropy index of diversity. Providing a mix of land uses within a single neighborhood can decrease VMT (and resulting GHG emissions), since trips between land use types are shorter and may be accommodated by non-auto modes of transport. For example when residential areas are in the same neighborhood as retail and office buildings, a resident does not need to travel outside of the neighborhood to meet his/her trip needs. At the regional level, reductions in VMT are measured in response to changes in the entropy index of land use diversity.</p>	<p>1) 0% - 12% 2) 0.3% - 4%</p>	<p>1) Ewing, R. and Cervero, R. (2010). Travel and the Built Environment - A Meta-Analysis. Journal of the American Planning Association, 76(3), 265-294. Cited in California Air Pollution Control Officers Association. (2010). Quantifying Greenhouse Gas Mitigation Measures. Retrieved from: <a href="http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf">http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf</a></p> <p>Frank, L., Greenwald, M., Kavagie, S., and Devlin, A. (2011). An Assessment of Urban Form and Pedestrian and Transit Improvements as an Integrated GHG Reduction Strategy. WSDOT Research Report WA-RD 765.1. Washington State Department of Transportation. Retrieved from: <a href="http://www.wsdot.wa.gov/research/reports/fullreports/765.1.pdf">http://www.wsdot.wa.gov/research/reports/fullreports/765.1.pdf</a></p> <p>Nasri, A. and Zhang, L. (2012). Impact of Metropolitan-Level Built Environment on Travel Behavior. Transportation Research Record: Journal of the Transportation Research Board, 2322(1), 75-79.</p> <p>Sadek, A. et al. (2011). Reducing VMT through Smart Land-Use Design. New York State Energy Research and Development Authority. Retrieved from: <a href="https://www.dot.ny.gov/divisions/engineering/technical-services/trans-r-and-d-repository/C-08-29%20Final%20Report_December%202011%20%82%29.pdf">https://www.dot.ny.gov/divisions/engineering/technical-services/trans-r-and-d-repository/C-08-29%20Final%20Report_December%202011%20%82%29.pdf</a></p> <p>Spears, S. et al. (2014). Impacts of Land-Use Mix on Passenger Vehicle Use and Greenhouse Gas Emissions- Policy Brief and Technical Background Document. California Air Resources Board. Retrieved from: <a href="https://arb.ca.gov/cc/63375/policies/policies.htm">https://arb.ca.gov/cc/63375/policies/policies.htm</a></p> <p>Zhang, Wengjia et al. "Short- and Long-Term Effects of Land Use on Reducing Personal Vehicle Miles of Travel."</p>	
					<p>1) VMT reduction when transit station is provided within 1/2 mile of development (compared to VMT for sites located outside 1/2 mile radius of transit). Locating high density development within 1/2 mile of transit will facilitate the use of transit by people traveling to or from the Project site. The use of transit results in a mode shift and therefore reduced VMT.</p> <p>2) Reduction in vehicle trips due to implementing TOD. A project with a residential/commercial center designed around a rail or bus station, is called a transit-oriented development (TOD). The project description should include, at a minimum, the following design features:</p> <ul style="list-style-type: none"> <li>• A transit station/stop with high-quality, high-frequency bus service located within a 5-10 minute walk (or roughly 1/4 mile from stop to edge of development), and/or</li> <li>• A rail station located within a 20 minute walk (or roughly 1/2 mile from station to edge of development)</li> <li>• Fast, frequent, and reliable transit service connecting to a high percentage of regional destinations</li> <li>• Neighborhood designed for walking and cycling</li> </ul>	<p>1) 0% - 5.8% 2) 0% - 7.3%</p>	<p>1) Lund, H. et al. (2004). Travel Characteristics of Transit-Oriented Development in California. Oakland, CA: Bay Area Rapid Transit District, Metropolitan Transportation Commission, and Caltrans.</p> <p>Tal, G. et al. (2013). Policy Brief on the Impacts of Transit Access (Distance to Transit) Based on a Review of the Empirical Literature. California Air Resources Board. Retrieved from: <a href="https://www.arb.ca.gov/cc/63375/policies/transitaccess/tra_mst_access_brief201313.pdf">https://www.arb.ca.gov/cc/63375/policies/transitaccess/tra_mst_access_brief201313.pdf</a></p> <p>2) Zamir, K. R. et al. (2014). Effects of Transit-Oriented Development on Trip Generation, Distribution, and Mode Share in Washington, D.C., and Baltimore, Maryland. Transportation Research Record: Journal of the Transportation Research Board, 2413, 45-53. DOI: 10.3141/2413-05</p>	
Land Use/ Location	3.1.15	LUT-5 Increase Transit Accessibility	0.5%-24.6% reduce in VMT due to locating a project near high-quality transit	Adequate				

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CAPCOA Category		CAPCOA #		CAPCOA Strategy		CAPCOA Reduction		Strength of Substantial Evidence for CEQA Impact Analysis?		New Information Since CAPCOA Was Published in 2010		
Land Use/ Location	3.1.6	LUT-6 Integrate Affordable and Below Market Rate Housing	0.04%-1.20% reduction in VMT for making up to 30% of housing units BMR	Weak - Should only be used where supported by local data on affordable housing trip generation.	New information	Change in VMT reduction compared to CAPCOA	Literature or Evidence Cited					
Neighborhood Site Enhancements	3.2.1	SDT-1 Provide Pedestrian Network Improvements	0%-2% reduction in VMT for creating a connected pedestrian network within the development and connecting to nearby destinations	Adequate	Observed trip generation indicates substantial local and regional variation in trip making behavior at affordable housing sites. Recommend use of ITE rates or local data for senior housing.	N/A	"Draft Memorandum: Infill and Complete Streets Study, Task 2.1: Local Trip Generation Study." Measuring the Mix: Developing new metrics for vehicle travel in LA. City of Los Angeles, April 19, 2017.					
Neighborhood Site Enhancements	3.2.2	SDT-2 Provide Traffic Calming Measures	0.25%-1% VMT reduction due to traffic calming on streets within and around the development	Adequate	VMT reduction due to provision of complete pedestrian networks. Only applies if located in an area that may be prone to having a less robust sidewalk network.	0.5%-5.7%	Handy, S. et al. (2014). Impacts of Pedestrian Strategies on Passenger Vehicle Use and Greenhouse Gas Emissions - Policy Brief and Technical Background Document. California Air Resources Board. Retrieved from: <a href="https://arb.ca.gov/cc/ab375/policies/policies.htm">https://arb.ca.gov/cc/ab375/policies/policies.htm</a>					
Neighborhood Site Enhancements	3.2.3	SDT-3 Implement an NEV Network	0.5%-12.7% VMT reduction for GHG-emitting vehicles, depending on level of local NEV penetration	Weak - not recommended without supplemental data.	Reduction in VMT due to expansion of bike networks in urban areas. Strategy only applies to bicycle facilities that provide a dedicated lane for bicyclists or a completely separated right-of-way for bicycles and pedestrians.	0%-1.7%	Zhabbi, S. et al. (2016). Exploring the link between the neighborhood typologies, bicycle infrastructure and commuting cycling over time and the potential impact on commuter GHG emissions. Transportation Research Part D: Transport and Environment 47, 89-103.					
Neighborhood Site Enhancements					Project-level definition: Enhance bicycle network citywide (or at similar scale) such that a building entrance or bicycle parking is within 200 yards walking or bicycling distance from a bicycle network that connects to at least one of the following: at least 10 diverse uses; a school or employment center, if the project total floor area is 50% or more residential; or a bus rapid transit stop, light or heavy rail station, commuter rail station, or ferry terminal. All destinations must be 3-mile bicycling distance from project site. Include educational campaigns to encourage bicycling.	N/A	City of Lincoln, M/HM Engineers & Surveyors, Neighborhood Electric Vehicle Transportation Program Final Report, Issued 04/05/05, and City of Lincoln, A Report to the California Legislature as required by Assembly Bill 2353, Neighborhood Electric Vehicle Transportation Plan Evaluation, January 1, 2008. Cited in: California Air Pollution Control Officers Association. (2010). Quantifying Greenhouse Gas Mitigation Measures. Retrieved from: <a href="http://www.capcoa.org/app-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf">http://www.capcoa.org/app-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf</a>					

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		New Information Since CAPCOA Was Published in 2010			
CAPCOA Category	CAPCOA #	CAPCOA Strategy	CAPCOA Reduction	Strength of Substantial Evidence for CEQA Impact Analysis?	
Neighborhood Site Enhancements	3.4.9	TRT-9 Implement Car-Sharing Program	0.4% - 0.7% VMT reduction due to lower vehicle ownership rates and general shift to non-driving modes	Adequate	
			<p><b>New information</b></p> <p>Vehicle trip reduction due to car-sharing programs; reduction assumes 1%-5% penetration rate. Implementing car-sharing programs allows people to have on-demand access to a shared fleet of vehicles on an as-needed basis, as a supplement to trips made by non-SOV modes. Transit station-based programs focus on providing the "last-mile" solution and link transit with commuters' final destinations. Residential-based programs work to substitute entire household based trips. Employer-based programs provide a means for business/day trips for alternative mode commuters and provide a guaranteed ride home option. The reduction shown here assumes a 1%-5% penetration rate.</p>	<p><b>Change in VMT reduction compared to CAPCOA</b></p> <p>0.3%-1.6%</p>	<p><b>Literature or Evidence Cited</b></p> <p>Lovejoy, K. et al. (2013). Impacts of Cashback on Passenger Vehicle Use and Greenhouse Gas Emissions - Policy Brief and Technical Background Document. California Air Resources Board. Retrieved from: <a href="https://arb.ca.gov/cc/ab375/policies/policies.htm">https://arb.ca.gov/cc/ab375/policies/policies.htm</a></p> <p>Need to verify with more recent UCD research.</p>
Parking Pricing	3.3.1	PDT-1 Limit Parking Supply	5%-12.5% VMT reduction in response to reduced parking supply vs. ITE parking generation rate	Weak - not recommended. Fehr & Peers has developed new estimates for residential land use only that may be used.	
			<p><b>New information</b></p> <p>CAPCOA reduction range derived from estimate of reduced vehicle ownership, not supported by observed trip or VMT reductions. Evidence is available for mode shift due to presence/absence of parking in high-transit urban areas, additional investigation ongoing</p>	<p><b>Change in VMT reduction compared to CAPCOA</b></p> <p>Higher</p>	<p>Fehr &amp; Peers estimated a linear regression formula based on observed data from multiple locations. Resulting equation produces maximum VMT reductions for residential land use only of 30% in suburban locations and 50% in urban locations based on parking supply percentage reductions.</p>
Parking Pricing	3.3.2	PDT-2 Unbundle Parking Costs from Property Cost	2.6% -13% VMT reduction due to decreased vehicle ownership rates	Adequate - conditional on the agency not requiring parking minimums and pricing/managing on-street parking (i.e., residential parking permit districts, etc.)	
			<p><b>New information</b></p> <p>Reduction in VMT, primarily for residential uses, based on range of elasticities for vehicle ownership in response to increased residential parking fees. Does not account for self-selection. Only applies if the city does not require parking minimums and if on-street parking is priced and managed (i.e., residential parking permit districts).</p>	<p><b>Change in VMT reduction compared to CAPCOA</b></p> <p>2%-12%</p>	<p>Victoria Transport Policy Institute (2009). Parking Requirement Impacts on Housing Affordability. Retrieved March 2010 from: <a href="http://www.vtpi.org/park-hou.pdf">http://www.vtpi.org/park-hou.pdf</a>.</p>

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				New Information Since CAPCOA Was Published in 2010			
CAPCOA Category	CAPCOA #	CAPCOA Strategy	CAPCOA Reduction	Strength of Substantial Evidence for CEQA Impact Analysis?	Change in VMT reduction compared to CAPCOA	Literature or Evidence Cited	
Parking Pricing	3.3.3	PDT-3 Implement Market Price Public Parking	2.0%-5.5% VMT reduction due to "park once" behavior and disincentive to driving	Adequate	<p><b>New information</b></p> <p>Implement a pricing strategy for parking by pricing all central business district/employment center/retail center on-street parking. It will be priced to encourage "park once" behavior. The benefit of this measure above that of paid parking at the project only is that it deters parking spillover from project supplied parking to other public parking nearby, which undermines the vehicle miles traveled (VMT) benefits of project pricing. It may also generate sufficient area-wide mode shifts to justify increased transit service to the area.</p> <p>VMT reduction applies to VMT from visitor/customer trips only. Reductions higher than top end of range from CAPCOA report apply only in conditions with highly constrained on-street parking supply and lack of comparably-priced off-street parking.</p>	2.8%-14.5%	<p>Clinch, J.P. and Kelly, J.A. (2003). Temporal Variance Of Revealed Preference On-Street Parking Price Elasticity. Dublin: Department of Environmental Studies, University College Dublin. Retrieved from: <a href="http://www.ucd.ie/gpsp/research/workingpapers/2004/04-02.pdf">http://www.ucd.ie/gpsp/research/workingpapers/2004/04-02.pdf</a>. Cited in Victoria Transport Policy Institute (2017). Transportation Elasticities: How Prices and Other Factors Affect Travel Behavior. Retrieved from: <a href="http://www.vtpi.org/dtmv/dtmv1.htm">http://www.vtpi.org/dtmv/dtmv1.htm</a></p> <p>Hensher, D. and King, J. (2001). Parking Demand and Responsiveness to Supply, Price and Location in Sydney Central Business District. Transportation Research A, 35(3), 177-196.</p> <p>Millard-Ball, A. et al. (2013). Is the curb 80% full or 20% empty? Assessing the impacts of San Francisco's parking pricing experiment. Transportation Research Part A, 63(2014), 76-92.</p> <p>Shoup, D. (2011). The High Cost of Free Parking. APA Planners Press. p. 290. Cited in Pierce, G. and Shoup, D. (2013). Getting the Prices Right. Journal of the American Planning Association. 79(1), 67-81.</p>
Transit System	3.5.3	TST-3 Expand Transit Network	0.1-0.2% VMT reduction in response to increase in transit network coverage	Adequate	<p>Reduction in vehicle trips due to increased transit service hours or coverage. Low end of reduction is typical of project-level implementation (payment of impact fees and/or localized improvements).</p>	0.1%-10.5%	Handy, S. et al. (2013). Impacts of Transit Service Strategies on Passenger Vehicle Use and Greenhouse Gas Emissions - Policy Brief and Technical Background Document. California Air Resources Board. Retrieved from: <a href="https://arb.ca.gov/cc/ab375/policies/policies.htm">https://arb.ca.gov/cc/ab375/policies/policies.htm</a>
Transit System	3.5.4	TST-4 Increase Transit Service Frequency/Speed	0.02%-2.5% VMT reduction due to reduced headways and increased speed and reliability	Adequate	<p>Reduction in vehicle trips due to increased transit frequency/decreased headway. Low end of reduction is typical of project-level implementation (payment of impact fees and/or localized improvements).</p>	0.3%-6.3%	Handy, S. et al. (2013). Impacts of Transit Service Strategies on Passenger Vehicle Use and Greenhouse Gas Emissions - Policy Brief and Technical Background Document. California Air Resources Board. Retrieved from: <a href="https://arb.ca.gov/cc/ab375/policies/policies.htm">https://arb.ca.gov/cc/ab375/policies/policies.htm</a>
Transit System	3.5.1	TST-1 Provide a Bus Rapid Transit System	0.02%-3.2% VMT reduction by converting standard bus system to BRT system	Adequate	<p>No new information identified.</p>	Same	N/A
Commute Trip Reduction	3.4.1	TRT-1 Implement CTR Program - Voluntary	1.0%-6.2% commute VMT reduction due to employer-based mode shift program	Adequate - Effectiveness is building/tenant specific. Do not use with "TRT-2 Implement CTR Program - Required Implementation/Monitoring" or with CAPCOA strategies TRT-3.4.3 through TRT-3.4.9.	<p>Reduction in vehicle trips in response to employer-led TDM programs. The CTR program should include all of the following to apply the effectiveness reported by the literature:</p> <ul style="list-style-type: none"> <li>• Carpooling encouragement</li> <li>• Ride-matching assistance</li> <li>• Preferential carpool parking</li> <li>• Flexible work schedules for carpools</li> <li>• Half-time transportation coordinator</li> <li>• Vanpool assistance</li> <li>• Bicycle end-trip facilities (parking, showers and lockers)</li> </ul>	1.0%-6.0%	Boarnet, M. et al. (2014). Impacts of Employer-Based Trip Reduction Programs and Vanpools on Passenger Vehicle Use and Greenhouse Gas Emissions - Policy Brief and Technical Background Document. California Air Resources Board. Retrieved from: <a href="https://arb.ca.gov/cc/ab375/policies/policies.htm">https://arb.ca.gov/cc/ab375/policies/policies.htm</a>
Commute Trip Reduction	3.4.2	TRT-2 Implement CTR Program - Required Implementation/Monitoring	4.2%-21.0% commute VMT reduction due to employer-based mode shift program with required monitoring and reporting	Adequate - Effectiveness is building/tenant specific. Do not use with "TRT-1 Implement CTR Program - Voluntary" or with CAPCOA strategies TRT-3.4.3 through TRT-3.4.9.	<p>Limited evidence available. Anecdotal evidence shows high investment produces high VMT/vehicle trip reductions at employment sites with monitoring requirements and specific targets.</p>	Same	Nelson/Nygard (2008). South San Francisco Mode Share and Parking Report for Genentech, Inc. (p. 8) Cited in: California Air Pollution Control Officers Association. (2010). Quantifying Greenhouse Gas Mitigation Measures. Retrieved from: <a href="http://www.caipcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf">http://www.caipcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf</a>

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New Information Since CAPCOA Was Published in 2010				
CAPCOA Category	CAPCOA #	CAPCOA Strategy	CAPCOA Reduction	Strength of Substantial Evidence for CEQA Impact Analysis?
Commuter Trip Reduction	3.4.4	TRT-4 Implement Subsidized or Discounted Transit Program	0.3%-20% commute VMT reduction due to transit subsidy of up to \$6/day	Adequate - Effectiveness is building/tenant specific. Do not use with "TRT-1 Implement CTR Program - Voluntary" or "TRT-2 Implement CTR Program - Required Implementation/Monitoring."
Commuter Trip Reduction	3.4.15	TRT-15 Employee Parking Cash-Out	0.6%-7.7% commute VMT reduction due to implementing employee parking cash out	Weak - Effectiveness is building/tenant specific. Research data is over 10 years old (1997).
Commuter Trip Reduction	3.4.14	TRT-14 Price Workplace Parking	0.1%-19.7% commute VMT reduction due to mode shift	Adequate - Effectiveness is building/tenant specific.
Commuter Trip Reduction	3.4.6	TRT-6 Encourage Telecommuting and Alternative Work Schedules	0.07%-5.5% commute VMT reduction due to reduced commute trips	Adequate - Effectiveness is building/tenant specific. Do not use with "TRT-1 Implement CTR Program - Voluntary" or "TRT-2 Implement CTR Program - Required Implementation/Monitoring."
Commuter Trip Reduction	3.4.7	1) TRT-7 Implement CTR Marketing 2) Launch Targeted Behavioral Interventions	0.8%-4.0% commute VMT reduction due to employer marketing of alternatives	Adequate - Effectiveness is building/tenant specific. Do not use with "TRT-1 Implement CTR Program - Voluntary" or "TRT-2 Implement CTR Program - Required Implementation/Monitoring."
Commuter Trip Reduction	3.4.11	TRT-11 Provide Employer-Sponsored Vanpool/Shuttle	0.3%-13.4% commute VMT reduction due to employer-sponsored vanpool and/or shuttle service	Adequate - Effectiveness is building/tenant specific.

New Information Since CAPCOA Was Published in 2010		
Change in VMT reduction compared to CAPCOA	New information	Literature or Evidence Cited
1) 0.3%-14% 2) 0.3%-16% 3) 0.1% to 6.9%	1) Reduction in vehicle trips in response to reduced cost of transit use, assuming that 10-50% of new bus trips replace vehicle trips; 2) Reduction in commute trip VMT due to employee benefits that include transit 3) Reduction in all vehicle trips due to reduced transit fares system-wide, assuming 25% of new transit trips would have been vehicle trips.	1) Victoria Transport Policy Institute. (2017). Understanding Transport Demands and Elasticities. Online TDM Encyclopedia. Retrieved from: <a href="http://www.vtpi.org/dm/dm11.htm">http://www.vtpi.org/dm/dm11.htm</a> 2) Carolina, P. et al. (2016). Do Employee Commuter Benefits Increase Transit Ridership? Evidence from the NY-NJ Region. Washington, DC: Transportation Research Board, 96th Annual Meeting. 3) Handy, S. et al. (2013). Impacts of Transit Service Strategies on Passenger Vehicle Use and Greenhouse Gas Emissions - Policy Brief and Technical Background Document. California Air Resources Board. Retrieved from: <a href="https://arb.ca.gov/cc/b3375/policies/policies.htm">https://arb.ca.gov/cc/b3375/policies/policies.htm</a>
3%-7.7%	Shoup, D. (1997). Evaluating the Effects of Cashing Out Employer-Paid Parking: Eight Case Studies. Transport Policy. California Air Resources Board. Retrieved from: <a href="https://www.arb.ca.gov/research/apr/past/93-308a.pdf">https://www.arb.ca.gov/research/apr/past/93-308a.pdf</a> . This citation was listed as an alternative literature in CAPCOA.	Shoup, D. (1997). Evaluating the Effects of Cashing Out Employer-Paid Parking: Eight Case Studies. Transport Policy. California Air Resources Board. Retrieved from: <a href="https://www.arb.ca.gov/research/apr/past/93-308a.pdf">https://www.arb.ca.gov/research/apr/past/93-308a.pdf</a> . This citation was listed as an alternative literature in CAPCOA.
0.5%-14%	Reduction in commute vehicle trips due to priced workplace parking; effectiveness depends on availability of alternative modes. Workplace parking pricing may include: explicitly charging for parking, implementing above market rate pricing, validating parking only for invited guests, not providing employee parking and transportation allowances, and educating employees about available alternatives.	Primary sources: Concas, S. and Nayak, N. (2012). A Meta-Analysis of Parking Price Elasticity. Washington, DC: Transportation Research Board, 2012 Annual Meeting. Dale, S. et al. (2016). Evaluating the Impact of a Workplace Parking Levy on Local Traffic Congestion: The Case of Nottingham UK. Washington, DC: Transportation Research Board, 96th Annual Meeting. Secondary sources: Victoria Transport Policy Institute. (2017). Understanding Transport Demands and Elasticities. Online TDM Encyclopedia. Retrieved from: <a href="http://www.vtpi.org/dm/dm11.htm">http://www.vtpi.org/dm/dm11.htm</a> Spears, S. et al. (2014). Impacts of Parking Pricing on Passenger Vehicle Use and Greenhouse Gas Emissions - Policy Brief and Technical Background Document. California Air Resources Board. Retrieved from: <a href="https://arb.ca.gov/cc/b3375/policies/policies.htm">https://arb.ca.gov/cc/b3375/policies/policies.htm</a>
0.2%-4.5%	VMT reduction due to adoption of telecommuting. Alternative work schedules could take the form of staggered starting times, flexible schedules, or compressed work weeks.	Handy, S. et al. (2013). Policy Brief on the Impacts of Telecommuting Based on a Review of the Empirical Literature. California Air Resources Board. Retrieved from: <a href="https://www.arb.ca.gov/cc/b3375/policies/telecommuting/telecommuting_brief2013.pdf">https://www.arb.ca.gov/cc/b3375/policies/telecommuting/telecommuting_brief2013.pdf</a>
1) 0.9% to 26% 2) 1%-6%	1) Vehicle trips reduction due to CTR marketing; 2) Reduction in VMT from institutional trips due to targeted behavioral intervention programs	1) Pratt, Dick. Personal communication regarding the Draft of TCRP 95 Traveler Response to Transportation System Changes - Chapter 19 Employer and Institutional TDM Strategies. Transit Cooperative Research Program. Cited in California Air Pollution Control Officers Association. (2010). Quantifying Greenhouse Gas Mitigation Measures. Retrieved from: <a href="http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf">http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf</a> Dill, J. and Mohr, C. (2010). Long-Term Evaluation of Individualized Marketing Programs for Travel Demand Management. Portland, OR: Transportation Research and Education Center (TREC). Retrieved from: <a href="http://pdxscholar.library.pdx.edu/usp_fac">http://pdxscholar.library.pdx.edu/usp_fac</a> 2) Brown, A. and Ralph, K. (2017). "The Right Time and Place to Change Travel Behavior: An Experimental Study." Washington, DC: Transportation Research Board, 2017 Annual Meeting. Retrieved from: <a href="https://trid.tib.org/view.aspx?id=1437253">https://trid.tib.org/view.aspx?id=1437253</a>
1) 0.5%-5.0% 2) 0.3%-7.4% 3) 1.4%-6.8%	1) Reduction in commute vehicle trips due to implementing employer-sponsored vanpool and shuttle programs; 2) Reduction in commute vehicle trips due to vanpool incentive programs; 3) Reduction in commute vehicle trips due to employer shuttle programs	1) Concas, Sainio, Winters, Philip, Wambalaba, Francis. (2005). Fare Pricing Elasticity, Subsidies, and Demand for Vanpool Services. Transportation Research Record: Journal of the Transportation Research Board, 1924, pp 215-223. 2) Victoria Transport Policy Institute. (2015). Ridesharing, Carpooling and Vanpooling. Online TDM Encyclopedia. Retrieved from: <a href="http://vtpi.org/dm/dm34.htm">http://vtpi.org/dm/dm34.htm</a> 3) ICE. (2014). GHG Impacts for Commuter Shuttles Pilot Program.

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		New Information Since CAPCOA Was Published in 2010					
CAPCOA Category	CAPCOA #	CAPCOA Strategy	CAPCOA Reduction	Strength of Substantial Evidence for CEQA Impact Analysis?	Change in VMT reduction compared to CAPCOA	Literature or Evidence Cited	
Commuter Trip Reduction	3.4.3	TRT-3 Provide Ride-Sharing Programs	1%-15% commuter VMT reduction due to employer ride share coordination and facilities	Adequate - Effectiveness is building/tenant specific. Do not use with "TRT-1 Implement CTR Program - Voluntary" or "TRT-2 Implement CTR Program - Required Implementation/Monitoring."	<p>New information</p> <p>Commuter vehicle trips reduction due to employer ride-sharing programs. Promote ride-sharing programs through a multi-faceted approach such as:</p> <ul style="list-style-type: none"> <li>• Designating a certain percentage of parking spaces for ride sharing vehicles</li> <li>• Designating adequate passenger loading and unloading and waiting areas for ride-sharing vehicles</li> <li>• Providing an app or website for coordinating rides</li> </ul>	2.5%-8.3%	Victoria Transport Policy Institute. (2015). Ridesharing: Carpooling and Vanpooling. Online TDM Encyclopedia. Retrieved from: <a href="http://vtpi.org/tdm/dms34.htm">http://vtpi.org/tdm/dms34.htm</a>
Commuter Trip Reduction	3.4.10	TRT-10 Implement a School Pool Program	7.2%-15.8% reduction in school VMT due to school pool implementation	Adequate - School VMT only.	Limited new evidence available, not conclusive	Same	Transportation Demand Management Institute of the Association for Commuter Transportation. TDM Case Studies and Commuter Testimonials. Prepared for the US EPA, 1997. (p. 10, 36-38)
Commuter Trip Reduction	3.4.13	TRT-13 Implement School Bus Program	38%-43% reduction in school VMT due to school bus service implementation	Adequate - School VMT only.	<p>VMT reduction for school trips based on data beyond a single school district.</p> <p>School district boundaries are also a factor to consider. VMT reduction does not appear to be a factor that was considered in a select review of CA boundaries.</p> <p>VMT reductions apply to school trip VMT only.</p>	5%-30%	WayToGo 2015 Annual Report. Accessed on March 12, 2017 from <a href="http://www.waytogo.org/sites/default/files/attachments/waytogo-annual-report-2015.pdf">http://www.waytogo.org/sites/default/files/attachments/waytogo-annual-report-2015.pdf</a>
Not Applicable - not a CAPCOA strategy	Not Applicable - not a CAPCOA strategy	Not Applicable - not a CAPCOA strategy	Not Applicable - not a CAPCOA strategy	Not Applicable - not a CAPCOA strategy	<p>Bikeshare car trip substitution rate of 7-19% based on data from Washington DC, and Minneapolis/St. Paul. Annual VMT reduction of 151,000 and 57,000, respectively. Includes VMT for rebalancing and maintenance.</p> <p>VMT reduction of 0.023 miles per day per bikeshare member estimated for Bay Area bikeshare, utilizing Minneapolis/St. Paul data from study above.</p>	<p>57,000-151,000 annual VMT reduction, based on two large US cities.</p> <p>VMT reduction of 0.023 miles per day per member, based on one large US city estimate.</p>	<p>Filshman, E., Washington, S., &amp; Huoworth, N. (2014). Bike share's impact on car use: Evidence from the United States, Great Britain, and Australia. Transportation Research Part D: Transport and Environment, 31, 13-20.</p> <p>TDM Methodology: Impact of Carsharing Membership, Transit Passes, Bikesharing Membership, Unbundled Parking, and Parking Supply Reductions on Driving. Center for Neighborhood Technology. Peter Haas and Cindy Copp, with Transform staff, May 5, 2016.</p>

**ATTACHMENT B**

TDM STRATEGY EVALUATION - DRAFT V 1.0



Relevant Strategies for Implementation in WRCOG Jurisdictions Due to Land Use Context

				New Information Since CAPCOA Was Published in 2010		Literature or Evidence Cited	
CAPCOA Category	CAPCOA #	CAPCOA Strategy	CAPCOA Reduction	Strength of Substantial Evidence for CEQA Impact Analysis?	New Information	Change in VMT reduction compared to CAPCOA(1)	
Land Use/ Location	3.1.3	LUT-3 Increase Diversity of Urban and Suburban Developments	9%-30% VMT reduction due to mixing land uses within a single development	Adequate	1) VMT reduction due to mix of land uses within a single development; 2) Reduction in VMT due to regional change in entropy index of diversity.	1) 0% - 12% 2) 0.3% - 4%	1) Ewing, R. and Cervero, R. (2010). Travel and the Built Environment - A Meta-Analysis. Journal of the American Planning Association 76(3):285-294. Cited in California Air Pollution Control Officers Association. (2010). Quantifying Greenhouse Gas Mitigation Measures. Retrieved from: <a href="http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf">http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf</a>  Frank, L., Greenwald, M., Kawagie, S., and Devlin, A. (2011). An Assessment of Urban Form and Pedestrian and Transit Improvements as an Integrated GHG Reduction Strategy. WSDOT Research Report WA-RD 765.1. Washington State Department of Transportation. Retrieved from: <a href="http://www.wsdot.wa.gov/research/reports/fullreports/765.1.pdf">http://www.wsdot.wa.gov/research/reports/fullreports/765.1.pdf</a>  Nasri, A. and Zhang, L. (2012). Impact of Metropolitan-Level Built Environment on Travel Behavior. Transportation Research Record: Journal of the Transportation Research Board, 2322(1), 75-79.  Sadek, A. et al. (2011). Reducing VMT through Smart Land-Use Design. New York State Energy Research and Development Authority. Retrieved from: <a href="https://www.dot.ny.gov/divisions/engineering/technical-services/trans-r-and-d-repository/C-08-29%20Final%20Report_December%202011%20%282%29.pdf">https://www.dot.ny.gov/divisions/engineering/technical-services/trans-r-and-d-repository/C-08-29%20Final%20Report_December%202011%20%282%29.pdf</a>  Spears, S. et al. (2014). Impacts of Land-Use Mix on Passenger Vehicle Use and Greenhouse Gas Emissions - Policy Brief and Technical Background Document. California Air Resources Board. Retrieved from: <a href="https://arb.ca.gov/cc/ab375/policies/policies.htm">https://arb.ca.gov/cc/ab375/policies/policies.htm</a>  Zhang, Wengjia et al. "Short- and Long-Term Effects of Land Use on Reducing Personal Vehicle Miles of Travel."
Neighborhood Site Enhancements	3.2.1	SDT-1 Provide Pedestrian Network Improvements	0%-2% reduction in VMT for creating a connected pedestrian network within the development and connecting to nearby destinations	Adequate	VMT reduction due to provision of complete pedestrian networks.	0.5%-5.7%	Handy, S. et al. (2014). Impacts of Pedestrian Strategies on Passenger Vehicle Use and Greenhouse Gas Emissions - Policy Brief and Technical Background Document. California Air Resources Board. Retrieved from: <a href="https://arb.ca.gov/cc/ab375/policies/policies.htm">https://arb.ca.gov/cc/ab375/policies/policies.htm</a>
Neighborhood Site Enhancements	3.2.2	SDT-2 Provide Traffic Calming Measures	0.25%-1% VMT reduction due to traffic calming on streets within and around the development	Adequate	Reduction in VMT due to building out a low-stress bike network; reduction in VMT due to expansion of bike networks in urban areas.	0%-1.7%	1) California Air Resources Board. (2016). Greenhouse Gas Quantification Methodology for the California Transportation Commission Active Transportation Program. Greenhouse Gas Reduction Fund Fiscal Year 2016-17. Retrieved from: <a href="https://www.arb.ca.gov/cc/capandtrade/auctionproceeds/ctc_atp_finalqtr_16-17.pdf">https://www.arb.ca.gov/cc/capandtrade/auctionproceeds/ctc_atp_finalqtr_16-17.pdf</a>  2) Zahabi, S. et al. (2016). Exploring the link between the neighborhood typologies, bicycle infrastructure and commuting cycling over time and the potential impact on commuter GHG emissions. Transportation Research Part D: Transport and Environment. 47, 89-103.
Neighborhood Site Enhancements	3.4.9	TRT-9 Implement Car-Sharing Program	0.4% - 0.7% VMT reduction due to lower vehicle ownership rates and general shift to non-driving modes	Adequate	Vehicle trip reduction due to car-sharing programs; reduction assumes 1%-5% penetration rate.  Car sharing effect on VMT is still evolving due to TNC effects. UCD research showed less effect on car ownership due to car sharing participation and an uncertain effect on VMT.	0.3%-1.6%	Lowjoy, K. et al. (2013). Impacts of Carsharing on Passenger Vehicle Use and Greenhouse Gas Emissions - Policy Brief and Technical Background Document. California Air Resources Board. Retrieved from: <a href="https://arb.ca.gov/cc/ab375/policies/policies.htm">https://arb.ca.gov/cc/ab375/policies/policies.htm</a>  Cleadow, Regina R., and Mishra, Gouri Shankar. (2017). Disruptive Transportation: The Adoption, Utilization, and Impacts of Ride-Hailing in the United States. UC Davis, Institute of Transportation Studies. Research Report - UCD-ITS-RR-17-07.
Transit System	3.5.4	TST-4 Increase Transit Service Frequency/Speed	0.02%-2.5% VMT reduction due to reduced headways and increased speed and reliability	Adequate	Reduction in vehicle trips due to increased transit frequency/decreased headway.	0.3%-6.3%	Handy, S. et al. (2013). Impacts of Transit Service Strategies on Passenger Vehicle Use and Greenhouse Gas Emissions - Policy Brief and Technical Background Document. California Air Resources Board. Retrieved from: <a href="https://arb.ca.gov/cc/ab375/policies/policies.htm">https://arb.ca.gov/cc/ab375/policies/policies.htm</a>

Relevant Strategies for Implementation in WRCOG Jurisdictions Due to Land Use Context

		New Information Since CAPCOA Was Published in 2010				
CAPCOA Category	CAPCOA #	CAPCOA Strategy	CAPCOA Reduction	Strength of Substantial Evidence for CEQA Impact Analysis?	Change in VMT reduction compared to CAPCOA(1)	Literature or Evidence Cited
Commuter Trip Reduction	3.4.6	TRT-6 Encourage Telecommuting and Alternative Work Schedules	0.07%-5.5% commute VMT reduction due to reduced commute trips	Adequate - Effectiveness is building/tenant specific. Do not use with "TRT-1 Implement CTR Program - Voluntary" or "TRT-2 Implement CTR Program - Required Implementation/Monitoring."	New information due to adoption of telecommuting 0.2%-4.5%	Handy, S. et al. (2013). Policy Brief on the Impacts of Telecommuting Based on a Review of the Empirical Literature. California Air Resources Board. Retrieved from: <a href="https://www.arb.ca.gov/cr/sb3375/policies/telecommuting/telecommuting_brief2013.pdf">https://www.arb.ca.gov/cr/sb3375/policies/telecommuting/telecommuting_brief2013.pdf</a>
Commuter Trip Reduction	3.4.3	TRT-3 Provide Ride-Sharing Programs	1%-15% commute VMT reduction due to employer ride share coordination and facilities	Adequate - Effectiveness is building/tenant specific. Do not use with "TRT-1 Implement CTR Program - Voluntary" or "TRT-2 Implement CTR Program - Required Implementation/Monitoring."	Commuter vehicle trips reduction due to employer ride-sharing programs 2.5%-8.3%	Victoria Transport Policy Institute. (2015). Ride-sharing: Carpooling and Vanpooling. Online TDM Encyclopedia. Retrieved from: <a href="http://vtpi.org/vdm/dm34.htm">http://vtpi.org/vdm/dm34.htm</a>

NOTES:

(1) For specific VMT reduction ranges, refer to the cited literature.

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ATTACHMENT C

## **Increase Diversity of Urban and Suburban Developments (Mixed Use)**

### **Range of Effectiveness:**

0 – 12% vehicle miles traveled (VMT) reduction due to a mix of land uses within a single development (Ewing and Cervero, 2010).

0.3 – 4% VMT reduction due to change in land use entropy index (i.e., land use mix) within a project's sphere of influence (Zhang).

### **Measure Description:**

Having different types of land uses near one another can decrease VMT since trips between land use types are shorter and may be accommodated by non-auto modes of transport. For example, when residential areas are in the same neighborhood as retail and office buildings, a resident does not need to travel outside of the neighborhood to meet his/her trip needs. A description of diverse uses for urban and suburban areas is provided below (CAPCOA 2010, p. 162)

#### *Urban:*

An urban project is predominantly characterized by properties on which various uses, such as office, commercial, institutional, and residential, are combined in a single building or on a single site in an integrated development project with functional interrelationships and a coherent physical design. These mixed-use developments should encourage walking and other non-auto modes of transport from residential to office/commercial/institutional locations (and vice versa). The residential units should be within a quarter mile of parks, schools, or other civic uses. These projects minimize the need for external trips by including services/facilities for day care, banking/ATM, restaurants, vehicle refueling, and shopping (CAPCOA 2010, p. 162).

#### *Suburban:*

A suburban project has at least three of the following on site and/or offsite within a quarter mile: residential development, retail development, park, open space, or office. These mixed-use developments should encourage walking and other non-auto modes of transport from residential to office/commercial locations (and vice versa). These projects minimize the need for external trips by including services/facilities for day care, banking/ATM, restaurants, vehicle refueling, and shopping (CAPCOA 2010, p. 162).

### **Measure Applicability:**

- Urban and suburban context
- Negligible impact in a rural context (unless the project is a master-planned community)
- Appropriate for mixed-use projects

### **Inputs:**

The following information needs to be provided by the project applicant:

- Percentage of each land use type in the project

**Mitigation Method:**

$$\% \text{ VMT Reduction} = \text{Land Use} \times E_{\text{Diversity}}$$

(not to exceed 15% for non – work trips and 25% for commute trips)

Where:

$$\text{Land Use} = (\text{Land Use Index} - 0.15)/0.15 \text{ (not to exceed 500\% increase)}$$

$$\text{Land Use Index} = -a/\ln(6)$$

$$a = \sum_{i=1}^6 a_i \times \ln(a_i) \text{ (Song and Knaap, 2004)}$$

$$a_i = \text{Building floor area of land use } i / \text{total square feet of project land area}$$

- $a_1 = \text{Single family residential}$
- $a_2 = \text{Multifamily residential}$
- $a_3 = \text{Commercial}$
- $a_4 = \text{Industrial}$
- $a_5 = \text{Institutional}$
- $a_6 = \text{Park}$

$$E_{\text{Diversity}} = \text{Elasticity of VMT with respect to land use index} = 0.02 \text{ to } 0.08 \text{ [4]}$$

If land use  $a_i$  is not present, set  $a_i$  equal to 0.01

**Discussion:**

In the above calculation, a land use index of 0.15 is used as a baseline representing a development with a single land use. There are two separate maxima that should be noted: an effective cap of 500% on the allowable percentage increase of land use index and a cap of 15% and 25% on percent VMT reduction for non-work and commute trips, respectively. The 500 percent cap reflects the expected change in a land use index from 0.15 to 0.90, or from single use to a nearly equal balance of all six uses included in this method. The purpose for the 15% and 25% caps is to limit the influence of any single environmental factor (such as diversity). This emphasizes that community designs that implement multiple land use strategies (such as density, design, diversity, etc.) will show more of a reduction than relying on improvements from a single land use factor (CAPCOA 2010, p. 164).

The land use (or entropy) index measurement looks at the mix of land uses of a development. An index of 0 indicates a single land use while 1 indicates a full mix of uses. The preferred elasticity of VMT with respect to the land use mix index for Riverside County is 0.02, per work examining policy effects on VMT conducted by Salon et al for the Air Resource Board.

**Example:**

Sample calculations are provided below:

90% single family homes, 10% commercial

- $Land\ use\ index = - [0.9 \times \ln(0.9) + 0.1 \times \ln(0.1) + 4 \times 0.01 \times \ln(0.01)] / \ln(6) = 0.3$
- $Low\ Range\ \% VMT\ Reduction = (0.3 - 0.15) / 0.15 \times 0.02 = 2\%$

1/6 single family, 1/6 multi-family, 1/6 commercial, 1/6 industrial, 1/6 institutional, 1/6 parks

- $Land\ use\ index = - [6 \times 0.17 \times \ln(0.17)] / \ln(6) = 1$
- $High\ Range\ \% VMT\ Reduction\ (land\ use\ index = 1)$
- $Land\ use = (1 - 0.15) / 0.15 = 5.6\ or\ 566\%.$  Since this is greater than 500%, set to 500%
- $\% VMT\ Reduction = (5 \times 0.02) = 10\%$

**References:**

Ewing, R. and Cervero, R. (2010). Travel and the Built Environment - A Meta-Analysis. Journal of the American Planning Association, 76(3), 265-294. Cited in California Air Pollution Control Officers Association. (2010). Quantifying Greenhouse Gas Mitigation Measures. Retrieved from: <http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf>

Frank, L., Greenwald, M., Kavage, S. and Devlin, A. (2011). An Assessment of Urban Form and Pedestrian and Transit Improvements as an Integrated GHG Reduction Strategy. WSDOT Research Report WA-RD 765.1. Washington State Department of Transportation. Retrieved from: <http://www.wsdot.wa.gov/research/reports/fullreports/765.1.pdf>

Nasri, A. and Zhang, L. (2012). Impact of Metropolitan-Level Built Environment on Travel Behavior. Transportation Research Record: Journal of the Transportation Research Board, 2323(1), 75-79.

Sadek, A. et al. (2011). Reducing VMT through Smart Land-Use Design. New York State Energy Research and Development Authority. Retrieved from: [https://www.dot.ny.gov/divisions/engineering/technical-services/trans-r-and-d-repository/C-08-29%20Final%20Report\\_December%202011%20%282%29.pdf](https://www.dot.ny.gov/divisions/engineering/technical-services/trans-r-and-d-repository/C-08-29%20Final%20Report_December%202011%20%282%29.pdf)

Salon, D., Boarnet, M. G., Handy, S., Spears, S., & Tal, G. (2012). How do local actions affect VMT? A critical review of the empirical evidence. *Transportation research part D: transport and environment*, 17(7), 495-508

Song, Y., and Knaap, G., "Measuring the effects of mixed land uses on housing values." *Regional Science and Urban Economics* 34 (2004) 663-680.(p. 669)  
[http://urban.csuohio.edu/~sugie/papers/RSUE/RSUE2005\\_Measuring%20the%20effects%20of%20mixed%20land%20use.pdf](http://urban.csuohio.edu/~sugie/papers/RSUE/RSUE2005_Measuring%20the%20effects%20of%20mixed%20land%20use.pdf)

Spears, S. et al. (2014). Impacts of Land-Use Mix on Passenger Vehicle Use and Greenhouse Gas Emissions- Policy Brief and Technical Background Document. California Air Resources Board. Retrieved from: <https://arb.ca.gov/cc/sb375/policies/policies.htm>

Quantifying Greenhouse Gas Mitigation Measures, California Air Pollution Control Officers Association (CAPCOA), 2010. Chapter 3.1.3 Increase Diversity of Urban and Suburban Developments (Mixed Use).

Zhang, Wengia et al. "Short- and Long-Term Effects of Land Use on Reducing Personal Vehicle Miles of Travel."

## **Provide Pedestrian Network Improvements**

### **Range of Effectiveness:**

0.5 – 5.7% VMT reduction

### **Measure Description:**

Providing pedestrian access at and near a project site encourages people to walk instead of drive, presuming that desirable destinations exist within walking distance of the project. This mode shift results in people driving less and thus a reduction in VMT. The pedestrian access network should internally link all uses and connect to all existing or planned external streets and pedestrian facilities contiguous with the project site. It should also minimize barriers to pedestrian access and interconnectivity. Physical barriers such as walls, landscaping, and slopes that impede pedestrian circulation should be eliminated (CAPCOA 2010, p. 186).

### **Measure Applicability:**

- Urban, suburban, and rural context
- Appropriate for residential, retail, office, industrial, and mixed-use projects
- Reduction benefit only occurs if the project has both pedestrian network improvements on site and connections to the larger off-site network. All calculations should incorporate the status of the network in the project's walkshed (i.e., within a ¼ mile radius).
- Desirable destinations external to the project site must be within walking distance (i.e., preferably within a ¼ mile and no greater than ½ mile).

### **Inputs:**

The project applicant must provide information regarding pedestrian access and connectivity within the project and to/from off-site destinations. The change in sidewalk coverage should represent the share of quality sidewalk and pedestrian facilities available in the surrounding area; for instance, if one block-face of ten is missing sidewalks, the existing coverage is 90%. This measure is not effective in reducing VMT in locations with already fully-developed, high quality sidewalk networks.

### **Mitigation Method:**

$$\% \text{ VMT Reduction} = E_{PedAccess} \times \text{Sidewalk Delta}$$

Where:

$$E_{PedAccess} = \% \text{ Change in VMT per \% Increase in Sidewalk Coverage}$$

$$\text{Sidewalk Delta} = \text{Assumed change in sidewalk coverage compared to background condition}$$

Detail:

$$E_{PedAccess} = 0.0 \text{ to } 0.14 \text{ (0.07 preferred in absence of other data)}$$

$$\text{Sidewalk Delta} = 5\% \text{ to } 100\%$$

**Discussion:**

Pedestrian Access Elasticity varies at the local level and is dependent on many factors such as the urban form of the immediate area and population characteristics. When reliable studies are available and applicable to the project area, this elasticity should be calculated. Otherwise, 0.07 is recommended based on the range provided by Handy, S. et al.

**References:**

Handy, S. et al. (2014). Impacts of Pedestrian Strategies on Passenger Vehicle Use and Greenhouse Gas Emissions – Policy Brief and Technical Background Document. California Air Resources Board. Retrieved from: <https://arb.ca.gov/cc/sb375/policies/policies.htm>

Quantifying Greenhouse Gas Mitigation Measures, California Air Pollution Control Officers Association (CAPCOA), 2010. Chapter 3.2.1 Provide Pedestrian Network Improvements.

## **Provide Traffic Calming Measures**

### **Range of Effectiveness:**

0 – 1.7% VMT reduction

### **Measure Description:**

Providing traffic calming measures encourages people to walk or bike instead of using a vehicle. This mode shift results in a decrease in VMT. Project design should include pedestrian/bicycle safety and traffic calming measures in excess of jurisdiction requirements. Roadways should be designed to reduce motor vehicle speeds and encourage pedestrian and bicycle trips with traffic calming features. Traffic calming features may include: marked crosswalks, count-down signal timers, curb extensions, speed tables, raised crosswalks, raised intersections, median islands, tight corner radii, roundabouts or mini-circles, on-street parking, planter strips with street trees, chicanes/chokers, etc. (CAPCOA 2010, p. 190).

### **Measure Applicability:**

- Urban, suburban, and rural context
- Appropriate for residential, retail, office, industrial and mixed-use projects

### **Inputs:**

The following information needs to be provided by the project applicant:

- Percentage of streets within project with traffic calming improvements
- Percentage of intersections within project with traffic calming improvements

### **Mitigation Calculation:**

The VMT reduction is a function of the percentage of streets and intersections within the project with traffic calming improvements based on the following look up table.

% VMT Reduction		% of Streets with Improvements			
		25%	50%	75%	100%
% of Intersections with Improvements	25%	0.425%	0.425%	0.85%	0.85%
	50%	0.425%	0.85%	0.85%	1.275%
	75%	0.85%	0.85%	1.275%	1.275%
	100%	0.85%	1.275%	1.275%	1.7%

**Discussion:**

The table above allows the project applicant to calculate a VMT reduction estimate based on the project's street and intersection design with respect to traffic calming. The applicant should look at the rows on the left and choose the percent of intersections within the project which will have traffic calming improvements. Then, the applicant should look at the columns along the top and choose the percent of streets within the project which will have traffic calming improvements. The intersection cell of the row and column selected in the matrix is the VMT reduction estimate.

Though the literature provides some difference between a suburban and urban context, the difference is small and thus the lower VMT reduction estimate was used to be applied to all contexts. Rural context is not specifically discussed in the literature but is presumed to have little to no effect on VMT reduction due to the long-distances between trip origins and destinations.

Research by Zahabi, S. et al. attributes up to a 1.7% VMT reduction to traffic calming measures. The table above illustrates the range of VMT reductions based on the percent of streets and intersections with traffic calming measures implemented. CAPCOA 2010 used a range of 0.25% to 1% for VMT reduction. The VMT reductions were updated using the same methodology to allow for reductions up to 1.7%.

Because of the high potential for double-counting, caution should be used when combining this measure with "Provide Pedestrian Network Improvements."

**References:**

California Air Resources Board. (2016). Greenhouse Gas Quantification Methodology for the California Transportation Commission Active Transportation Program Greenhouse Gas Reduction Fund Fiscal Year 2016-17. Retrieved from: [https://www.arb.ca.gov/cc/capandtrade/auctionproceeds/ctc\\_atp\\_finalqm\\_16-17.pdf](https://www.arb.ca.gov/cc/capandtrade/auctionproceeds/ctc_atp_finalqm_16-17.pdf).

Quantifying Greenhouse Gas Mitigation Measures, California Air Pollution Control Officers Association (CAPCOA), 2010. Chapter 3.2.2 Provide Traffic Calming Measures.

Zahabi, S. et al. (2016). Exploring the link between the neighborhood typologies, bicycle infrastructure and commuting cycling over time and the potential impact on commuter GHG emissions. Transportation Research Part D: Transport and Environment. 47, 89-103.

## **Implement Car-Sharing Program**

### **Range of Effectiveness:**

0.3 – 1.6% VMT reduction

### **Measure Description:**

Implementation of a car-sharing program allows people to have on-demand access to a shared fleet of vehicles on an as-needed basis. VMT reduction occurs due to reductions in private vehicle ownership, lower convenience associated with indirect vehicle access, and the transparent cost of vehicle use. User costs are typically determined through mileage or hourly rates, with deposits and/or annual membership fees. The car-sharing program could be created through a local partnership or through one of many existing car-share companies. Car-sharing programs may be grouped into three general categories: residential- or citywide-based, employer-based, and transit station-based. Transit station-based programs focus on providing the “last-mile” solution and link transit with commuters’ final destinations. Residential-based programs work to substitute entire household-based trips. Employer-based programs provide a means for business/day trips for alternative mode commuters and provide a guaranteed ride home option (CAPCOA 2010, p. 245).

### **Measure Applicability:**

- Urban and suburban context
- Negligible in a rural context
- Appropriate for residential, retail, office, industrial, and mixed-use projects

### **Inputs:**

The following information needs to be provided by the project applicant:

- % reduction in car share member annual VMT
- Number of car share members per household

### **Mitigation Method:**

$$\% \text{ VMT Reduction} = P_{\text{CarShare}} \times \text{Adoption Rate}$$

Where:

$$P_{\text{CarShare}} = \% \text{ reduction in car share member annual VMT}$$

$$\text{Adoption Rate} = \text{number of car share members per household}$$

Detail:

$$P_{\text{CarShare}} = 26.9 \text{ to } 37\%$$

$$\text{Adoption Rate} = 1\% \text{ to } 2\%$$

**Discussion:**

The applicant must consider the demand for car-shares in a community before calculating a VMT reduction. If a community cannot support the proposed number of cars deployed, VMT reduction may be overestimated.

The percent reduction in car share member annual VMT is dependent on characteristics of the community, its residents, and for what purposes the car-sharing program is to be used for. Analysts should consult the literature to understand how these variables affect the range of reductions prior to completing the calculation of VMT reduction.

**References:**

Clewlow, Regina R. and Mishra, Gouri Shankar, (2017). Disruptive Transportation: The Adoption, Utilization, and Impacts of Ride-Hailing in the United States. UC Davis, Institute of Transportation Studies. Research Report - UCD-ITS-RR-17-07.

Lovejoy, K. et al. (2013). Impacts of Carsharing on Passenger Vehicle Use and Greenhouse Gas Emissions - Policy Brief and Technical Background Document. California Air Resources Board. Retrieved from: <https://arb.ca.gov/cc/sb375/policies/policies.htm>

Quantifying Greenhouse Gas Mitigation Measures, California Air Pollution Control Officers Association (CAPCOA), 2010. Chapter 3.4.9 Implement Car-Sharing Program

## **Increase Transit Service Frequency/Speed**

### **Range of Effectiveness:**

0.03 – 6.3% VMT reduction.

### **Measure Description:**

This measure reduces transit-passenger travel time through reduced headways and increased speed and reliability. This makes transit service more attractive and may result in a mode shift from auto to transit which reduces VMT (CAPCOA 2010, p. 280).

### **Inputs:**

The following information needs to be provided by the project applicant:

- Percentage reduction in headways (increase in frequency) for applicable transit routes
- Level of implementation
- Project setting: urban center, urban, suburban
- Existing transit mode share

### **Mitigation Method:**

$$\% \text{ VMT Reduction} = \text{Headway} \times B \times C \times \text{Mode}$$

Where:

$$\text{Headway} = \% \text{ reduction in headways}$$

$$B = \text{Elasticity of transit ridership with respect to increased frequency of service}$$

$$C = \text{Ratio of vehicle trips reduced to number of new transit riders}$$

$$\text{Mode} = \text{Existing transit mode share}$$

Detail:

$$B = 0.50$$

$$C = 25\% \text{ to } 75\%$$

### **Discussion:**

A 1% reduction in headways leads to 0.5% increase in transit ridership. This change is translated into a VMT reduction by applying a mode shift adjustment to account for new transit trips that do not represent displaced vehicle trips in addition to considering the existing transit mode share.

Variable C should be calculated based on local data. It is calculated by taking the length of an average transit trip within the sphere of influence of the project divided by the average vehicle trip length within the sphere of influence of the project.

**References:**

Handy, Lovejoy, Boarnet, Spears. 2013. "Impacts of Transit Service Strategies on Passenger Vehicle Use and Greenhouse Gas Emissions." [http://www.arb.ca.gov/cc/sb375/policies/transitservice/transit\\_brief.pdf](http://www.arb.ca.gov/cc/sb375/policies/transitservice/transit_brief.pdf)

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Taylor, B. D., Miller, D., Iseki, H., & Fink, C. (2009). Nature and/or nurture? Analyzing the determinants of transit ridership across US urbanized areas. *Transportation Research Part A: Policy and Practice*, 43(1), 60-77.

Quantifying Greenhouse Gas Mitigation Measures, California Air Pollution Control Officers Association (CAPCOA), 2010. Chapter 3.5.4 Implement Transit Service Frequency/Speed

## **Encourage Telecommuting and Alternative Work Schedules**

### **Range of Effectiveness:**

0.2 – 4.5% commute VMT reduction.

### **Measure Description:**

Encouraging telecommuting and alternative work schedules reduces the number of commute trips and therefore VMT traveled by employees. Alternative work schedules could take the form of staggered starting times, flexible schedules, or compressed work weeks (CAPCOA 2010, p. 236).

### **Measure Applicability:**

- Urban, suburban, and rural context
- Appropriate for retail, office, industrial, and mixed-use projects
- VMT reduction is dependent on the performance of individual building tenants and may change over time. On-going monitoring and adjustment is necessary to achieve sustained reductions in VMT.

### **Inputs:**

The following information needs to be provided by the project applicant:

- Percentage of employees participating (1 – 25%)
- Telecommute elasticity (see discussion below)

### **Mitigation Method:**

$$\% \text{ Commute VMT Reduction} = E_{\text{Telecommute}} * \text{Telecommute Delta}$$

Where:

$$\text{Telecommute Delta} = \% \text{ change in workers telecommuting with TDM Program}$$

$$E_{\text{Telecommute}} = \% \text{ change in VMT per } \% \text{ change in workers telecommuting}$$

$$E_{\text{Telecommute}} = 0.18 \text{ to } 0.90$$

### **Discussion:**

Telecommute Delta and  $E_{\text{Telecommute}}$  should consider the potential for building tenants to change over time. Higher values require the employer at the site to be known and unlikely to change over time.  $E_{\text{Telecommute}}$  will be lower in places with higher non-drive alone mode share, and higher in places with more drive alone vehicle mode share.

**References:**

Handy, Tal, Boarnet. 2013. "Policy Brief on the Impacts of Telecommuting Based on a Review of the Empirical Literature."

[https://www.arb.ca.gov/cc/sb375/policies/telecommuting/telecommuting\\_brief120313.pdf](https://www.arb.ca.gov/cc/sb375/policies/telecommuting/telecommuting_brief120313.pdf)

Quantifying Greenhouse Gas Mitigation Measures, California Air Pollution Control Officers Association (CAPCOA), 2010. Chapter 3.4.6 Encourage Telecommuting and Alternative Work Schedules

## **Provide Ride-Sharing Programs**

### **Range of Effectiveness:**

2.5 – 8.3% commute VMT reduction.

### **Measure Description:**

Increasing vehicle occupancy by ride-sharing results in fewer cars driving the same trip, and thus a decrease in VMT. Projects must implement a ride-sharing program as well as a permanent transportation management association membership and funding requirement to see VMT benefits. Funding may be provided by Community Facilities, District, or County Service Area, or other non-revocable funding mechanism (CAPCOA 2010, p. 227). Projects should promote ride-sharing programs through a multi-faceted approach such as:

- Designating a certain percentage of parking spaces for ride sharing vehicles
- Designating adequate passenger loading and unloading and waiting areas for ride-sharing vehicles
- Providing a web site or message board for coordinating rides
- Providing a guaranteed ride home program to carpool participants

### **Measure Applicability:**

- Urban and suburban context
- Negligible impact in many rural contexts, but can be effective when a large employer in a rural area draws from a workforce in an urban or suburban area, such as when a major employer moves from an urban location to a rural location
- Appropriate for residential, retail, office, industrial, and mixed-use projects
- VMT reduction is dependent on the performance of individual building tenants and may change over time. On-going monitoring and adjustment is necessary to achieve sustained reductions in VMT.

### **Inputs:**

The following information needs to be provided by the project applicant:

- Percent reduction in commute VMT
- Shared trips to VMT factor

### **Mitigation Method:**

$$\% \text{ VMT Reduction} = \% \text{ reduction in commute VMT} \times \text{Shared trips to VMT factor}$$

Where:

$$\% \text{ reduction in commute VMT} = 1.0\% \text{ to } 20.0\%$$

$$\text{Shared Trips to VMT Factor} = 0.25 \text{ to } 0.50$$

**Discussion:**

The extent of reduction in VMT and the number of employees sharing a car is dependent on the employer, characteristics of employee's commutes and their home communities.

**References:**

Quantifying Greenhouse Gas Mitigation Measures, California Air Pollution Control Officers Association (CAPCOA), 2010. Chapter 3.4.3 Provide Ride-Sharing Programs

TCRP Report 95. Chapter 3: Park-and-Ride/Pool - Traveler Response to Transportation System Changes (2004).

TCRP Report 95. Chapter 5: Vanpools and Buspools - Traveler Response to Transportation System Changes (2005).

TCRP Report 95. Chapter 19: Employer and Institutional TDM Strategies - Traveler Response to Transportation System Changes (2010).

**Appendix F – Proposed TDM Plan**

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**DRAFT FINAL TDM PLAN**  
**BURLINGAME BAY**

Prepared for  
EW-PG Airport Owner, LLC

Prepared by  
**KRUPKA CONSULTING**

November 6, 2020

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EW-PG Airport Owner, LLC (hereinafter “Client”) engaged Krupka Consulting to prepare a Transportation Demand Management (TDM) Plan for the Burlingame Bay Road project in Burlingame, California (hereinafter referred to as “Burlingame Bay” or “Project”). The TDM Plan was required by the City of Burlingame (City) to support the Project entitlement application. This document represents the Draft Final TDM Plan and incorporates comments from the City on the Draft TDM Plan dated May 8, 2020. Presented herein are the TDM Plan purpose, the Project, supportive TDM infrastructure and measures, programmatic TDM measures, a calculation of trip credits using guidelines established by the City/County Association of Governments of San Mateo County (C/CAG) and monitoring and reporting.

## Purpose of TDM Plan

The purpose of the TDM Plan is to define specific TDM measures to be implemented by the Project to meet the City’s TDM Program goal, which is: at least 20% of all employees regularly commute to work using modes other than single occupant vehicles (SOVs) or use an alternative work hour schedule. Equally important with regard to purpose is C/CAG’s stipulation that local jurisdictions must require the developer and all subsequent tenants to reduce demand for all new peak hour trips projected to be generated by developments. C/CAG established several choices for local jurisdictions, including implementing TDM Programs that have the capacity to fully reduce the demand for new peak hour trips.<sup>1</sup> Therefore, the purpose of the TDM Plan was expanded to address the C/CAG requirement.

## Project Description

Location - As shown in **Exhibit A**, the Project is located at a 12.8 acre developed parcel at the South end of Airport Boulevard, east of US Highway 101 adjacent to Burlingame Lagoon and Sanchez Channel. Two site driveways are located on Airport Boulevard, which provides local connections to Old Bayshore Highway, Broadway, Anza Boulevard and Peninsula Avenue, which in turn serve US Highway 101 and points north and south.

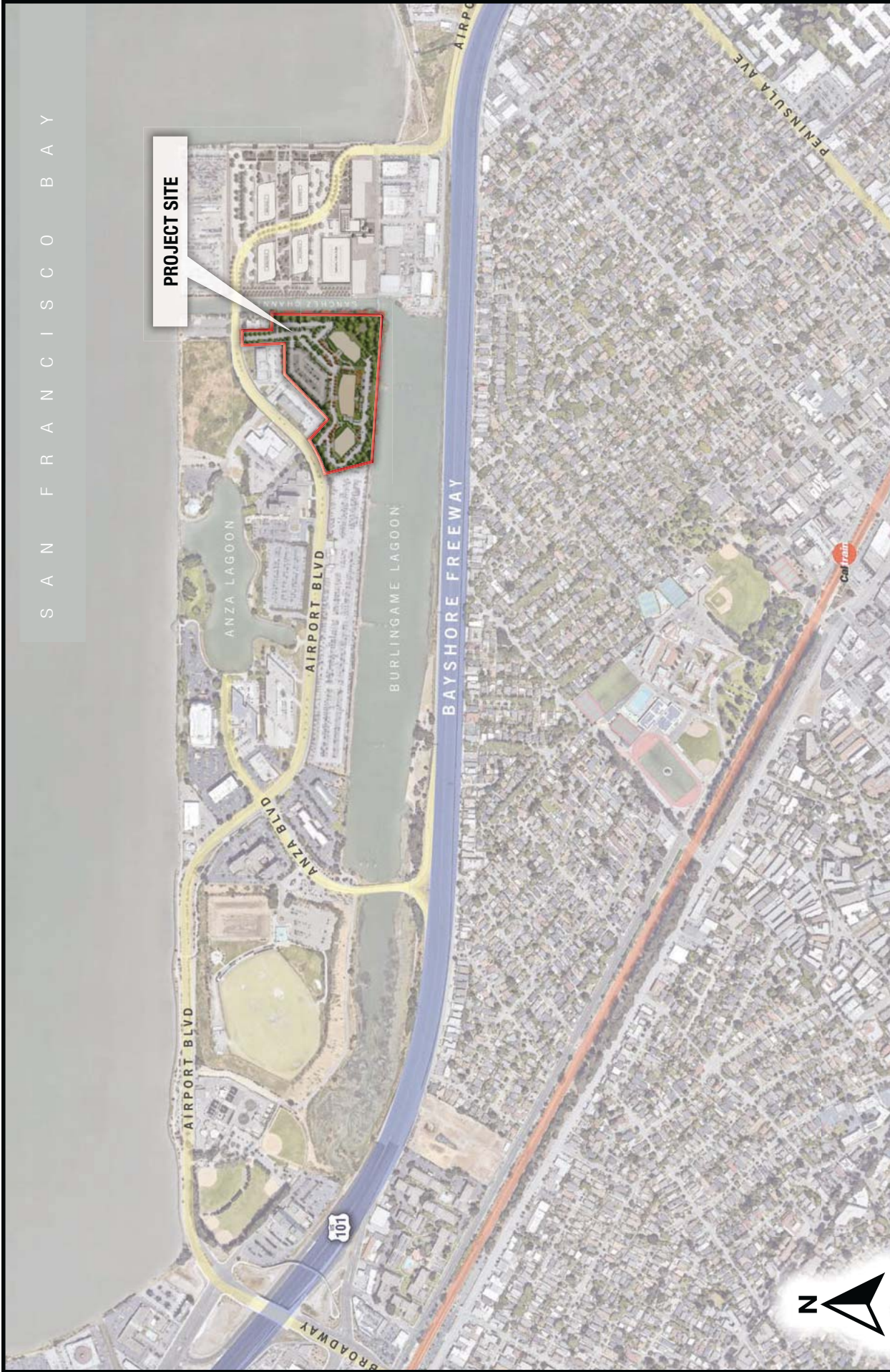
The Project is in the Bayfront commercial land use area within the Bayfront neighborhood. The new Burlingame Point life sciences office campus is under construction directly across Sanchez Channel from the Project.

Description - The Project would construct a new eight-story office/research and development building adjacent to two existing office buildings, one with five stories and one with eight stories. A total of 1,520 parking spaces would be provided — 1,144 spaces in a new parking garage on existing surface parking and 376 surface spaces.

**Exhibit B** illustrates the site plan and the new building situated between two existing buildings. The project is a bold, contemporary site refresh and expansion with internal and external attributes that line up well with needs and desires of high-tech companies and customers. In addition to new driveways and surface parking, including a commute bus center, to enhance

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<sup>1</sup>C/CAG, Guidelines for Implementing the Land Use Component of the Congestion Management Program, 2015) (hereinafter “C/CAG Land Use Guidelines”)



PROJECT SITE

SOURCE: DES Architects + Engineers, 2020



Project Site



SOURCE: DES Architects + Engineers, 2020

Exhibit B  
**Burlingame Bay TDM Plan**  
 Site Plan

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access and circulation, substantial landscaping with promenades, view areas and patios with seating and casual dining features are proposed to complement the waterside setting.

## **Supportive TDM Infrastructure and Project TDM Measures**

The Project as envisioned would be a pedestrian and bicycle friendly campus within the Bayfront commercial area, served by active transportation such as the Burlingame Trolley, Burlingame Bayside Shuttle and mature sidewalks, trails and bikeways. **Exhibit C** highlights active transportation serving the Project.

Project TDM measures were defined to complement the existing TDM setting. The following paragraphs highlight these features, which are summarized on **Exhibit D**.

Community Connectivity - The Project and respective site improvements would connect to and complement Bayfront area facilities, including sidewalks and bike lanes on Airport Boulevard and the Bay Trail adjacent to the Project site, which serves the Coyote Point Recreation Area in San Mateo. This indicates positive community connectivity.

Public Transportation Access - The Project would include a commute bus center with two bus bays. The facility would be located adjacent to the parking structure in the center of the site, with suitable turning movement dimensions to allow easy bus entries and exits and connections to Airport Boulevard. The Burlingame Trolley traverses the Bayfront area and includes a stop near 577 Airport Boulevard, and connects the Project site with the Broadway and Burlingame Caltrain Stations as well as Broadway and Burlingame Avenue business districts. Commute.org operates the Burlingame Bayside Shuttle, which provides direct commute period service between the Project site and the Millbrae BART/Caltrain Station. Two buses serve the area and carry approximately 2,800 total AM and PM peak period riders per month (Source: Commute.org data summaries for October 2019 and January 2020).

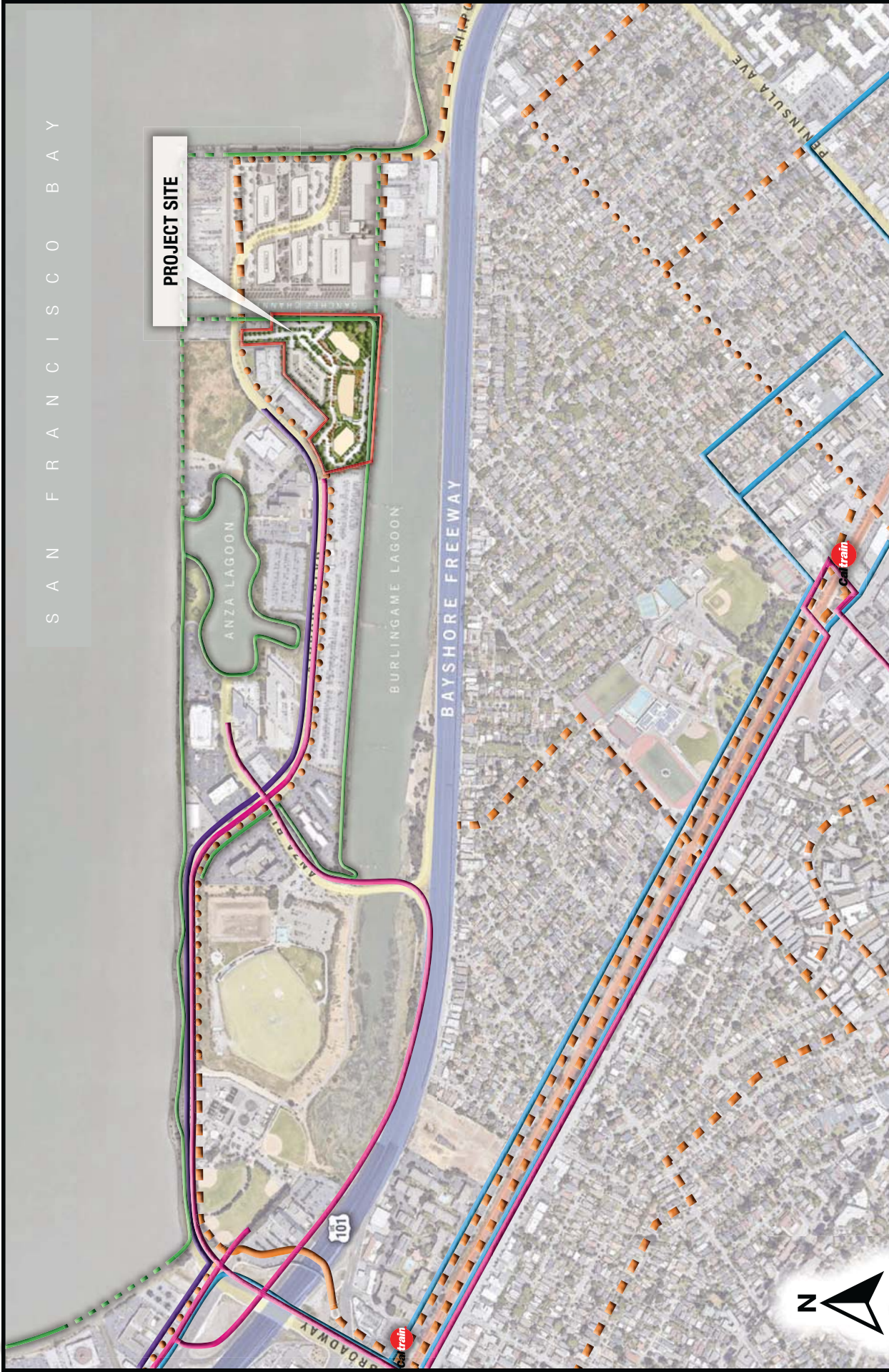
Pedestrian Amenities - The Project walkway system would minimize vehicular conflicts, allow direct access to the Bay Trail, buildings and the parking structure. Landscaping features, patios and seating areas would complement the walkway system and soften the Project environment.

Bicycle Parking - The Project would include 41 bicycle parking spaces, with 37 Class I (secure) spaces in the bicycle enclosure on the first floor of the parking structure and 4 Class II spaces in 2 bike racks near building entries.









Shower Facilities - The new building would include shower rooms for men and women on the first floor, with a total of eight shower stalls, to support employees who bicycle and walk to work or exercise during the day, or both.

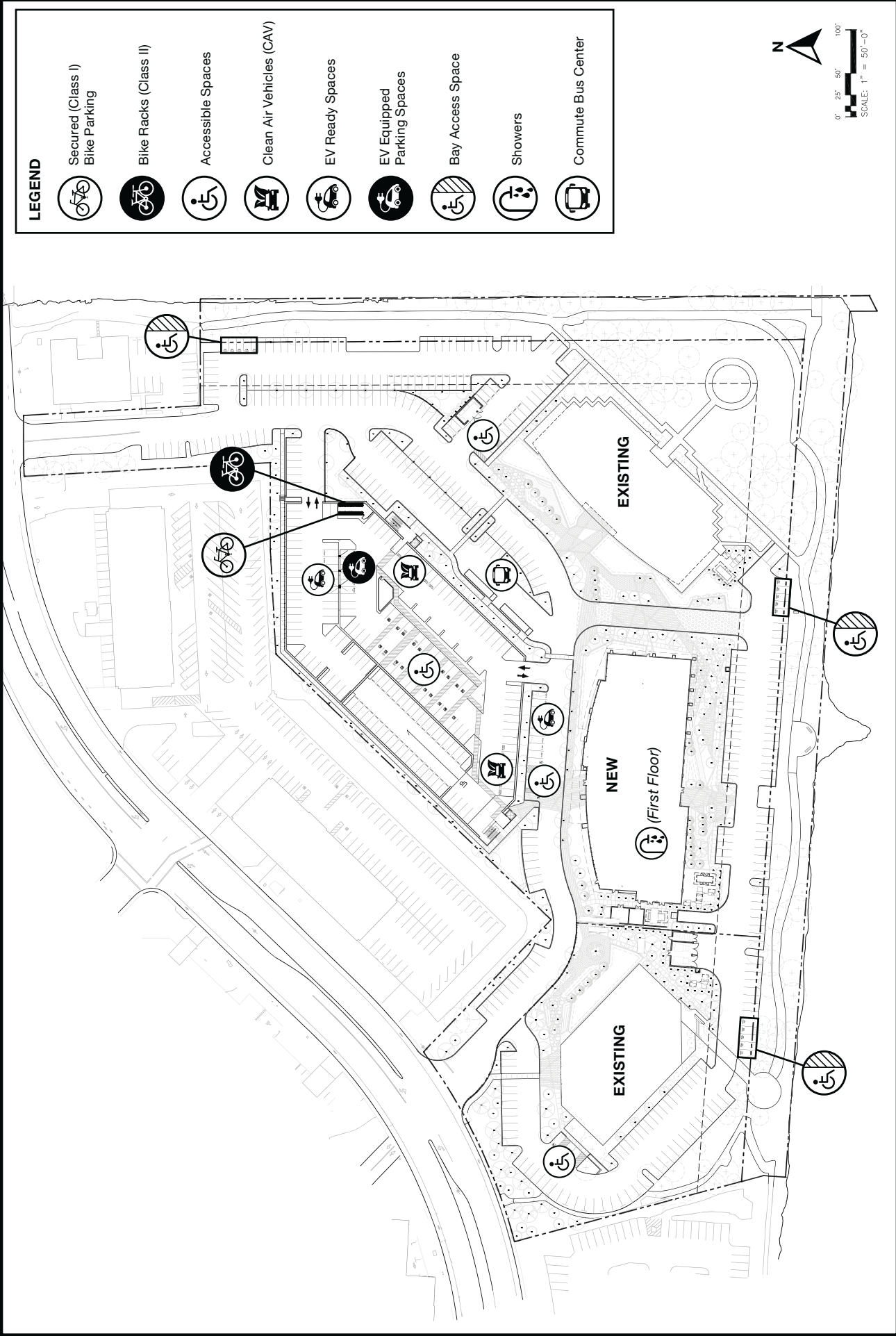
Parking Management - The Project would include preferential parking of the following kinds.

- Accessible (“ADA Stalls”) - 32 total stalls (6 van, 26 standard), located in the parking structure and adjacent to existing buildings.
- Clean Air Vehicle - 14 stalls, located in the parking structure.



SOURCE: DES Architects + Engineers, 2020 and Burlingame General Plan, City of Burlingame 2019

-  Samtrans Routes
  -  Burlingame Trolley
  -  Burlingame Shuttle
  -  Trail (existing)
  -  Trail (planned)
  -  Bike Path (Class I)
  -  Bike Path (Class II)
  -  Bike Path (Class III/Sharrows)
- Exhibit C  
**Burlingame Bay TDM Plan**  
 Active Transportation



SOURCE: DES Architects + Engineers, 2020

Exhibit D  
**Burlingame Bay TDM Plan**  
 TDM Elements

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- Electric Vehicle Charging - 45 total (32 equipped, 13 ready), located in the parking structure and adjacent to the new building.
- Bay access stalls ("BCDC Stalls) - 15 stalls located adjacent to the Bay Trail - 45 EV parking (32 installed)

Vehicular Access - The Project would be served by two existing driveways on Airport Boulevard. Internal drive aisles would connect the driveways and provide direct access to the parking structure and surface parking.

Freight and trash loading zones would serve all buildings directly with suitable turning and parking dimensions.

## **Programmatic TDM Measures**

Given the Project may be occupied by one or more tenants, and most candidate tenants are familiar with and routinely incorporate TDM in practice, Client intends to require tenants by lease agreement to actively incorporate and participate in TDM measures most suitable to them to achieve the TDM Plan purpose.

TDM Requirements - Client shall oversee the TDM program and require tenants to implement and consistently carry out and monitor the following TDM measures.

TDM Coordinator - A Project TDM Coordinator shall be responsible for implementing, maintaining and monitoring the TDM Plan. The TDM Coordinator shall participate in TDM training sponsored by Commute.org in during the first year of occupancy.

Employee Survey - A confidential survey of transportation characteristics of employees shall be conducted with findings submitted to the City upon full occupancy of the Project and periodically thereafter. The survey shall include residence location, mode of travel to work, duration of commute, usual work schedule and interest in commute alternatives. Attachment A, appended hereto, lists the proposed survey questions and gives a good understanding of the expected data to be generated.

Commute Alternative Information - A summary pamphlet shall be prepared that describes commute alternatives (to driving alone) and summarizes the TDM Plan. This pamphlet shall be made available to all employees and updated at least annually.

Commute Alternative Plan - The Project shall implement TDM measures to meet the City's TDM policy and goal, which is: at least 20% of all employees regularly commute to work using modes other than single occupant vehicles or use an alternative work hour schedule. The TDM Plan shall comply with the C/CAG Land Use Guidelines that stipulate the TDM Plan have the capacity to fully reduce the estimated demand for new peak hour trips generated by the Project.

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The Project shall be required to provide the following TDM measures.

- Dedicated peak period shuttle service to BART/Caltrain that serves at least 60 round trip riders during the peak hour. This would be provided through direct contract or shared arrangement with a shuttle service sponsored by another development or entity.
- Subsidized transit passes for at least 25% of employees with value of at least \$20 per month per pass, or equivalent commuter benefit allowance or subsidy. This would be an employee benefit for the duration of employment and subject to change and customization to meet particular tenant conditions.

Other candidate TDM measures tenants may incorporate include, but not be limited to, the following.

- Alternative work schedules or telecommuting
- Guaranteed emergency ride home, which gives eligible employees free rides home in case of personal emergencies or unexpected late work days that cause them to miss a customary transit ride or carpool seat
- Coordination and incentives to enhance alternative mode usage, including the following functions
  - Introduce employees to the TDM Plan
  - Help use 511 Rideshare and 511 Transit Trip Planning
  - Help match “bike buddies” and “walk buddies”
  - Coordinate and manage bicycle parking and preferential parking spaces
  - Help assess and establish alternative work schedules and telecommuting
  - Catalog and update available transportation services, bicycle routes, bike share facilities, transit schedules and shuttle services; provide alerts regarding changes and new opportunities

## **Calculation of Trip Credits Per C/CAG Guidelines**

The implementation of a TDM program that has the capacity to fully reduce the estimated demand for new peak hour trips generated by a new development project is one of five options local jurisdictions may use to help offset or mitigate the traffic impacts of development projects according to the C/CAG Land Use Guidelines.

Table 1 summarizes the estimated trip credits for Project TDM measures, including site design elements and required TDM measures, based on application of the C/CAG trip credit unit values. This evaluation addressed the trip generation for the new building only. The total trip credits exceeds the estimated net new peak hour trip values and therefore meets the intent of the C/CAG requirements.

**Table 1  
ESTIMATED TRIP CREDITS PER C/CAG LAND USE GUIDELINES**

<b>TDM Measure</b>	<b>Number of Units per TDM Plan</b>	<b>Notes</b>	<b>C/CAG Unit Trip Credit (Rate per Unit)</b>	<b>Resulting Trip Credits for TDM Plan</b>
Bicycle lockers and racks	41		3	123
Showers and changing rooms (combination)	8	trip credits calculation includes 5 bonus credits for bicycle storage	10	85
Dedicated peak period shuttle to BART/Caltrain	60	peak hour round trip seat; estimate reflects 5% of employees during the peak hour	1	60
Subsidized transit passes for employees (at least \$20 per month per ticket/pass)	300	25% of estimated employee count at 5 employees per 1,000 sf	1	300
Preferential parking for carpoolers and vanpoolers	14	spaces are designated for Clean Air Vehicles, not separately for carpoolers and vanpoolers; lower trip credit rate — for carpoolers — used	2	28
<b>TOTAL TRIP CREDITS</b>				<b>596</b>
<b>PROJECT NET NEW PEAK HOUR TRIPS (TJKM, Traffic Impact Analysis Report, May 8, 2020)</b>				<b>276</b>
<b>PROJECT TRIPS MITIGATED?</b>				<b>YES</b>

## **Monitoring and Reporting**

The following monitoring and reporting plan shall be implemented to help Client and the City assess the effectiveness of the TDM Plan against its stated goal.

Employee Survey - Each year the Project is occupied and prior to February 15, tenants shall survey existing employees to estimate the proportion of employees commuting in single-occupant vehicles and assess employees' work and travel characteristics, overall perceptions of travel alternatives, and concerns about the TDM Plan. The proposed questions to be included in the survey are summarized in Attachment A.

Annual Project TDM Program Report - Annual reporting shall commence the calendar year after the Project reaches 90% occupancy. Each year prior to March 30, Client shall prepare and submit a report summarizing the results of the tenants' Employee Surveys and TDM Plan activities. The report shall also include descriptions of any new or modified programs to be introduced in the next year, or any programs that would be changed as a result of user comments. Client shall meet with City staff to review comments on the report and discuss reasonable changes or other actions required to address the comments. Such changes or actions, and their implementation status, would be reported in the subsequent report.

Client reserves the right to revise its TDM Plan as necessary to achieve TDM Plan goal in the most cost-effective manner, and understands that such revisions are subject to review and approval of the City Community Development Director. Client also understands the City Community Development Director reserves the right to request modifications to the TDM Plan.

Enforcement - The City reserves the right to assess an annual penalty for non-compliance.

## **Conclusions**

This TDM Plan describes strong TDM infrastructure and Project TDM Measures, which give the Project a solid employee serving, pedestrian/bicycle friendly foundation and, combined, indicate strong potential to achieve the TDM Plan goal. A reasonable monitoring and reporting requirement provides a credible means for Client and City to manage the performance of the TDM program.

## **ATTACHMENT A PROPOSED EMPLOYEE SURVEY QUESTIONS**

1. What time do you typically arrive for work in the morning?
  1. Shift Work or Varies
  2. Before 5:00 AM
  3. 5:00 AM to 10:00 AM — By 30 Minute Increment (increments are listed in the survey)
  4. After 10:00 AM
2. What time do you typically leave work?
  1. Shift Work or Varies
  2. Before 4:00 PM
  3. 4:00 PM to 8:00 PM — By 30 Minute Increment (increments are listed in the survey)
  4. After 8:00 PM
3. During a normal week, how variable are your work hours?
  1. Start and finish at approximately the same time every day
  2. Work hours vary occasionally
  3. Work hours vary often
4. On a typical day, how long does it take to get to work (primary commute)?
  1. Full time teleworker, so commute time is negligible
  2. 1 to 120 minutes in increments of 15 and 30 minutes (increments are listed in the survey)
  3. Greater than 120 minutes
5. Approximately how far is it from your home to your work site (one-way)?
  1. Full time teleworker, so commute distance is negligible
  2. 1 to 100 miles in stepwise increments of 5, 10, 15, 20 and 40 miles (increments are listed in the survey)
  3. Greater than 100 miles
6. Which of the following best describes your regular work schedule?
  1. Five day work week (full-time)
  2. Four day work week, 10-hour days (full time)
  3. Nine days, 80 hours worked in two week period (full time)
  4. Part time
7. What is your primary mode of travel to work for each of these specific dates (seven listed)? (sub modes are listed in survey)
  1. Drive (alone, carpool, vanpool, motorcycle/moped)
  2. Passenger (taxi/Uber/Lyft, carpool, vanpool)
  3. Transit (SamTrans (Express Bus, Regular Bus), Caltrain, Dumbarton Express)
  4. Commute shuttle provided by employer
  5. Bicycle
  6. Walking, jogging, in-line skating, similar
  7. Work from home, off-site, similar
  8. Variable or compressed work schedule - day off
  9. Away from office(sick, vacation, non-work day, business travel)
8. Please offer your perspectives on alternative travel options at your work site.
9. Please offer and comments or concerns you have about the TDM Plan.

**Appendix G – Background Conditions Intersections Level of Service &  
Queueing Worksheets**

**Burlingame Bay TIS: Background Projects Summary**

Project	Location	Size	# of Units	Land Use	Net Daily Project Trips	AM Trips	In	Out	PM Trips	In	Out
Adrian Court Residential Development	1 & 45 Adrian Ct	4,000 sq. ft. commercial	265 apartments	Residential/Commercial	1,431	99	28	71	117	70	47
1095 Rollins Rd Residential	1095 Rollins Rd		150 apartments	Residential	-198	46	10	36	-28	-23	-5
SFO Technology Center	1300 Old Bayshore Hwy	239,201 sq. ft. office 11,887 sq. ft. restaurant 8,610 sq. ft. retail		Office/Restaurant/Retail	3,767	402	348	53	406	96	306
1499 Old Bayshore Hwy Hotel	1499 Old Bayshore Hwy	3,050 sq. ft. restaurant	404 hotel rooms	Hotel/Restaurant	2,799	159	103	56	174	87	87
Burlingame Point	300 Airport Blvd	690,000 sq. ft. office 8,000 sq. ft. day care 25,000 sq. ft. health club 20,000 sq. ft. retail 25,000 sq. ft. restaurant		Office + Amenities	8,215	988	789	199	1,013	276	737
Burlingame Topgolf	250 E. Anza Blvd	76,489 sq. ft.		Recreational	1,546	26	21	5	160	83	77
Carolan Ave & Rollins Rd Residential Development	1008-1028 Carolan Ave & 1007-1025 Rollins Rd		268 apartments 22 townhomes	Residential	Not available in trip generation worksheet	92	-4	96	100	82	18

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↖	↑↑	↗	
Traffic Vol, veh/h	468	106	0	324	17	0
Future Vol, veh/h	468	106	0	324	17	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	-	-	160	-	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	509	115	0	352	18	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	624	0	743
Stage 1	-	-	-	-	567
Stage 2	-	-	-	-	176
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	953	-	351
Stage 1	-	-	-	-	531
Stage 2	-	-	-	-	837
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	953	-	351
Mov Cap-2 Maneuver	-	-	-	-	351
Stage 1	-	-	-	-	531
Stage 2	-	-	-	-	837

Approach	EB	WB	NB
HCM Control Delay, s	0	0	15.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	351	-	-	953	-
HCM Lane V/C Ratio	0.053	-	-	-	-
HCM Control Delay (s)	15.8	-	-	0	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

HCM 2010 TWSC  
 2: Project Dwy E & Airport Blvd/Broadway

04/01/2020

Intersection						
Int Delay, s/veh	0.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑	
Traffic Vol, veh/h	468	0	70	324	0	12
Future Vol, veh/h	468	0	70	324	0	12
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	509	0	76	352	0	13

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	509	0	837
Stage 1	-	-	-	-	509
Stage 2	-	-	-	-	328
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	1052	-	305
Stage 1	-	-	-	-	569
Stage 2	-	-	-	-	702
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1052	-	278
Mov Cap-2 Maneuver	-	-	-	-	278
Stage 1	-	-	-	-	569
Stage 2	-	-	-	-	639






















Approach	EB	WB	NB
HCM Control Delay, s	0	1.8	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	744	-	-	1052	-
HCM Lane V/C Ratio	0.018	-	-	0.072	-
HCM Control Delay (s)	9.9	-	-	8.7	0.3
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.2	-

# HCM 2010 Signalized Intersection Summary























## 3: Broadway/Airport Blvd & Old Bayshore Hwy

04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	158	14	790	16	19	6	1374	401	16	4	84	125
Future Volume (veh/h)	158	14	790	16	19	6	1374	401	16	4	84	125
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	183	0	859	17	21	7	1493	436	17	4	91	136
Adj No. of Lanes	2	0	2	0	2	0	2	2	0	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	592	0	1963	45	59	20	1558	2154	84	9	611	273
Arrive On Green	0.17	0.00	0.17	0.03	0.03	0.03	0.45	0.62	0.62	0.01	0.17	0.17
Sat Flow, veh/h	3548	0	3167	1296	1687	576	3442	3473	135	1774	3539	1583
Grp Volume(v), veh/h	183	0	859	24	0	21	1493	222	231	4	91	136
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1798	0	1761	1721	1770	1839	1774	1770	1583
Q Serve(g_s), s	4.7	0.0	14.8	1.3	0.0	1.2	43.7	5.7	5.7	0.2	2.3	8.1
Cycle Q Clear(g_c), s	4.7	0.0	14.8	1.3	0.0	1.2	43.7	5.7	5.7	0.2	2.3	8.1
Prop In Lane	1.00		1.00	0.72		0.33	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	592	0	1963	63	0	62	1558	1098	1141	9	611	273
V/C Ratio(X)	0.31	0.00	0.44	0.38	0.00	0.35	0.96	0.20	0.20	0.43	0.15	0.50
Avail Cap(c_a), veh/h	613	0	1981	310	0	304	1585	1098	1141	85	611	273
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.1	0.0	10.3	49.2	0.0	49.1	27.6	8.6	8.6	51.7	36.6	39.0
Incr Delay (d2), s/veh	0.3	0.0	0.2	3.7	0.0	3.3	13.8	0.4	0.4	28.4	0.5	6.3
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	2.3	0.0	6.4	0.7	0.0	0.7	23.7	2.9	3.0	0.2	1.2	4.0
LnGrp Delay(d),s/veh	38.4	0.0	10.5	52.9	0.0	52.5	41.4	9.0	9.0	80.1	37.1	45.4
LnGrp LOS	D		B	D		D	D	A	A	F	D	D
Approach Vol, veh/h		1042			45			1946			231	
Approach Delay, s/veh		15.4			52.7			33.9			42.7	
Approach LOS		B			D			C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.0	69.2		21.9	51.7	22.5		8.1				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	61.0		18.0	48.0	18.0		18.0				
Max Q Clear Time (g_c+I1), s	2.2	7.7		16.8	45.7	10.1		3.3				
Green Ext Time (p_c), s	0.0	2.8		0.6	1.5	0.5		0.1				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			28.9									
HCM 2010 LOS			C									
<b>Notes</b>												




















HCM 2010 Signalized Intersection Summary  
 4: Broadway & California Dr

04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	409	326	22	44	383	467	5	826	48	255	280	351
Future Volume (veh/h)	409	326	22	44	383	467	5	826	48	255	280	351
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	445	354	24	48	416	0	5	898	52	277	304	0
Adj No. of Lanes	2	1	0	1	2	1	1	2	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	516	453	31	71	540	242	416	1050	61	313	1002	852
Arrive On Green	0.15	0.26	0.26	0.04	0.15	0.00	0.31	0.31	0.31	0.18	0.54	0.00
Sat Flow, veh/h	3442	1725	117	1774	3539	1583	1071	3401	197	1774	1863	1583
Grp Volume(v), veh/h	445	0	378	48	416	0	5	467	483	277	304	0
Grp Sat Flow(s),veh/h/ln	1721	0	1842	1774	1770	1583	1071	1770	1828	1774	1863	1583
Q Serve(g_s), s	10.7	0.0	16.1	2.3	9.6	0.0	0.3	21.0	21.0	12.9	7.6	0.0
Cycle Q Clear(g_c), s	10.7	0.0	16.1	2.3	9.6	0.0	0.3	21.0	21.0	12.9	7.6	0.0
Prop In Lane	1.00		0.06	1.00		1.00	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	516	0	484	71	540	242	416	546	564	313	1002	852
V/C Ratio(X)	0.86	0.00	0.78	0.68	0.77	0.00	0.01	0.86	0.86	0.89	0.30	0.00
Avail Cap(c_a), veh/h	520	0	561	107	756	338	416	546	564	320	1002	852
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	35.2	0.0	29.0	40.2	34.5	0.0	20.3	27.5	27.5	34.1	10.8	0.0
Incr Delay (d2), s/veh	13.8	0.0	6.1	10.7	3.2	0.0	0.1	15.7	15.3	24.1	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	0.0	9.0	1.3	4.9	0.0	0.1	12.6	13.0	8.4	4.1	0.0
LnGrp Delay(d),s/veh	48.9	0.0	35.1	50.9	37.7	0.0	20.4	43.2	42.8	58.1	11.6	0.0
LnGrp LOS	D		D	D	D		C	D	D	E	B	
Approach Vol, veh/h		823			464			955			581	
Approach Delay, s/veh		42.6			39.0			42.9			33.8	
Approach LOS		D			D			D			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s	19.4	30.7	7.9	26.8		50.1	17.2	17.4				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s	15.3	25.8	5.1	25.8		45.6	12.8	18.1				
Max Q Clear Time (g_c+I1), s	14.9	23.0	4.3	18.1		9.6	12.7	11.6				
Green Ext Time (p_c), s	0.0	1.5	0.0	1.3		1.9	0.0	1.4				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			40.3									
HCM 2010 LOS			D									

























HCM 2010 Signalized Intersection Summary  
 5: Broadway & Carolan Dr

04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	81	0	323	0	1539	171	107	976	0
Future Volume (veh/h)	0	0	0	81	0	323	0	1539	171	107	976	0
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln				1900	1863	1863	1863	1863	1900	1863	1863	0
Adj Flow Rate, veh/h				88	0	351	0	1673	186	116	1061	0
Adj No. of Lanes				0	1	1	1	3	0	1	3	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	2	2	2	0
Cap, veh/h				448	0	400	115	2085	231	148	3071	0
Arrive On Green				0.25	0.00	0.25	0.00	0.45	0.45	0.08	0.60	0.00
Sat Flow, veh/h				1774	0	1583	530	4647	515	1774	5253	0
Grp Volume(v), veh/h				88	0	351	0	1219	640	116	1061	0
Grp Sat Flow(s),veh/h/ln				1774	0	1583	530	1695	1772	1774	1695	0
Q Serve(g_s), s				2.4	0.0	13.4	0.0	19.4	19.5	4.0	6.6	0.0
Cycle Q Clear(g_c), s				2.4	0.0	13.4	0.0	19.4	19.5	4.0	6.6	0.0
Prop In Lane				1.00		1.00	1.00		0.29	1.00		0.00
Lane Grp Cap(c), veh/h				448	0	400	115	1521	795	148	3071	0
V/C Ratio(X)				0.20	0.00	0.88	0.00	0.80	0.80	0.78	0.35	0.00
Avail Cap(c_a), veh/h				512	0	457	115	1521	795	184	3071	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				18.4	0.0	22.5	0.0	14.9	14.9	28.2	6.2	0.0
Incr Delay (d2), s/veh				0.2	0.0	15.9	0.0	4.5	8.5	16.0	0.3	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.2	0.0	7.6	0.0	9.9	11.3	2.6	3.1	0.0
LnGrp Delay(d),s/veh				18.7	0.0	38.4	0.0	19.4	23.4	44.2	6.5	0.0
LnGrp LOS				B		D		B	C	D	A	
Approach Vol, veh/h					439			1859			1177	
Approach Delay, s/veh					34.5			20.8			10.2	
Approach LOS					C			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	9.7	32.7				42.4		20.4				
Change Period (Y+Rc), s	4.5	4.5				4.5		4.5				
Max Green Setting (Gmax), s	6.5	26.9				37.9		18.1				
Max Q Clear Time (g_c+I1), s	6.0	21.5				8.6		15.4				
Green Ext Time (p_c), s	0.0	4.4				8.5		0.5				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				19.0								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary  
6: Broadway & Rollins Rd



























04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	169	57	105	109	187	430	190	1638	37	226	876	267
Future Volume (veh/h)	169	57	105	109	187	430	190	1638	37	226	876	267
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	184	62	114	118	203	0	207	1780	40	246	952	0
Adj No. of Lanes	2	1	1	1	1	1	2	3	0	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	263	246	209	150	261	222	295	2350	53	327	2384	742
Arrive On Green	0.08	0.13	0.13	0.08	0.14	0.00	0.09	0.46	0.46	0.10	0.47	0.00
Sat Flow, veh/h	3442	1863	1583	1774	1863	1583	3442	5118	115	3442	5085	1583
Grp Volume(v), veh/h	184	62	114	118	203	0	207	1179	641	246	952	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	1863	1583	1721	1695	1842	1721	1695	1583
Q Serve(g_s), s	4.1	2.3	5.3	5.1	8.3	0.0	4.6	22.7	22.7	5.5	9.6	0.0
Cycle Q Clear(g_c), s	4.1	2.3	5.3	5.1	8.3	0.0	4.6	22.7	22.7	5.5	9.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	263	246	209	150	261	222	295	1557	846	327	2384	742
V/C Ratio(X)	0.70	0.25	0.54	0.79	0.78	0.00	0.70	0.76	0.76	0.75	0.40	0.00
Avail Cap(c_a), veh/h	285	450	383	203	510	433	442	1557	846	346	2384	742
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	35.4	30.6	31.9	35.3	32.6	0.0	35.0	17.6	17.6	34.7	13.6	0.0
Incr Delay (d2), s/veh	6.7	0.5	2.2	13.5	5.0	0.0	3.0	3.5	6.3	8.4	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	1.2	2.4	3.1	4.6	0.0	2.3	11.2	12.9	3.0	4.6	0.0
LnGrp Delay(d),s/veh	42.1	31.1	34.1	48.8	37.6	0.0	38.0	21.1	23.9	43.1	14.1	0.0
LnGrp LOS	D	C	C	D	D		D	C	C	D	B	
Approach Vol, veh/h		360			321			2027			1198	
Approach Delay, s/veh		37.7			41.7			23.7			20.1	
Approach LOS		D			D			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	40.6	11.1	14.9	11.2	41.3	10.5	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	7.9	36.1	9.0	19.0	10.1	33.9	6.5	21.5				
Max Q Clear Time (g_c+1), s	7.5	24.7	7.1	7.3	6.6	11.6	6.1	10.3				
Green Ext Time (p_c), s	0.0	8.4	0.0	0.5	0.2	6.8	0.0	0.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			25.4									
HCM 2010 LOS			C									

# HCM Signalized Intersection Capacity Analysis

## 7: Broadway & US-101 SB Ramps

04/01/2020






















													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations			   					  		 	 		
Traffic Volume (vph)	451	0	690	0	0	0	0	1730	497	214	676	0	
Future Volume (vph)	451	0	690	0	0	0	0	1730	497	214	676	0	
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		
Lane Util. Factor		1.00	0.76					0.86	0.86	0.97	0.95		
Frt		1.00	0.85					1.00	0.85	1.00	1.00		
Flt Protected		0.95	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (prot)		1770	3610					4786	1362	3433	3539		
Flt Permitted		0.95	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (perm)		1770	3610					4786	1362	3433	3539		
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)	490	0	750	0	0	0	0	1880	540	233	735	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	3	131	0	0	0	
Lane Group Flow (vph)	0	490	750	0	0	0	0	1931	355	233	735	0	
Turn Type	Split	NA	custom					NA	Perm	Split	NA		
Protected Phases	7	7	2 7					2		6	6		
Permitted Phases									2				
Actuated Green, G (s)		26.7	70.5					39.3	39.3	20.5	20.5		
Effective Green, g (s)		26.7	70.5					39.3	39.3	20.5	20.5		
Actuated g/C Ratio		0.27	0.70					0.39	0.39	0.20	0.20		
Clearance Time (s)		4.5						4.5	4.5	4.5	4.5		
Vehicle Extension (s)		3.0						3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)		472	2545					1880	535	703	725		
v/s Ratio Prot		c0.28	0.21					c0.40		0.07	c0.21		
v/s Ratio Perm									0.26				
v/c Ratio		1.04	0.29					1.03	0.66	0.33	1.01		
Uniform Delay, d1		36.6	5.5					30.4	24.9	33.9	39.8		
Progression Factor		1.00	1.00					1.00	1.00	1.00	1.00		
Incremental Delay, d2		51.7	0.1					28.0	6.4	1.3	36.9		
Delay (s)		88.3	5.6					58.4	31.3	35.2	76.7		
Level of Service		F	A					E	C	D	E		
Approach Delay (s)		38.3			0.0			52.9			66.7		
Approach LOS		D			A			D			E		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			51.9									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			1.03										
Actuated Cycle Length (s)			100.0									Sum of lost time (s)	13.5
Intersection Capacity Utilization			79.5%									ICU Level of Service	D
Analysis Period (min)			15										

c Critical Lane Group

# HCM 2010 Signalized Intersection Summary






















## 8: US-101 NB Ramp & Old Bayshore Hwy

04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	285	101	942	564	7	464	8	441	12	10	5
Future Volume (veh/h)	8	285	101	942	564	7	464	8	441	12	10	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	9	310	110	1024	613	8	657	0	322	13	11	5
Adj No. of Lanes	1	2	1	2	2	0	2	0	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	20	449	201	1161	1620	21	1017	0	454	23	20	9
Arrive On Green	0.01	0.13	0.13	0.34	0.45	0.45	0.29	0.00	0.29	0.03	0.03	0.03
Sat Flow, veh/h	1774	3539	1583	3442	3577	47	3548	0	1583	793	671	305
Grp Volume(v), veh/h	9	310	110	1024	303	318	657	0	322	29	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1721	1770	1855	1774	0	1583	1769	0	0
Q Serve(g_s), s	0.4	6.9	5.3	23.0	9.3	9.3	13.3	0.0	14.9	1.3	0.0	0.0
Cycle Q Clear(g_c), s	0.4	6.9	5.3	23.0	9.3	9.3	13.3	0.0	14.9	1.3	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	0.45		0.17
Lane Grp Cap(c), veh/h	20	449	201	1161	801	840	1017	0	454	52	0	0
V/C Ratio(X)	0.45	0.69	0.55	0.88	0.38	0.38	0.65	0.00	0.71	0.56	0.00	0.00
Avail Cap(c_a), veh/h	108	777	348	1365	982	1029	1017	0	454	389	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	40.3	34.2	33.6	25.6	14.8	14.8	25.6	0.0	26.2	39.2	0.0	0.0
Incr Delay (d2), s/veh	14.9	1.9	2.3	6.3	0.3	0.3	3.2	0.0	9.1	8.9	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	0.3	3.5	2.5	12.0	4.5	4.7	6.9	0.0	7.6	0.8	0.0	0.0
LnGrp Delay(d),s/veh	55.2	36.2	35.9	31.9	15.1	15.1	28.8	0.0	35.2	48.2	0.0	0.0
LnGrp LOS	E	D	D	C	B	B	C		D	D		
Approach Vol, veh/h		429			1645			979			29	
Approach Delay, s/veh		36.5			25.6			30.9			48.2	
Approach LOS		D			C			C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		28.0	32.2	14.9		6.9	5.4	41.6				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		23.5	32.5	18.0		18.0	5.0	45.5				
Max Q Clear Time (g_c+I1), s		16.9	25.0	8.9		3.3	2.4	11.3				
Green Ext Time (p_c), s		2.2	2.7	1.5		0.1	0.0	4.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			29.0									
HCM 2010 LOS			C									
<b>Notes</b>												












HCM 2010 Signalized Intersection Summary  
 9: Anza Blvd & Airport Blvd

04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	524	45	52	144	28	27	22	34	23	51	43
Future Volume (veh/h)	150	524	45	52	144	28	27	22	34	23	51	43
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	163	570	49	57	157	30	26	27	37	25	55	47
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	193	722	62	83	466	87	434	456	388	166	366	316
Arrive On Green	0.11	0.22	0.22	0.05	0.16	0.16	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1774	3299	283	1774	2977	557	1774	1863	1583	678	1496	1290
Grp Volume(v), veh/h	163	305	314	57	92	95	26	27	37	67	0	60
Grp Sat Flow(s),veh/h/ln	1774	1770	1813	1774	1770	1764	1774	1863	1583	1829	0	1635
Q Serve(g_s), s	6.6	12.0	12.0	2.3	3.4	3.5	0.8	0.8	1.3	2.1	0.0	2.1
Cycle Q Clear(g_c), s	6.6	12.0	12.0	2.3	3.4	3.5	0.8	0.8	1.3	2.1	0.0	2.1
Prop In Lane	1.00		0.16	1.00		0.32	1.00		1.00	0.37		0.79
Lane Grp Cap(c), veh/h	193	387	396	83	277	276	434	456	388	448	0	400
V/C Ratio(X)	0.84	0.79	0.79	0.69	0.33	0.34	0.06	0.06	0.10	0.15	0.00	0.15
Avail Cap(c_a), veh/h	193	503	515	123	433	432	434	456	388	448	0	400
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	32.1	27.1	27.1	34.5	27.6	27.6	21.3	21.3	21.5	21.8	0.0	21.8
Incr Delay (d2), s/veh	27.5	6.2	6.2	9.6	0.7	0.7	0.3	0.2	0.5	0.7	0.0	0.8
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	4.7	6.5	6.7	1.4	1.7	1.8	0.4	0.5	0.6	1.2	0.0	1.0
LnGrp Delay(d),s/veh	59.6	33.4	33.4	44.1	28.3	28.4	21.5	21.5	22.0	22.5	0.0	22.5
LnGrp LOS	E	C	C	D	C	C	C	C	C	C		C
Approach Vol, veh/h		782			244			90			127	
Approach Delay, s/veh		38.8			32.0			21.7			22.5	
Approach LOS		D			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		22.5	7.9	20.6		22.5	12.5	16.0				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.0	5.1	20.9		18.0	8.0	18.0				
Max Q Clear Time (g_c+I1), s		3.3	4.3	14.0		4.1	8.6	5.5				
Green Ext Time (p_c), s		0.2	0.0	2.1		0.5	0.0	0.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			34.6									
HCM 2010 LOS			C									
<b>Notes</b>												

HCM 2010 Signalized Intersection Summary  
 10: US-101 NB Ramps & Airport Blvd

04/01/2020

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Traffic Volume (veh/h)	136	20	974	127	267	886		
Future Volume (veh/h)	136	20	974	127	267	886		
Number	4	14	3	8	5	12		
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		
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863		
Adj Flow Rate, veh/h	148	22	1158	0	290	963		
Adj No. of Lanes	2	0	2	1	1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	265	39	1386	728	531	1093		
Arrive On Green	0.09	0.09	0.39	0.00	0.30	0.30		
Sat Flow, veh/h	3193	453	3548	1863	1774	1583		
Grp Volume(v), veh/h	83	87	1158	0	290	963		
Grp Sat Flow(s),veh/h/ln	1770	1783	1774	1863	1774	1583		
Q Serve(g_s), s	2.7	2.8	17.7	0.0	8.2	18.0		
Cycle Q Clear(g_c), s	2.7	2.8	17.7	0.0	8.2	18.0		
Prop In Lane		0.25	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	151	152	1386	728	531	1093		
V/C Ratio(X)	0.55	0.57	0.84	0.00	0.55	0.88		
Avail Cap(c_a), veh/h	530	534	1800	945	531	1093		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00		
Uniform Delay (d), s/veh	26.4	26.4	16.6	0.0	17.6	5.7		
Incr Delay (d2), s/veh	3.1	3.3	2.8	0.0	4.0	10.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.5	1.5	9.1	0.0	4.6	18.9		
LnGrp Delay(d),s/veh	29.5	29.7	19.4	0.0	21.6	15.9		
LnGrp LOS	C	C	B		C	B		
Approach Vol, veh/h	170			1158	1253			
Approach Delay, s/veh	29.6			19.4	17.3			
Approach LOS	C			B	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		22.5		9.6				28.0
Change Period (Y+Rc), s		4.5		4.5				4.5
Max Green Setting (Gmax), s		18.0		18.0				30.5
Max Q Clear Time (g_c+I1), s		20.0		4.8				19.7
Green Ext Time (p_c), s		0.0		0.6				3.7
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			19.0					
HCM 2010 LOS			B					
<b>Notes</b>								

# HCM Signalized Intersection Capacity Analysis

## 11: Peninsula Ave & N. Bayshore Blvd

04/01/2020



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	258	167	931	200	52	722
Future Volume (vph)	258	167	931	200	52	722
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3445		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3445		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	280	182	1012	217	57	785
RTOR Reduction (vph)	0	139	26	0	0	0
Lane Group Flow (vph)	280	43	1203	0	57	785
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8				1	6
Permitted Phases		8	2			
Actuated Green, G (s)	13.5	13.5	27.5		2.9	34.9
Effective Green, g (s)	13.5	13.5	27.5		2.9	34.9
Actuated g/C Ratio	0.24	0.24	0.48		0.05	0.61
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	416	372	1650		89	2151
v/s Ratio Prot	c0.16				c0.03	0.22
v/s Ratio Perm		0.03	c0.35			
v/c Ratio	0.67	0.12	0.73		0.64	0.36
Uniform Delay, d1	19.9	17.3	12.0		26.7	5.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	4.3	0.1	2.9		14.7	0.5
Delay (s)	24.2	17.4	14.8		41.4	6.1
Level of Service	C	B	B		D	A
Approach Delay (s)	21.5		14.8			8.5
Approach LOS	C		B			A

### Intersection Summary

HCM 2000 Control Delay	14.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	57.4	Sum of lost time (s)	13.5
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

# HCM Signalized Intersection Capacity Analysis

## 12: Peninsula Ave/Coyote Point Dr & Airport Blvd

04/01/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	18	758	1093	36	13	7
Future Volume (vph)	18	758	1093	36	13	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	3433	1863	1863	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	3433	1863	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	20	824	1188	39	14	8
RTOR Reduction (vph)	0	331	0	0	0	6
Lane Group Flow (vph)	20	493	1188	39	14	2
Turn Type	Perm	pt+ov	Prot	NA	NA	Perm
Protected Phases		4 5	5	2	6	
Permitted Phases	4					6
Actuated Green, G (s)	9.2	42.7	29.0	53.1	19.6	19.6
Effective Green, g (s)	9.2	42.7	29.0	53.1	19.6	19.6
Actuated g/C Ratio	0.13	0.60	0.41	0.74	0.27	0.27
Clearance Time (s)	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	228	948	1396	1387	512	435
v/s Ratio Prot		c0.31	c0.35	c0.02	0.01	
v/s Ratio Perm	0.01					0.00
v/c Ratio	0.09	0.52	0.85	0.03	0.03	0.01
Uniform Delay, d1	27.4	8.3	19.2	2.4	18.9	18.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.5	5.2	0.0	0.1	0.0
Delay (s)	27.5	8.9	24.4	2.4	19.0	18.8
Level of Service	C	A	C	A	B	B
Approach Delay (s)	9.3			23.7	18.9	
Approach LOS	A			C	B	

### Intersection Summary

HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	71.3	Sum of lost time (s)	13.5
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection						
Int Delay, s/veh	2.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↖	↑↑	↗	
Traffic Vol, veh/h	424	20	0	144	102	0
Future Vol, veh/h	424	20	0	144	102	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	-	-	160	-	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	461	22	0	157	111	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	483	0	551
Stage 1	-	-	-	-	472
Stage 2	-	-	-	-	79
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	1076	-	464
Stage 1	-	-	-	-	594
Stage 2	-	-	-	-	935
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1076	-	464
Mov Cap-2 Maneuver	-	-	-	-	464
Stage 1	-	-	-	-	594
Stage 2	-	-	-	-	935

Approach	EB	WB	NB
HCM Control Delay, s	0	0	15.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	464	-	-	1076	-
HCM Lane V/C Ratio	0.239	-	-	-	-
HCM Control Delay (s)	15.2	-	-	0	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.9	-	-	0	-

Intersection						
Int Delay, s/veh	1.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑	
Traffic Vol, veh/h	424	0	13	144	0	68
Future Vol, veh/h	424	0	13	144	0	68
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	461	0	14	157	0	74






















Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	461	0	568
Stage 1	-	-	-	-	461
Stage 2	-	-	-	-	107
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	1096	-	453
Stage 1	-	-	-	-	601
Stage 2	-	-	-	-	906
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1096	-	447
Mov Cap-2 Maneuver	-	-	-	-	447
Stage 1	-	-	-	-	601
Stage 2	-	-	-	-	893

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	10.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	771	-	-	1096	-
HCM Lane V/C Ratio	0.096	-	-	0.013	-
HCM Control Delay (s)	10.2	-	-	8.3	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

HCM 2010 Signalized Intersection Summary  
 3: Broadway/Airport Blvd & Old Bayshore Hwy























04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	204	14	1040	17	33	15	846	305	15	4	169	158
Future Volume (veh/h)	204	14	1040	17	33	15	846	305	15	4	169	158
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	233	0	1130	18	36	16	920	332	16	4	184	172
Adj No. of Lanes	2	0	2	0	2	0	2	2	0	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	842	0	1482	45	92	42	794	1613	77	9	863	386
Arrive On Green	0.24	0.00	0.24	0.05	0.05	0.05	0.23	0.47	0.47	0.01	0.24	0.24
Sat Flow, veh/h	3548	0	3167	889	1818	827	3442	3438	165	1774	3539	1583
Grp Volume(v), veh/h	233	0	1130	37	0	33	920	170	178	4	184	172
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1818	0	1717	1721	1770	1834	1774	1770	1583
Q Serve(g_s), s	4.1	0.0	18.0	1.5	0.0	1.4	17.5	4.3	4.3	0.2	3.1	7.0
Cycle Q Clear(g_c), s	4.1	0.0	18.0	1.5	0.0	1.4	17.5	4.3	4.3	0.2	3.1	7.0
Prop In Lane	1.00		1.00	0.49		0.48	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	842	0	1482	92	0	87	794	830	860	9	863	386
V/C Ratio(X)	0.28	0.00	0.76	0.40	0.00	0.38	1.16	0.21	0.21	0.42	0.21	0.45
Avail Cap(c_a), veh/h	842	0	1482	431	0	407	794	830	860	117	863	386
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.6	0.0	16.7	34.9	0.0	34.8	29.2	11.8	11.8	37.6	22.9	24.3
Incr Delay (d2), s/veh	0.2	0.0	2.4	2.8	0.0	2.7	85.3	0.6	0.5	27.3	0.6	3.7
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	2.0	0.0	10.1	0.8	0.0	0.7	17.6	2.2	2.3	0.2	1.6	3.5
LnGrp Delay(d),s/veh	23.8	0.0	19.1	37.6	0.0	37.6	114.5	12.4	12.4	64.9	23.4	28.0
LnGrp LOS	C		B	D		D	F	B	B	E	C	C
Approach Vol, veh/h		1363			70			1268			360	
Approach Delay, s/veh		19.9			37.6			86.4			26.1	
Approach LOS		B			D			F			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.9	40.1		22.5	22.0	23.0		8.4				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	31.0		18.0	17.5	18.5		18.0				
Max Q Clear Time (g_c+I1), s	2.2	6.3		20.0	19.5	9.0		3.5				
Green Ext Time (p_c), s	0.0	1.9		0.0	0.0	1.1		0.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			48.6									
HCM 2010 LOS			D									
<b>Notes</b>												

# HCM 2010 Signalized Intersection Summary




















## 4: Broadway & California Dr

04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	317	335	32	37	396	392	8	193	37	292	431	423
Future Volume (veh/h)	317	335	32	37	396	392	8	193	37	292	431	423
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	345	364	35	40	430	0	9	210	40	317	468	0
Adj No. of Lanes	2	1	0	1	2	1	1	2	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	430	420	40	67	580	260	342	791	148	358	984	836
Arrive On Green	0.13	0.25	0.25	0.04	0.16	0.00	0.27	0.27	0.27	0.20	0.53	0.00
Sat Flow, veh/h	3442	1673	161	1774	3539	1583	921	2977	557	1774	1863	1583
Grp Volume(v), veh/h	345	0	399	40	430	0	9	123	127	317	468	0
Grp Sat Flow(s),veh/h/ln	1721	0	1834	1774	1770	1583	921	1770	1764	1774	1863	1583
Q Serve(g_s), s	7.2	0.0	15.4	1.6	8.5	0.0	0.5	4.1	4.2	12.8	11.7	0.0
Cycle Q Clear(g_c), s	7.2	0.0	15.4	1.6	8.5	0.0	0.5	4.1	4.2	12.8	11.7	0.0
Prop In Lane	1.00		0.09	1.00		1.00	1.00		0.32	1.00		1.00
Lane Grp Cap(c), veh/h	430	0	461	67	580	260	342	470	469	358	984	836
V/C Ratio(X)	0.80	0.00	0.87	0.59	0.74	0.00	0.03	0.26	0.27	0.89	0.48	0.00
Avail Cap(c_a), veh/h	443	0	556	123	863	386	342	470	469	372	984	836
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	31.4	0.0	26.5	35.0	29.4	0.0	20.1	21.4	21.5	28.7	11.0	0.0
Incr Delay (d2), s/veh	9.9	0.0	11.8	8.1	1.9	0.0	0.1	1.4	1.4	21.3	1.6	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	4.0	0.0	9.3	1.0	4.3	0.0	0.1	2.2	2.2	8.4	6.4	0.0
LnGrp Delay(d),s/veh	41.4	0.0	38.2	43.1	31.3	0.0	20.2	22.8	22.9	50.0	12.6	0.0
LnGrp LOS	D		D	D	C		C	C	C	D	B	
Approach Vol, veh/h		744			470			259			785	
Approach Delay, s/veh		39.7			32.3			22.7			27.7	
Approach LOS		D			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s	19.4	24.1	7.3	23.0		43.5	13.7	16.6				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s	15.5	19.0	5.1	22.4		39.0	9.5	18.0				
Max Q Clear Time (g_c+I1), s	14.8	6.2	3.6	17.4		13.7	9.2	10.5				
Green Ext Time (p_c), s	0.1	1.1	0.0	1.0		3.0	0.0	1.6				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			32.0									
HCM 2010 LOS			C									

























HCM 2010 Signalized Intersection Summary  
5: Broadway & Carolan Dr

04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	41	0	245	1	795	106	205	1151	1
Future Volume (veh/h)	0	0	0	41	0	245	1	795	106	205	1151	1
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln				1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h				45	0	266	1	864	115	223	1251	1
Adj No. of Lanes				0	1	1	1	3	0	1	3	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	2	2	2	2
Cap, veh/h				369	0	330	304	1735	230	276	3265	3
Arrive On Green				0.21	0.00	0.21	0.38	0.38	0.38	0.16	0.62	0.62
Sat Flow, veh/h				1774	0	1583	442	4545	602	1774	5248	4
Grp Volume(v), veh/h				45	0	266	1	644	335	223	808	444
Grp Sat Flow(s),veh/h/ln				1774	0	1583	442	1695	1756	1774	1695	1862
Q Serve(g_s), s				1.1	0.0	8.5	0.1	7.7	7.7	6.4	6.3	6.3
Cycle Q Clear(g_c), s				1.1	0.0	8.5	0.1	7.7	7.7	6.4	6.3	6.3
Prop In Lane				1.00		1.00	1.00		0.34	1.00		0.00
Lane Grp Cap(c), veh/h				369	0	330	304	1294	671	276	2109	1158
V/C Ratio(X)				0.12	0.00	0.81	0.00	0.50	0.50	0.81	0.38	0.38
Avail Cap(c_a), veh/h				602	0	537	304	1294	671	351	2109	1158
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh				17.1	0.0	20.0	10.2	12.5	12.5	21.6	5.0	5.0
Incr Delay (d2), s/veh				0.1	0.0	4.7	0.0	1.4	2.7	10.5	0.5	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				0.6	0.0	4.1	0.0	3.8	4.2	4.0	3.1	3.5
LnGrp Delay(d),s/veh				17.2	0.0	24.7	10.2	13.9	15.2	32.1	5.5	5.9
LnGrp LOS				B		C	B	B	B	C	A	A
Approach Vol, veh/h					311			980			1475	
Approach Delay, s/veh					23.6			14.3			9.7	
Approach LOS					C			B			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	12.7	24.8				37.5		15.5				
Change Period (Y+Rc), s	4.5	4.5				4.5		4.5				
Max Green Setting (Gmax), s	10.5	18.0				33.0		18.0				
Max Q Clear Time (g_c+I1), s	8.4	9.7				8.3		10.5				
Green Ext Time (p_c), s	0.1	3.9				9.2		0.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				12.9								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary  
6: Broadway & Rollins Rd

























04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	339	207	177	43	68	186	138	865	44	461	1142	126
Future Volume (veh/h)	339	207	177	43	68	186	138	865	44	461	1142	126
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	368	225	192	47	74	0	150	940	48	501	1241	0
Adj No. of Lanes	2	1	1	1	1	1	2	3	0	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	476	320	272	78	144	123	249	1616	82	616	2201	685
Arrive On Green	0.14	0.17	0.17	0.04	0.08	0.00	0.07	0.33	0.33	0.18	0.43	0.00
Sat Flow, veh/h	3442	1863	1583	1774	1863	1583	3442	4956	253	3442	5085	1583
Grp Volume(v), veh/h	368	225	192	47	74	0	150	643	345	501	1241	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	1863	1583	1721	1695	1818	1721	1695	1583
Q Serve(g_s), s	6.7	7.3	7.4	1.7	2.5	0.0	2.7	10.2	10.2	9.0	11.8	0.0
Cycle Q Clear(g_c), s	6.7	7.3	7.4	1.7	2.5	0.0	2.7	10.2	10.2	9.0	11.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	476	320	272	78	144	123	249	1106	593	616	2201	685
V/C Ratio(X)	0.77	0.70	0.71	0.60	0.51	0.00	0.60	0.58	0.58	0.81	0.56	0.00
Avail Cap(c_a), veh/h	561	639	543	176	520	442	299	1106	593	721	2201	685
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	26.8	25.2	25.2	30.3	28.6	0.0	29.0	18.1	18.1	25.4	13.7	0.0
Incr Delay (d2), s/veh	5.7	2.8	3.4	7.2	2.8	0.0	2.4	2.2	4.1	6.2	1.1	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	3.5	4.0	3.5	1.0	1.4	0.0	1.4	5.1	5.8	4.8	5.7	0.0
LnGrp Delay(d),s/veh	32.5	28.0	28.5	37.4	31.4	0.0	31.4	20.3	22.2	31.6	14.8	0.0
LnGrp LOS	C	C	C	D	C		C	C	C	C	B	
Approach Vol, veh/h		785			121			1138			1742	
Approach Delay, s/veh		30.2			33.7			22.3			19.6	
Approach LOS		C			C			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.0	25.5	7.3	15.6	9.2	32.4	13.4	9.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	13.5	20.0	6.4	22.1	5.6	27.9	10.5	18.0				
Max Q Clear Time (g_c+I1), s	11.0	12.2	3.7	9.4	4.7	13.8	8.7	4.5				
Green Ext Time (p_c), s	0.5	3.7	0.0	1.5	0.0	7.2	0.3	0.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			23.1									
HCM 2010 LOS			C									

# HCM Signalized Intersection Capacity Analysis

## 7: Broadway & US-101 SB Ramps






















04/01/2020

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations			  					  		 	 		
Traffic Volume (vph)	188	0	970	0	0	0	0	831	552	477	749	0	
Future Volume (vph)	188	0	970	0	0	0	0	831	552	477	749	0	
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		
Lane Util. Factor		1.00	0.76					0.86	0.86	0.97	0.95		
Frt		1.00	0.85					0.97	0.85	1.00	1.00		
Flt Protected		0.95	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (prot)		1770	3610					4646	1362	3433	3539		
Flt Permitted		0.95	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (perm)		1770	3610					4646	1362	3433	3539		
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)	204	0	1054	0	0	0	0	903	600	518	814	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	69	243	0	0	0	
Lane Group Flow (vph)	0	204	1054	0	0	0	0	1092	99	518	814	0	
Turn Type	Split	NA	custom					NA	Perm	Split	NA		
Protected Phases	7	7	2 7					2		6	6		
Permitted Phases									2				
Actuated Green, G (s)		17.3	41.8					20.0	20.0	18.5	18.5		
Effective Green, g (s)		17.3	41.8					20.0	20.0	18.5	18.5		
Actuated g/C Ratio		0.25	0.60					0.29	0.29	0.27	0.27		
Clearance Time (s)		4.5						4.5	4.5	4.5	4.5		
Vehicle Extension (s)		3.0						3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)		441	2177					1340	393	916	944		
v/s Ratio Prot		0.12	c0.29					c0.24		0.15	c0.23		
v/s Ratio Perm									0.07				
v/c Ratio		0.46	0.48					0.81	0.25	0.57	0.86		
Uniform Delay, d1		22.1	7.7					22.9	18.9	21.9	24.2		
Progression Factor		1.00	1.00					1.00	1.00	1.00	1.00		
Incremental Delay, d2		0.8	0.2					5.5	1.5	2.5	10.2		
Delay (s)		22.8	7.9					28.5	20.4	24.5	34.4		
Level of Service		C	A					C	C	C	C		
Approach Delay (s)		10.3			0.0			26.6			30.6		
Approach LOS		B			A			C			C		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			22.9									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.74										
Actuated Cycle Length (s)			69.3									Sum of lost time (s)	13.5
Intersection Capacity Utilization			58.1%									ICU Level of Service	B
Analysis Period (min)			15										

c Critical Lane Group





















HCM 2010 Signalized Intersection Summary  
 8: US-101 NB Ramp & Old Bayshore Hwy

04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	790	247	671	289	18	173	4	386	17	11	5
Future Volume (veh/h)	12	790	247	671	289	18	173	4	386	17	11	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	13	859	268	729	314	20	127	0	488	18	12	5
Adj No. of Lanes	1	2	1	2	2	0	1	0	2	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	28	990	443	826	1704	108	401	0	715	31	20	9
Arrive On Green	0.02	0.28	0.28	0.24	0.50	0.50	0.23	0.00	0.23	0.03	0.03	0.03
Sat Flow, veh/h	1774	3539	1583	3442	3380	214	1774	0	3167	912	608	253
Grp Volume(v), veh/h	13	859	268	729	164	170	127	0	488	35	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1721	1770	1825	1774	0	1583	1772	0	0
Q Serve(g_s), s	0.6	18.8	12.0	16.6	4.1	4.2	4.9	0.0	11.5	1.6	0.0	0.0
Cycle Q Clear(g_c), s	0.6	18.8	12.0	16.6	4.1	4.2	4.9	0.0	11.5	1.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.12	1.00		1.00	0.51		0.14
Lane Grp Cap(c), veh/h	28	990	443	826	892	920	401	0	715	60	0	0
V/C Ratio(X)	0.47	0.87	0.61	0.88	0.18	0.19	0.32	0.00	0.68	0.59	0.00	0.00
Avail Cap(c_a), veh/h	109	1047	468	908	892	920	401	0	715	392	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	39.8	27.9	25.4	29.9	11.0	11.1	26.3	0.0	28.9	38.8	0.0	0.0
Incr Delay (d2), s/veh	11.8	7.6	2.0	9.6	0.1	0.1	2.1	0.0	5.2	8.9	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	0.4	10.2	5.5	9.0	2.0	2.1	2.6	0.0	5.5	0.9	0.0	0.0
LnGrp Delay(d),s/veh	51.5	35.5	27.5	39.5	11.1	11.1	28.4	0.0	34.1	47.7	0.0	0.0
LnGrp LOS	D	D	C	D	B	B	C		C	D		
Approach Vol, veh/h		1140			1063			615			35	
Approach Delay, s/veh		33.8			30.6			32.9			47.7	
Approach LOS		C			C			C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		22.9	24.0	27.3		7.2	5.8	45.6				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.4	21.5	24.1		18.0	5.0	40.6				
Max Q Clear Time (g_c+I1), s		13.5	18.6	20.8		3.6	2.6	6.2				
Green Ext Time (p_c), s		1.2	0.9	2.0		0.1	0.0	2.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			32.6									
HCM 2010 LOS			C									
<b>Notes</b>												












HCM 2010 Signalized Intersection Summary  
 9: Anza Blvd & Airport Blvd

04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	374	36	152	182	20	15	5	25	69	114	78
Future Volume (veh/h)	59	374	36	152	182	20	15	5	25	69	114	78
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	64	407	39	165	198	22	10	13	27	75	124	85
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	88	541	52	186	712	78	434	456	388	218	367	260
Arrive On Green	0.05	0.17	0.17	0.10	0.22	0.22	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1774	3266	311	1774	3217	353	1774	1863	1583	899	1517	1075
Grp Volume(v), veh/h	64	220	226	165	108	112	10	13	27	152	0	132
Grp Sat Flow(s),veh/h/ln	1774	1770	1808	1774	1770	1800	1774	1863	1583	1818	0	1673
Q Serve(g_s), s	2.6	8.8	8.9	6.8	3.8	3.8	0.3	0.4	1.0	5.1	0.0	4.8
Cycle Q Clear(g_c), s	2.6	8.8	8.9	6.8	3.8	3.8	0.3	0.4	1.0	5.1	0.0	4.8
Prop In Lane	1.00		0.17	1.00		0.20	1.00		1.00	0.49		0.64
Lane Grp Cap(c), veh/h	88	293	300	186	392	399	434	456	388	440	0	405
V/C Ratio(X)	0.73	0.75	0.76	0.89	0.28	0.28	0.02	0.03	0.07	0.34	0.00	0.33
Avail Cap(c_a), veh/h	169	429	438	186	445	453	434	456	388	440	0	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	0.00	1.00
Uniform Delay (d), s/veh	34.8	29.5	29.6	32.8	24.0	24.0	21.3	21.3	21.6	23.3	0.0	23.2
Incr Delay (d2), s/veh	11.1	4.2	4.3	36.2	0.4	0.4	0.1	0.1	0.3	2.1	0.0	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	4.6	4.8	5.2	1.9	1.9	0.2	0.2	0.5	2.8	0.0	2.5
LnGrp Delay(d),s/veh	45.9	33.7	33.9	69.1	24.4	24.4	21.4	21.5	21.9	25.4	0.0	25.3
LnGrp LOS	D	C	C	E	C	C	C	C	C	C		C
Approach Vol, veh/h		510			385			50			284	
Approach Delay, s/veh		35.3			43.5			21.7			25.4	
Approach LOS		D			D			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		22.7	12.3	16.8		22.5	8.2	21.0				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.2	7.8	18.0		18.0	7.1	18.7				
Max Q Clear Time (g_c+I1), s		3.0	8.8	10.9		7.1	4.6	5.8				
Green Ext Time (p_c), s		0.1	0.0	1.4		1.2	0.0	0.9				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			35.0									
HCM 2010 LOS			D									
<b>Notes</b>												

HCM 2010 Signalized Intersection Summary  
 10: US-101 NB Ramps & Airport Blvd

04/01/2020

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Traffic Volume (veh/h)	406	44	642	89	68	488		
Future Volume (veh/h)	406	44	642	89	68	488		
Number	4	14	3	8	5	12		
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		
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863		
Adj Flow Rate, veh/h	441	48	767	0	74	530		
Adj No. of Lanes	2	0	2	1	1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	624	68	947	497	547	911		
Arrive On Green	0.19	0.19	0.27	0.00	0.31	0.31		
Sat Flow, veh/h	3315	349	3548	1863	1774	1583		
Grp Volume(v), veh/h	241	248	767	0	74	530		
Grp Sat Flow(s),veh/h/ln	1770	1801	1774	1863	1774	1583		
Q Serve(g_s), s	7.4	7.5	11.8	0.0	1.8	12.5		
Cycle Q Clear(g_c), s	7.4	7.5	11.8	0.0	1.8	12.5		
Prop In Lane		0.19	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	343	349	947	497	547	911		
V/C Ratio(X)	0.70	0.71	0.81	0.00	0.14	0.58		
Avail Cap(c_a), veh/h	545	555	1245	654	547	911		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00		
Uniform Delay (d), s/veh	22.0	22.0	20.0	0.0	14.6	7.9		
Incr Delay (d2), s/veh	2.6	2.7	3.1	0.0	0.5	2.7		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	3.9	4.0	6.2	0.0	0.9	9.1		
LnGrp Delay(d),s/veh	24.6	24.7	23.1	0.0	15.1	10.6		
LnGrp LOS	C	C	C		B	B		
Approach Vol, veh/h	489			767	604			
Approach Delay, s/veh	24.7			23.1	11.2			
Approach LOS	C			C	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		22.5		15.8				20.1
Change Period (Y+Rc), s		4.5		4.5				4.5
Max Green Setting (Gmax), s		18.0		18.0				20.5
Max Q Clear Time (g_c+I1), s		14.5		9.5				13.8
Green Ext Time (p_c), s		0.9		1.8				1.8
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			19.6					
HCM 2010 LOS			B					
<b>Notes</b>								

# HCM Signalized Intersection Capacity Analysis

## 11: Peninsula Ave & N. Bayshore Blvd

04/01/2020



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	187	69	625	335	213	669
Future Volume (vph)	187	69	625	335	213	669
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	0.95		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3354		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3354		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	203	75	679	364	232	727
RTOR Reduction (vph)	0	60	101	0	0	0
Lane Group Flow (vph)	203	15	942	0	232	727
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8				1	6
Permitted Phases		8	2			
Actuated Green, G (s)	11.9	11.9	22.8		10.8	38.1
Effective Green, g (s)	11.9	11.9	22.8		10.8	38.1
Actuated g/C Ratio	0.20	0.20	0.39		0.18	0.65
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	357	319	1296		324	2285
v/s Ratio Prot	c0.11				c0.13	0.21
v/s Ratio Perm		0.01	c0.28			
v/c Ratio	0.57	0.05	0.73		0.72	0.32
Uniform Delay, d1	21.2	19.0	15.4		22.7	4.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.1	0.1	3.6		7.3	0.4
Delay (s)	23.3	19.0	19.0		30.0	5.0
Level of Service	C	B	B		C	A
Approach Delay (s)	22.2		19.0			11.1
Approach LOS	C		B			B

### Intersection Summary

HCM 2000 Control Delay	16.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	59.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

# HCM Signalized Intersection Capacity Analysis

## 12: Peninsula Ave/Coyote Point Dr & Airport Blvd

04/01/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	78	782	684	39	97	26
Future Volume (vph)	78	782	684	39	97	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	3433	1863	1863	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	3433	1863	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	85	850	743	42	105	28
RTOR Reduction (vph)	0	307	0	0	0	19
Lane Group Flow (vph)	85	543	743	42	105	9
Turn Type	Perm	pt+ov	Prot	NA	NA	Perm
Protected Phases		4 5	5	2	6	
Permitted Phases	4					6
Actuated Green, G (s)	12.6	35.0	17.9	42.8	20.4	20.4
Effective Green, g (s)	12.6	35.0	17.9	42.8	20.4	20.4
Actuated g/C Ratio	0.20	0.54	0.28	0.66	0.32	0.32
Clearance Time (s)	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	346	860	954	1238	590	501
v/s Ratio Prot		c0.34	c0.22	0.02	c0.06	
v/s Ratio Perm	0.05					0.01
v/c Ratio	0.25	0.63	0.78	0.03	0.18	0.02
Uniform Delay, d1	21.9	10.2	21.4	3.7	15.9	15.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	1.5	4.1	0.1	0.7	0.1
Delay (s)	22.3	11.7	25.5	3.8	16.6	15.2
Level of Service	C	B	C	A	B	B
Approach Delay (s)	12.7			24.3	16.3	
Approach LOS	B			C	B	

### Intersection Summary

HCM 2000 Control Delay	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	64.4	Sum of lost time (s)	13.5
Intersection Capacity Utilization	61.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

# Queues

## 3: Broadway/Airport Blvd & Old Bayshore Hwy

04/10/2020



Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	93	94	859	45	1493	453	4	91	136
v/c Ratio	0.40	0.40	0.42	0.20	0.93	0.19	0.05	0.15	0.35
Control Delay	46.7	46.6	1.0	44.0	38.5	8.1	51.2	38.9	9.7
Queue Delay	0.0	0.0	0.0	0.0	32.2	0.0	0.0	0.0	0.0
Total Delay	46.7	46.6	1.0	44.0	70.7	8.1	51.2	38.9	9.7
Queue Length 50th (ft)	61	62	0	13	487	54	3	27	0
Queue Length 95th (ft)	115	116	14	32	#700	110	15	53	54
Internal Link Dist (ft)		573		269		426		518	
Turn Bay Length (ft)	360						210		115
Base Capacity (vph)	295	298	2081	602	1609	2363	86	622	390
Starvation Cap Reductn	0	0	0	0	212	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.32	0.41	0.07	1.07	0.19	0.05	0.15	0.35

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 4: Broadway & California Dr

04/10/2020



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	445	378	48	416	508	5	950	277	304	382
v/c Ratio	0.89	0.64	0.47	0.64	0.88	0.02	0.92	0.91	0.32	0.38
Control Delay	59.9	32.8	56.7	38.0	29.7	23.4	45.6	71.0	13.8	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.8	7.2	1.6
Total Delay	59.9	32.8	56.7	38.0	29.7	23.4	45.6	121.8	21.1	4.2
Queue Length 50th (ft)	130	190	27	113	87	2	274	157	97	0
Queue Length 95th (ft)	#218	292	#69	162	#270	10	#401	#304	153	43
Internal Link Dist (ft)		329		578			73		137	
Turn Bay Length (ft)	225		95		350	50				
Base Capacity (vph)	498	587	102	725	601	314	1034	306	962	1002
Starvation Cap Reductn	0	0	0	0	0	0	0	82	603	436
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.64	0.47	0.57	0.85	0.02	0.92	1.24	0.85	0.67

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Queues

5: Broadway & Carolan Dr

04/10/2020



Lane Group	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	88	351	1859	116	1061
v/c Ratio	0.26	0.73	0.73	0.59	0.32
Control Delay	21.1	18.5	15.7	41.6	5.4
Queue Delay	0.0	0.0	35.0	0.0	0.0
Total Delay	21.1	18.5	50.7	41.6	5.4
Queue Length 50th (ft)	26	42	182	39	47
Queue Length 95th (ft)	58	117	#317	#114	95
Internal Link Dist (ft)	312		137		329
Turn Bay Length (ft)		200		125	
Base Capacity (vph)	551	641	2548	198	3318
Starvation Cap Reductn	0	0	810	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.16	0.55	1.07	0.59	0.32

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 6: Broadway & Rollins Rd

04/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	184	62	114	118	203	467	207	1820	246	952	290
v/c Ratio	0.73	0.14	0.25	0.69	0.48	0.93	0.57	0.88	0.80	0.48	0.36
Control Delay	59.0	30.2	6.2	61.0	33.9	48.1	44.4	30.8	61.0	21.7	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.6	0.0	0.0	0.0
Total Delay	59.0	30.2	6.2	61.0	33.9	48.1	44.4	47.4	61.0	21.7	3.9
Queue Length 50th (ft)	54	29	0	66	99	163	58	345	72	149	0
Queue Length 95th (ft)	#104	63	36	#143	165	#349	93	#415	#134	188	49
Internal Link Dist (ft)		340			251			329		336	
Turn Bay Length (ft)	130		110			160	90		200		155
Base Capacity (vph)	251	429	462	180	452	524	391	2069	306	1985	795
Starvation Cap Reductn	0	0	0	0	0	0	0	292	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.14	0.25	0.66	0.45	0.89	0.53	1.02	0.80	0.48	0.36

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 7: Broadway & US-101 SB Ramps

04/10/2020



Lane Group	EBT	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	490	750	1934	486	233	735
v/c Ratio	1.04	0.29	1.03	0.73	0.33	1.01
Control Delay	88.9	5.8	58.5	21.4	35.5	77.3
Queue Delay	0.0	0.0	29.5	0.8	0.0	0.0
Total Delay	88.9	5.8	88.0	22.2	35.5	77.3
Queue Length 50th (ft)	~338	67	~512	169	65	~253
Queue Length 95th (ft)	#535	88	#616	326	101	#379
Internal Link Dist (ft)	446		336			426
Turn Bay Length (ft)		200		105		
Base Capacity (vph)	472	2545	1884	665	703	725
Starvation Cap Reductn	0	0	273	40	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.04	0.29	1.20	0.78	0.33	1.01

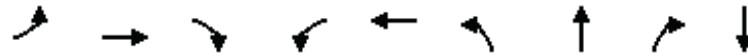
### Intersection Summary

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

Queues

8: US-101 NB Ramp & Old Bayshore Hwy

04/10/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	9	310	110	1024	621	343	333	316	29
v/c Ratio	0.09	0.60	0.31	0.82	0.32	0.78	0.77	0.50	0.21
Control Delay	46.8	41.8	4.9	34.4	13.4	46.6	42.4	6.9	40.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.8	41.8	4.9	34.4	13.4	46.6	42.4	6.9	40.2
Queue Length 50th (ft)	5	92	0	290	103	203	182	0	14
Queue Length 95th (ft)	22	139	24	#452	180	#392	#373	73	43
Internal Link Dist (ft)		386			573		242		94
Turn Bay Length (ft)	205		170			130			
Base Capacity (vph)	99	713	437	1248	1914	442	433	628	362
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.43	0.25	0.82	0.32	0.78	0.77	0.50	0.08

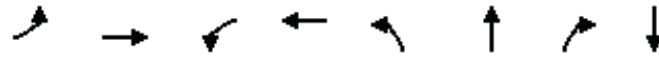
Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 9: Anza Blvd & Airport Blvd

04/10/2020



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	163	619	57	187	26	27	37	127
v/c Ratio	0.86	0.66	0.47	0.30	0.06	0.06	0.08	0.15
Control Delay	75.5	28.6	49.9	23.9	24.7	24.7	0.3	16.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.5	28.6	49.9	23.9	24.7	24.7	0.3	16.6
Queue Length 50th (ft)	81	143	28	34	10	10	0	16
Queue Length 95th (ft)	#196	200	#74	61	31	32	0	38
Internal Link Dist (ft)		477		433		347		50
Turn Bay Length (ft)	90		210					
Base Capacity (vph)	189	983	120	849	403	422	489	830
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.63	0.47	0.22	0.06	0.06	0.08	0.15

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 10: US-101 NB Ramps & Airport Blvd

04/10/2020



Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	170	593	604	290	963
v/c Ratio	0.39	0.81	0.82	0.64	0.74
Control Delay	28.0	29.3	29.5	31.4	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	28.0	29.3	29.5	31.4	6.6
Queue Length 50th (ft)	32	227	231	112	57
Queue Length 95th (ft)	60	#438	#445	#198	202
Internal Link Dist (ft)	300		611	186	
Turn Bay Length (ft)				230	230
Base Capacity (vph)	901	728	737	452	1307
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.19	0.81	0.82	0.64	0.74

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 11: Peninsula Ave & N. Bayshore Blvd

04/10/2020



Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	280	182	1229	57	785
v/c Ratio	0.65	0.35	0.71	0.35	0.37
Control Delay	26.5	5.2	16.5	31.4	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	26.5	5.2	16.5	31.4	7.1
Queue Length 50th (ft)	83	0	175	18	62
Queue Length 95th (ft)	148	37	#332	51	111
Internal Link Dist (ft)	179		604		286
Turn Bay Length (ft)				100	
Base Capacity (vph)	578	640	1732	163	2104
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.48	0.28	0.71	0.35	0.37

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 12: Peninsula Ave/Coyote Point Dr & Airport Blvd

04/10/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	20	824	1188	39	14	8
v/c Ratio	0.09	0.64	0.85	0.03	0.03	0.02
Control Delay	26.8	3.1	27.6	3.5	21.9	13.3
Queue Delay	0.0	0.0	5.8	0.0	0.0	0.0
Total Delay	26.8	3.1	33.4	3.5	21.9	13.3
Queue Length 50th (ft)	8	0	218	3	4	0
Queue Length 95th (ft)	25	35	#423	15	20	11
Internal Link Dist (ft)	611			286	438	
Turn Bay Length (ft)			85			
Base Capacity (vph)	451	1284	1425	1387	511	440
Starvation Cap Reductn	0	0	190	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.64	0.96	0.03	0.03	0.02

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 3: Broadway/Airport Blvd & Old Bayshore Hwy

04/01/2020



Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	118	119	1130	70	920	348	4	184	172
v/c Ratio	0.34	0.34	0.60	0.22	1.12	0.19	0.03	0.21	0.32
Control Delay	29.0	29.0	2.0	28.8	100.8	11.6	35.8	24.6	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.0	29.0	2.0	28.8	100.8	11.6	35.8	24.6	5.8
Queue Length 50th (ft)	50	51	0	13	-288	44	2	38	0
Queue Length 95th (ft)	101	101	20	32	#412	90	11	66	42
Internal Link Dist (ft)		573		269		426		518	
Turn Bay Length (ft)	360						210		115
Base Capacity (vph)	413	416	1910	842	820	1864	121	894	536
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.29	0.59	0.08	1.12	0.19	0.03	0.21	0.32

### Intersection Summary

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

Queues

4: Broadway & California Dr

04/01/2020



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	345	399	40	430	426	9	250	317	468	460
v/c Ratio	0.82	0.70	0.35	0.60	0.65	0.04	0.29	0.91	0.50	0.49
Control Delay	51.9	32.4	44.4	31.9	8.1	24.2	22.9	63.0	15.8	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.5	36.1	2.8
Total Delay	51.9	32.4	44.4	31.9	8.1	24.2	22.9	113.6	51.8	9.1
Queue Length 50th (ft)	88	180	20	100	0	4	48	157	152	41
Queue Length 95th (ft)	#158	#313	50	145	73	15	80	#307	235	107
Internal Link Dist (ft)		329		578			73		137	
Turn Bay Length (ft)	225		95		350	50				
Base Capacity (vph)	419	574	115	819	694	226	869	352	935	947
Starvation Cap Reductn	0	0	0	0	0	0	0	92	488	365
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.70	0.35	0.53	0.61	0.04	0.29	1.22	1.05	0.79

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 5: Broadway & Carolan Dr

04/01/2020



Lane Group	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	45	266	1	979	223	1252
v/c Ratio	0.17	0.57	0.01	0.51	0.64	0.37
Control Delay	19.2	8.4	12.0	13.2	28.9	4.4
Queue Delay	0.0	0.0	0.0	0.8	0.0	0.0
Total Delay	19.2	8.4	12.0	14.0	28.9	4.4
Queue Length 50th (ft)	12	0	0	72	57	40
Queue Length 95th (ft)	33	48	3	126	#148	89
Internal Link Dist (ft)	312			137		329
Turn Bay Length (ft)		200	40		125	
Base Capacity (vph)	642	744	150	1905	374	3385
Starvation Cap Reductn	0	0	0	558	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.36	0.01	0.73	0.60	0.37

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 6: Broadway & Rollins Rd

04/01/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	368	225	192	47	74	202	150	988	501	1241	137
v/c Ratio	0.74	0.47	0.34	0.31	0.28	0.51	0.56	0.69	0.80	0.63	0.20
Control Delay	41.4	27.6	5.2	38.3	30.0	9.1	42.3	26.6	40.2	20.3	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.4	27.6	5.2	38.3	30.0	9.1	42.3	26.6	40.2	20.3	3.9
Queue Length 50th (ft)	81	92	0	20	30	0	33	141	109	157	0
Queue Length 95th (ft)	#157	157	41	54	65	50	#71	209	#202	234	32
Internal Link Dist (ft)		340			251			329		336	
Turn Bay Length (ft)	130		110			160	90		200		155
Base Capacity (vph)	501	572	628	157	466	549	267	1433	644	1972	701
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.39	0.31	0.30	0.16	0.37	0.56	0.69	0.78	0.63	0.20

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 7: Broadway & US-101 SB Ramps

04/01/2020



Lane Group	EBT	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	204	1054	1161	342	518	814
v/c Ratio	0.46	0.48	0.82	0.54	0.57	0.86
Control Delay	26.0	8.6	27.3	6.2	25.0	35.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.0	8.6	27.3	6.2	25.0	35.8
Queue Length 50th (ft)	74	97	165	0	99	175
Queue Length 95th (ft)	132	132	#223	65	145	#274
Internal Link Dist (ft)	446		336			426
Turn Bay Length (ft)		200		105		
Base Capacity (vph)	459	2164	1410	636	916	944
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.49	0.82	0.54	0.57	0.86

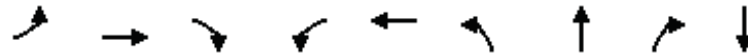
### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 8: US-101 NB Ramp & Old Bayshore Hwy

04/01/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	13	859	268	729	334	169	225	218	35
v/c Ratio	0.12	0.85	0.44	0.84	0.17	0.46	0.47	0.44	0.23
Control Delay	43.5	39.5	9.1	41.1	10.3	35.3	10.2	7.7	37.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.5	39.5	9.1	41.1	10.3	35.3	10.2	7.7	37.7
Queue Length 50th (ft)	7	243	21	203	43	88	12	0	16
Queue Length 95th (ft)	26	#368	86	#313	87	158	81	61	45
Internal Link Dist (ft)		386			573		242		94
Turn Bay Length (ft)	205		170			130			
Base Capacity (vph)	104	1009	608	873	2008	366	475	498	383
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.85	0.44	0.84	0.17	0.46	0.47	0.44	0.09

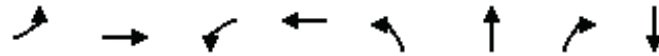
### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 9: Anza Blvd & Airport Blvd

04/01/2020



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	64	446	165	220	10	11	27	284
v/c Ratio	0.41	0.66	0.92	0.24	0.03	0.03	0.06	0.34
Control Delay	42.4	32.9	87.1	23.0	24.1	24.1	0.2	19.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.4	32.9	87.1	23.0	24.1	24.1	0.2	19.3
Queue Length 50th (ft)	29	101	79	44	4	4	0	42
Queue Length 95th (ft)	69	148	#200	74	16	17	0	78
Internal Link Dist (ft)		477		433		347		50
Turn Bay Length (ft)	90		210					
Base Capacity (vph)	164	830	180	961	399	409	485	842
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.54	0.92	0.23	0.03	0.03	0.06	0.34

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 10: US-101 NB Ramps & Airport Blvd

04/01/2020



Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	489	398	397	74	530
v/c Ratio	0.64	0.80	0.78	0.15	0.50
Control Delay	26.7	35.9	34.7	20.4	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	26.7	35.9	34.7	20.4	7.0
Queue Length 50th (ft)	92	151	149	23	67
Queue Length 95th (ft)	136	#312	#308	55	155
Internal Link Dist (ft)	300		611	186	
Turn Bay Length (ft)				230	230
Base Capacity (vph)	981	532	540	492	1061
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.50	0.75	0.74	0.15	0.50

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 11: Peninsula Ave & N. Bayshore Blvd

04/01/2020



Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	203	75	1043	232	727
v/c Ratio	0.57	0.20	0.75	0.71	0.32
Control Delay	27.7	6.8	18.5	38.0	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	27.7	6.8	18.5	38.0	5.6
Queue Length 50th (ft)	65	0	138	77	50
Queue Length 95th (ft)	120	27	#253	#184	96
Internal Link Dist (ft)	179		604		286
Turn Bay Length (ft)				100	
Base Capacity (vph)	541	535	1394	345	2284
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.38	0.14	0.75	0.67	0.32

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 12: Peninsula Ave/Coyote Point Dr & Airport Blvd

04/01/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	85	850	743	42	105	28
v/c Ratio	0.25	0.73	0.78	0.03	0.18	0.05
Control Delay	22.8	6.2	29.4	5.2	19.3	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.8	6.2	29.4	5.2	19.3	8.3
Queue Length 50th (ft)	28	31	137	5	30	0
Queue Length 95th (ft)	61	110	#239	17	70	17
Internal Link Dist (ft)	611			286	438	
Turn Bay Length (ft)			85			
Base Capacity (vph)	511	1177	992	1237	589	520
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.72	0.75	0.03	0.18	0.05

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

**Appendix H – Background plus Project Conditions Intersections  
Level of Service & Queueing Worksheets**

Intersection						
Int Delay, s/veh	0.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↵	↑↑	↵	
Traffic Vol, veh/h	468	250	0	324	41	0
Future Vol, veh/h	468	250	0	324	41	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	-	-	160	-	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	509	272	0	352	45	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	781	0	821
Stage 1	-	-	-	-	645
Stage 2	-	-	-	-	176
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	832	-	313
Stage 1	-	-	-	-	484
Stage 2	-	-	-	-	837
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	832	-	313
Mov Cap-2 Maneuver	-	-	-	-	313
Stage 1	-	-	-	-	484
Stage 2	-	-	-	-	837

Approach	EB	WB	NB
HCM Control Delay, s	0	0	18.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	313	-	-	832	-
HCM Lane V/C Ratio	0.142	-	-	-	-
HCM Control Delay (s)	18.4	-	-	0	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.5	-	-	0	-

HCM 2010 TWSC  
 2: Project Dwy E & Airport Blvd/Broadway

04/01/2020

Intersection						
Int Delay, s/veh	2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑	
Traffic Vol, veh/h	468	0	165	324	0	27
Future Vol, veh/h	468	0	165	324	0	27
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	509	0	179	352	0	29






















Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	509	0	1043
Stage 1	-	-	-	-	509
Stage 2	-	-	-	-	534
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	1052	-	225
Stage 1	-	-	-	-	569
Stage 2	-	-	-	-	552
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1052	-	177
Mov Cap-2 Maneuver	-	-	-	-	177
Stage 1	-	-	-	-	569
Stage 2	-	-	-	-	435

Approach	EB	WB	NB
HCM Control Delay, s	0	3.4	10
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	744	-	-	1052	-
HCM Lane V/C Ratio	0.039	-	-	0.17	-
HCM Control Delay (s)	10	-	-	9.1	0.5
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.6	-

HCM 2010 Signalized Intersection Summary  
 3: Broadway/Airport Blvd & Old Bayshore Hwy























04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	194	14	790	16	19	6	1374	449	16	4	92	131
Future Volume (veh/h)	194	14	790	16	19	6	1374	449	16	4	92	131
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	222	0	859	17	21	7	1493	488	17	4	100	142
Adj No. of Lanes	2	0	2	0	2	0	2	2	0	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	593	0	1963	45	59	20	1558	2164	75	9	611	273
Arrive On Green	0.17	0.00	0.17	0.03	0.03	0.03	0.45	0.62	0.62	0.01	0.17	0.17
Sat Flow, veh/h	3548	0	3167	1296	1687	576	3442	3490	121	1774	3539	1583
Grp Volume(v), veh/h	222	0	859	24	0	21	1493	247	258	4	100	142
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1798	0	1761	1721	1770	1841	1774	1770	1583
Q Serve(g_s), s	5.8	0.0	14.8	1.3	0.0	1.2	43.7	6.4	6.4	0.2	2.5	8.5
Cycle Q Clear(g_c), s	5.8	0.0	14.8	1.3	0.0	1.2	43.7	6.4	6.4	0.2	2.5	8.5
Prop In Lane	1.00		1.00	0.72		0.33	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	593	0	1963	63	0	62	1558	1097	1142	9	611	273
V/C Ratio(X)	0.37	0.00	0.44	0.38	0.00	0.35	0.96	0.23	0.23	0.43	0.16	0.52
Avail Cap(c_a), veh/h	612	0	1980	310	0	304	1584	1097	1142	85	611	273
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.6	0.0	10.3	49.2	0.0	49.2	27.6	8.7	8.7	51.7	36.7	39.2
Incr Delay (d2), s/veh	0.4	0.0	0.2	3.7	0.0	3.3	13.9	0.5	0.5	28.4	0.6	6.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	6.4	0.7	0.0	0.7	23.7	3.2	3.4	0.2	1.3	4.2
LnGrp Delay(d),s/veh	39.0	0.0	10.5	52.9	0.0	52.5	41.4	9.2	9.2	80.1	37.3	46.1
LnGrp LOS	D		B	D		D	D	A	A	F	D	D
Approach Vol, veh/h		1081			45			1998			246	
Approach Delay, s/veh		16.3			52.7			33.3			43.1	
Approach LOS		B			D			C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.0	69.2		21.9	51.7	22.5		8.1				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	61.0		18.0	48.0	18.0		18.0				
Max Q Clear Time (g_c+I1), s	2.2	8.4		16.8	45.7	10.5		3.3				
Green Ext Time (p_c), s	0.0	3.2		0.7	1.5	0.6		0.1				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			28.8									
HCM 2010 LOS			C									
<b>Notes</b>												

# HCM 2010 Signalized Intersection Summary




















## 4: Broadway & California Dr

04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	409	326	22	44	383	479	5	850	48	257	284	351
Future Volume (veh/h)	409	326	22	44	383	479	5	850	48	257	284	351
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	445	354	24	48	416	0	5	924	52	279	309	0
Adj No. of Lanes	2	1	0	1	2	1	1	2	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	516	453	31	71	540	242	413	1047	59	315	1002	852
Arrive On Green	0.15	0.26	0.26	0.04	0.15	0.00	0.31	0.31	0.31	0.18	0.54	0.00
Sat Flow, veh/h	3442	1725	117	1774	3539	1583	1066	3407	192	1774	1863	1583
Grp Volume(v), veh/h	445	0	378	48	416	0	5	480	496	279	309	0
Grp Sat Flow(s),veh/h/ln	1721	0	1842	1774	1770	1583	1066	1770	1829	1774	1863	1583
Q Serve(g_s), s	10.7	0.0	16.1	2.3	9.6	0.0	0.3	21.8	21.8	13.0	7.8	0.0
Cycle Q Clear(g_c), s	10.7	0.0	16.1	2.3	9.6	0.0	0.3	21.8	21.8	13.0	7.8	0.0
Prop In Lane	1.00		0.06	1.00		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	516	0	484	71	540	242	413	544	562	315	1002	852
V/C Ratio(X)	0.86	0.00	0.78	0.68	0.77	0.00	0.01	0.88	0.88	0.89	0.31	0.00
Avail Cap(c_a), veh/h	520	0	561	107	756	338	413	544	562	324	1002	852
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	35.2	0.0	29.0	40.2	34.5	0.0	20.4	27.9	27.9	34.0	10.8	0.0
Incr Delay (d2), s/veh	13.8	0.0	6.1	10.7	3.2	0.0	0.1	18.4	17.9	23.8	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	0.0	9.0	1.3	4.9	0.0	0.1	13.4	13.8	8.4	4.2	0.0
LnGrp Delay(d),s/veh	48.9	0.0	35.1	50.9	37.7	0.0	20.5	46.3	45.8	57.8	11.6	0.0
LnGrp LOS	D		D	D	D		C	D	D	E	B	
Approach Vol, veh/h		823			464			981			588	
Approach Delay, s/veh		42.6			39.0			45.9			33.6	
Approach LOS		D			D			D			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s	19.5	30.6	7.9	26.8		50.1	17.2	17.4				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s	15.5	25.6	5.1	25.8		45.6	12.8	18.1				
Max Q Clear Time (g_c+I1), s	15.0	23.8	4.3	18.1		9.8	12.7	11.6				
Green Ext Time (p_c), s	0.0	1.0	0.0	1.3		1.9	0.0	1.4				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			41.3									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary  
 5: Broadway & Carolan Dr

























04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	81	0	323	0	1575	171	107	982	0
Future Volume (veh/h)	0	0	0	81	0	323	0	1575	171	107	982	0
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln				1900	1863	1863	1863	1863	1900	1863	1863	0
Adj Flow Rate, veh/h				88	0	351	0	1712	186	116	1067	0
Adj No. of Lanes				0	1	1	1	3	0	1	3	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	2	2	2	0
Cap, veh/h				448	0	400	115	2092	227	148	3071	0
Arrive On Green				0.25	0.00	0.25	0.00	0.45	0.45	0.08	0.60	0.00
Sat Flow, veh/h				1774	0	1583	527	4659	505	1774	5253	0
Grp Volume(v), veh/h				88	0	351	0	1244	654	116	1067	0
Grp Sat Flow(s),veh/h/ln				1774	0	1583	527	1695	1774	1774	1695	0
Q Serve(g_s), s				2.4	0.0	13.4	0.0	20.1	20.2	4.0	6.6	0.0
Cycle Q Clear(g_c), s				2.4	0.0	13.4	0.0	20.1	20.2	4.0	6.6	0.0
Prop In Lane				1.00		1.00	1.00		0.28	1.00		0.00
Lane Grp Cap(c), veh/h				448	0	400	115	1522	796	148	3071	0
V/C Ratio(X)				0.20	0.00	0.88	0.00	0.82	0.82	0.79	0.35	0.00
Avail Cap(c_a), veh/h				512	0	457	115	1522	796	167	3071	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				18.4	0.0	22.5	0.0	15.1	15.1	28.2	6.2	0.0
Incr Delay (d2), s/veh				0.2	0.0	15.9	0.0	5.0	9.3	19.4	0.3	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.2	0.0	7.6	0.0	10.4	11.9	2.8	3.2	0.0
LnGrp Delay(d),s/veh				18.7	0.0	38.4	0.0	20.1	24.4	47.6	6.5	0.0
LnGrp LOS				B		D		C	C	D	A	
Approach Vol, veh/h					439			1898			1183	
Approach Delay, s/veh					34.5			21.5			10.6	
Approach LOS					C			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	9.7	32.7				42.4		20.4				
Change Period (Y+Rc), s	4.5	4.5				4.5		4.5				
Max Green Setting (Gmax), s	5.9	27.5				37.9		18.1				
Max Q Clear Time (g_c+I1), s	6.0	22.2				8.6		15.4				
Green Ext Time (p_c), s	0.0	4.4				8.6		0.5				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				19.5								
HCM 2010 LOS				B								

# HCM 2010 Signalized Intersection Summary

## 6: Broadway & Rollins Rd













04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	169	57	105	109	187	430	190	1674	37	226	882	267
Future Volume (veh/h)	169	57	105	109	187	430	190	1674	37	226	882	267
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	184	62	114	118	203	0	207	1820	40	246	959	0
Adj No. of Lanes	2	1	1	1	1	1	2	3	0	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	262	245	208	149	260	221	294	2369	52	326	2399	747
Arrive On Green	0.08	0.13	0.13	0.08	0.14	0.00	0.09	0.46	0.46	0.09	0.47	0.00
Sat Flow, veh/h	3442	1863	1583	1774	1863	1583	3442	5121	112	3442	5085	1583
Grp Volume(v), veh/h	184	62	114	118	203	0	207	1205	655	246	959	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	1863	1583	1721	1695	1843	1721	1695	1583
Q Serve(g_s), s	4.1	2.4	5.3	5.2	8.3	0.0	4.6	23.5	23.5	5.5	9.7	0.0
Cycle Q Clear(g_c), s	4.1	2.4	5.3	5.2	8.3	0.0	4.6	23.5	23.5	5.5	9.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	262	245	208	149	260	221	294	1568	853	326	2399	747
V/C Ratio(X)	0.70	0.25	0.55	0.79	0.78	0.00	0.70	0.77	0.77	0.75	0.40	0.00
Avail Cap(c_a), veh/h	265	437	371	201	505	429	438	1568	853	334	2399	747
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	35.8	30.9	32.2	35.6	32.9	0.0	35.3	17.8	17.8	35.0	13.6	0.0
Incr Delay (d2), s/veh	8.0	0.5	2.2	13.8	5.0	0.0	3.1	3.7	6.6	9.2	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	1.3	2.5	3.1	4.6	0.0	2.3	11.7	13.4	3.0	4.6	0.0
LnGrp Delay(d),s/veh	43.8	31.5	34.5	49.5	38.0	0.0	38.4	21.4	24.4	44.2	14.1	0.0
LnGrp LOS	D	C	C	D	D		D	C	C	D	B	
Approach Vol, veh/h		360			321			2067			1205	
Approach Delay, s/veh		38.7			42.2			24.1			20.3	
Approach LOS		D			D			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	41.2	11.2	14.9	11.3	41.9	10.5	15.6				
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	7.7	36.7	9.0	18.6	10.1	34.3	6.1	21.5				
Max Q Clear Time (g_c+1), s	7.5	25.5	7.2	7.3	6.6	11.7	6.1	10.3				
Green Ext Time (p_c), s	0.0	8.4	0.0	0.5	0.2	6.9	0.0	0.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			25.7									
HCM 2010 LOS			C									

# HCM Signalized Intersection Capacity Analysis

## 7: Broadway & US-101 SB Ramps

04/01/2020

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↔	↔↔↔					↔↔↔	↔	↔↔	↔↔		
Traffic Volume (vph)	463	0	690	0	0	0	0	1766	497	216	682	0	
Future Volume (vph)	463	0	690	0	0	0	0	1766	497	216	682	0	
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		
Lane Util. Factor		1.00	0.76					0.86	0.86	0.97	0.95		
Frt		1.00	0.85					1.00	0.85	1.00	1.00		
Flt Protected		0.95	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (prot)		1770	3610					4786	1362	3433	3539		
Flt Permitted		0.95	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (perm)		1770	3610					4786	1362	3433	3539		
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)	503	0	750	0	0	0	0	1920	540	235	741	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	2	116	0	0	0	
Lane Group Flow (vph)	0	503	750	0	0	0	0	1972	370	235	741	0	
Turn Type	Split	NA	custom					NA	Perm	Split	NA		
Protected Phases	7	7	2 7					2		6	6		
Permitted Phases									2				
Actuated Green, G (s)		29.8	78.5					44.2	44.2	22.5	22.5		
Effective Green, g (s)		29.8	78.5					44.2	44.2	22.5	22.5		
Actuated g/C Ratio		0.27	0.71					0.40	0.40	0.20	0.20		
Clearance Time (s)		4.5						4.5	4.5	4.5	4.5		
Vehicle Extension (s)		3.0						3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)		479	2576					1923	547	702	723		
v/s Ratio Prot		c0.28	0.21					c0.41		0.07	c0.21		
v/s Ratio Perm									0.27				
v/c Ratio		1.05	0.29					1.03	0.68	0.33	1.02		
Uniform Delay, d1		40.1	5.7					32.9	27.0	37.4	43.8		
Progression Factor		1.00	1.00					1.00	1.00	1.00	1.00		
Incremental Delay, d2		54.9	0.1					27.2	6.6	1.3	39.9		
Delay (s)		95.0	5.8					60.1	33.6	38.6	83.7		
Level of Service		F	A					E	C	D	F		
Approach Delay (s)		41.6			0.0			54.9			72.8		
Approach LOS		D			A			D			E		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			55.1									HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			1.03										
Actuated Cycle Length (s)			110.0									Sum of lost time (s)	13.5
Intersection Capacity Utilization			80.9%									ICU Level of Service	D
Analysis Period (min)			15										



























c Critical Lane Group

# HCM Signalized Intersection Capacity Analysis

## 7: Broadway & US-101 SB Ramps

With Mitigations






















04/09/2020

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations			   					  		  	 		
Traffic Volume (vph)	463	0	690	0	0	0	0	1766	497	216	682	0	
Future Volume (vph)	463	0	690	0	0	0	0	1766	497	216	682	0	
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		
Lane Util. Factor		1.00	0.76					0.86	0.86	0.97	0.95		
Frt		1.00	0.85					1.00	0.85	1.00	1.00		
Flt Protected		0.95	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (prot)		1770	3610					4786	1362	3433	3539		
Flt Permitted		0.95	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (perm)		1770	3610					4786	1362	3433	3539		
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	463	0	690	0	0	0	0	1766	497	216	682	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	3	142	0	0	0	
Lane Group Flow (vph)	0	463	690	0	0	0	0	1813	305	216	682	0	
Turn Type	Split	NA	custom					NA	Perm	Split	NA		
Protected Phases	7	7	2 7					2		6	6		
Permitted Phases									2				
Actuated Green, G (s)		23.9	62.7					34.3	34.3	18.3	18.3		
Effective Green, g (s)		23.9	62.7					34.3	34.3	18.3	18.3		
Actuated g/C Ratio		0.27	0.70					0.38	0.38	0.20	0.20		
Clearance Time (s)		4.5						4.5	4.5	4.5	4.5		
Vehicle Extension (s)		3.0						3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)		470	2514					1823	519	698	719		
v/s Ratio Prot		c0.26	0.19					c0.38		0.06	c0.19		
v/s Ratio Perm									0.22				
v/c Ratio		0.99	0.27					0.99	0.59	0.31	0.95		
Uniform Delay, d1		32.9	5.1					27.8	22.2	30.5	35.4		
Progression Factor		1.00	1.00					1.00	1.00	1.00	1.00		
Incremental Delay, d2		37.3	0.1					19.8	4.8	1.2	23.1		
Delay (s)		70.2	5.2					47.6	27.0	31.6	58.5		
Level of Service		E	A					D	C	C	E		
Approach Delay (s)		31.3			0.0			43.5			52.0		
Approach LOS		C			A			D			D		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			42.0									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.98										
Actuated Cycle Length (s)			90.0									Sum of lost time (s)	13.5
Intersection Capacity Utilization			80.9%									ICU Level of Service	D
Analysis Period (min)			15										

c Critical Lane Group

HCM 2010 Signalized Intersection Summary  
 8: US-101 NB Ramp & Old Bayshore Hwy






















04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	285	101	948	564	7	464	8	477	12	10	5
Future Volume (veh/h)	8	285	101	948	564	7	464	8	477	12	10	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	9	310	110	1030	613	8	671	0	346	13	11	5
Adj No. of Lanes	1	2	1	2	2	0	2	0	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	20	448	201	1166	1625	21	1015	0	453	23	20	9
Arrive On Green	0.01	0.13	0.13	0.34	0.45	0.45	0.29	0.00	0.29	0.03	0.03	0.03
Sat Flow, veh/h	1774	3539	1583	3442	3577	47	3548	0	1583	793	671	305
Grp Volume(v), veh/h	9	310	110	1030	303	318	671	0	346	29	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1721	1770	1855	1774	0	1583	1769	0	0
Q Serve(g_s), s	0.4	6.9	5.4	23.2	9.3	9.3	13.7	0.0	16.4	1.3	0.0	0.0
Cycle Q Clear(g_c), s	0.4	6.9	5.4	23.2	9.3	9.3	13.7	0.0	16.4	1.3	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	0.45		0.17
Lane Grp Cap(c), veh/h	20	448	201	1166	804	842	1015	0	453	52	0	0
V/C Ratio(X)	0.45	0.69	0.55	0.88	0.38	0.38	0.66	0.00	0.76	0.56	0.00	0.00
Avail Cap(c_a), veh/h	108	775	347	1361	980	1027	1015	0	453	388	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	40.4	34.3	33.7	25.6	14.8	14.8	25.8	0.0	26.8	39.3	0.0	0.0
Incr Delay (d2), s/veh	14.9	1.9	2.3	6.4	0.3	0.3	3.4	0.0	11.6	9.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	3.5	2.5	12.1	4.5	4.7	7.2	0.0	8.6	0.8	0.0	0.0
LnGrp Delay(d),s/veh	55.3	36.3	36.0	32.1	15.1	15.1	29.2	0.0	38.4	48.3	0.0	0.0
LnGrp LOS	E	D	D	C	B	B	C		D	D		
Approach Vol, veh/h		429			1651			1017				29
Approach Delay, s/veh		36.6			25.7			32.3				48.3
Approach LOS		D			C			C				D
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		28.0	32.3	14.9		6.9	5.4	41.8				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		23.5	32.5	18.0		18.0	5.0	45.5				
Max Q Clear Time (g_c+I1), s		18.4	25.2	8.9		3.3	2.4	11.3				
Green Ext Time (p_c), s		2.0	2.6	1.5		0.1	0.0	4.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				29.6								
HCM 2010 LOS				C								
<b>Notes</b>												

# HCM 2010 Signalized Intersection Summary












## 9: Anza Blvd & Airport Blvd

04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	608	45	62	158	28	27	22	94	23	51	43
Future Volume (veh/h)	150	608	45	62	158	28	27	22	94	23	51	43
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	163	661	49	67	172	30	26	27	102	25	55	47
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	187	793	59	88	549	94	422	443	376	161	355	306
Arrive On Green	0.11	0.24	0.24	0.05	0.18	0.18	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1774	3341	247	1774	3023	518	1774	1863	1583	678	1496	1290
Grp Volume(v), veh/h	163	350	360	67	99	103	26	27	102	67	0	60
Grp Sat Flow(s),veh/h/ln	1774	1770	1819	1774	1770	1771	1774	1863	1583	1829	0	1635
Q Serve(g_s), s	6.9	14.2	14.3	2.8	3.7	3.8	0.9	0.8	4.0	2.2	0.0	2.2
Cycle Q Clear(g_c), s	6.9	14.2	14.3	2.8	3.7	3.8	0.9	0.8	4.0	2.2	0.0	2.2
Prop In Lane	1.00		0.14	1.00		0.29	1.00		1.00	0.37		0.79
Lane Grp Cap(c), veh/h	187	420	432	88	321	322	422	443	376	435	0	389
V/C Ratio(X)	0.87	0.83	0.83	0.76	0.31	0.32	0.06	0.06	0.27	0.16	0.00	0.15
Avail Cap(c_a), veh/h	187	484	497	124	420	421	422	443	376	435	0	389
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	0.00	1.00
Uniform Delay (d), s/veh	33.4	27.5	27.5	35.5	26.9	26.9	22.3	22.3	23.5	22.9	0.0	22.8
Incr Delay (d2), s/veh	32.8	10.6	10.5	15.5	0.5	0.6	0.3	0.3	1.8	0.8	0.0	0.8
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	5.1	8.1	8.4	1.8	1.8	1.9	0.5	0.5	1.9	1.2	0.0	1.1
LnGrp Delay(d),s/veh	66.2	38.1	37.9	51.0	27.4	27.5	22.6	22.6	25.3	23.6	0.0	23.7
LnGrp LOS	E	D	D	D	C	C	C	C	C	C		C
Approach Vol, veh/h		873			269			155			127	
Approach Delay, s/veh		43.3			33.3			24.4			23.7	
Approach LOS		D			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		22.5	8.3	22.5		22.5	12.5	18.3				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.0	5.3	20.7		18.0	8.0	18.0				
Max Q Clear Time (g_c+I1), s		6.0	4.8	16.3		4.2	8.9	5.8				
Green Ext Time (p_c), s		0.4	0.0	1.7		0.5	0.0	0.8				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				37.6								
HCM 2010 LOS				D								
<b>Notes</b>												

HCM 2010 Signalized Intersection Summary  
 10: US-101 NB Ramps & Airport Blvd

04/01/2020

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Traffic Volume (veh/h)	144	27	974	174	315	886		
Future Volume (veh/h)	144	27	974	174	315	886		
Number	4	14	3	8	5	12		
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		
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863		
Adj Flow Rate, veh/h	157	29	1194	0	342	963		
Adj No. of Lanes	2	0	2	1	1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	266	48	1421	746	551	1126		
Arrive On Green	0.09	0.09	0.40	0.00	0.31	0.31		
Sat Flow, veh/h	3088	542	3548	1863	1774	1583		
Grp Volume(v), veh/h	91	95	1194	0	342	963		
Grp Sat Flow(s),veh/h/ln	1770	1767	1774	1863	1774	1583		
Q Serve(g_s), s	3.4	3.5	20.5	0.0	11.1	21.0		
Cycle Q Clear(g_c), s	3.4	3.5	20.5	0.0	11.1	21.0		
Prop In Lane		0.31	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	157	157	1421	746	551	1126		
V/C Ratio(X)	0.58	0.60	0.84	0.00	0.62	0.85		
Avail Cap(c_a), veh/h	471	471	1969	1034	551	1126		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00		
Uniform Delay (d), s/veh	29.6	29.6	18.3	0.0	19.9	5.8		
Incr Delay (d2), s/veh	3.4	3.7	2.5	0.0	5.2	8.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.8	1.9	10.4	0.0	6.2	20.3		
LnGrp Delay(d),s/veh	33.0	33.3	20.8	0.0	25.0	14.2		
LnGrp LOS	C	C	C		C	B		
Approach Vol, veh/h	186			1194	1305			
Approach Delay, s/veh	33.2			20.8	17.0			
Approach LOS	C			C	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		25.5		10.5				31.6
Change Period (Y+Rc), s		4.5		4.5				4.5
Max Green Setting (Gmax), s		21.0		18.0				37.5
Max Q Clear Time (g_c+I1), s		23.0		5.5				22.5
Green Ext Time (p_c), s		0.0		0.7				4.5
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			19.8					
HCM 2010 LOS			B					
<b>Notes</b>								

# HCM Signalized Intersection Capacity Analysis

## 11: Peninsula Ave & N. Bayshore Blvd

04/01/2020



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	258	179	966	200	54	728
Future Volume (vph)	258	179	966	200	54	728
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3448		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3448		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	280	195	1050	217	59	791
RTOR Reduction (vph)	0	149	24	0	0	0
Lane Group Flow (vph)	280	46	1243	0	59	791
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8				1	6
Permitted Phases		8	2			
Actuated Green, G (s)	13.5	13.5	27.5		2.9	34.9
Effective Green, g (s)	13.5	13.5	27.5		2.9	34.9
Actuated g/C Ratio	0.24	0.24	0.48		0.05	0.61
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	416	372	1651		89	2151
v/s Ratio Prot	c0.16				c0.03	0.22
v/s Ratio Perm		0.03	c0.36			
v/c Ratio	0.67	0.12	0.75		0.66	0.37
Uniform Delay, d1	19.9	17.3	12.2		26.8	5.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	4.3	0.1	3.2		17.0	0.5
Delay (s)	24.2	17.4	15.4		43.8	6.2
Level of Service	C	B	B		D	A
Approach Delay (s)	21.4		15.4			8.8
Approach LOS	C		B			A

### Intersection Summary

HCM 2000 Control Delay	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	57.4	Sum of lost time (s)	13.5
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

# HCM Signalized Intersection Capacity Analysis

## 12: Peninsula Ave/Coyote Point Dr & Airport Blvd

04/01/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	18	766	1140	36	13	7
Future Volume (vph)	18	766	1140	36	13	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	3433	1863	1863	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	3433	1863	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	20	833	1239	39	14	8
RTOR Reduction (vph)	0	324	0	0	0	6
Lane Group Flow (vph)	20	509	1239	39	14	2
Turn Type	Perm	pt+ov	Prot	NA	NA	Perm
Protected Phases		4 5	5	2	6	
Permitted Phases	4					6
Actuated Green, G (s)	9.4	43.7	29.8	53.1	18.8	18.8
Effective Green, g (s)	9.4	43.7	29.8	53.1	18.8	18.8
Actuated g/C Ratio	0.13	0.61	0.42	0.74	0.26	0.26
Clearance Time (s)	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	232	967	1430	1383	489	416
v/s Ratio Prot		c0.32	c0.36	c0.02	0.01	
v/s Ratio Perm	0.01					0.00
v/c Ratio	0.09	0.53	0.87	0.03	0.03	0.01
Uniform Delay, d1	27.3	8.0	19.0	2.4	19.6	19.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.5	5.8	0.0	0.1	0.0
Delay (s)	27.4	8.5	24.8	2.5	19.7	19.5
Level of Service	C	A	C	A	B	B
Approach Delay (s)	8.9			24.1	19.6	
Approach LOS	A			C	B	

### Intersection Summary

HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	71.5	Sum of lost time (s)	13.5
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection						
Int Delay, s/veh	6.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↖	↑↑	↗	
Traffic Vol, veh/h	424	46	0	144	241	0
Future Vol, veh/h	424	46	0	144	241	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	-	-	160	-	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	461	50	0	157	262	0

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	511	0	565	256
Stage 1	-	-	-	-	486	-
Stage 2	-	-	-	-	79	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1050	-	455	743
Stage 1	-	-	-	-	584	-
Stage 2	-	-	-	-	935	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1050	-	455	743
Mov Cap-2 Maneuver	-	-	-	-	455	-
Stage 1	-	-	-	-	584	-
Stage 2	-	-	-	-	935	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	23.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	455	-	-	1050	-
HCM Lane V/C Ratio	0.576	-	-	-	-
HCM Control Delay (s)	23.1	-	-	0	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	3.5	-	-	0	-

HCM 2010 TWSC  
2: Project Dwy E & Airport Blvd/Broadway

04/06/2020

Intersection						
Int Delay, s/veh	2.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑	
Traffic Vol, veh/h	424	0	31	144	0	161
Future Vol, veh/h	424	0	31	144	0	161
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	461	0	34	157	0	175

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	461	0	608
Stage 1	-	-	-	-	461
Stage 2	-	-	-	-	147
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	1096	-	427
Stage 1	-	-	-	-	601
Stage 2	-	-	-	-	865
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1096	-	412
Mov Cap-2 Maneuver	-	-	-	-	412
Stage 1	-	-	-	-	601
Stage 2	-	-	-	-	836

Approach	EB	WB	NB
HCM Control Delay, s	0	1.6	11
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	771	-	-	1096	-
HCM Lane V/C Ratio	0.227	-	-	0.031	-
HCM Control Delay (s)	11	-	-	8.4	0.1
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.9	-	-	0.1	-

HCM 2010 Signalized Intersection Summary  
 3: Broadway/Airport Blvd & Old Bayshore Hwy























04/01/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↵	↵↵		↵↵		↵↵	↵↵		↵	↵↵	↵
Traffic Volume (veh/h)	211	14	1040	17	33	15	846	313	15	4	216	193
Future Volume (veh/h)	211	14	1040	17	33	15	846	313	15	4	216	193
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	240	0	1130	18	36	16	920	340	16	4	235	210
Adj No. of Lanes	2	0	2	0	2	0	2	2	0	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	842	0	1482	45	92	42	794	1615	76	9	863	386
Arrive On Green	0.24	0.00	0.24	0.05	0.05	0.05	0.23	0.47	0.47	0.01	0.24	0.24
Sat Flow, veh/h	3548	0	3167	889	1818	827	3442	3442	161	1774	3539	1583
Grp Volume(v), veh/h	240	0	1130	37	0	33	920	174	182	4	235	210
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1818	0	1717	1721	1770	1834	1774	1770	1583
Q Serve(g_s), s	4.2	0.0	18.0	1.5	0.0	1.4	17.5	4.4	4.4	0.2	4.1	8.8
Cycle Q Clear(g_c), s	4.2	0.0	18.0	1.5	0.0	1.4	17.5	4.4	4.4	0.2	4.1	8.8
Prop In Lane	1.00		1.00	0.49		0.48	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	842	0	1482	92	0	87	794	830	861	9	863	386
V/C Ratio(X)	0.29	0.00	0.76	0.40	0.00	0.38	1.16	0.21	0.21	0.42	0.27	0.54
Avail Cap(c_a), veh/h	842	0	1482	431	0	407	794	830	861	117	863	386
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.7	0.0	16.7	34.9	0.0	34.8	29.2	11.9	11.9	37.6	23.2	25.0
Incr Delay (d2), s/veh	0.2	0.0	2.4	2.8	0.0	2.7	85.3	0.6	0.6	27.3	0.8	5.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	10.1	0.8	0.0	0.7	17.6	2.3	2.4	0.2	2.1	4.4
LnGrp Delay(d),s/veh	23.8	0.0	19.1	37.6	0.0	37.6	114.5	12.4	12.4	64.9	24.0	30.4
LnGrp LOS	C		B	D		D	F	B	B	E	C	C
Approach Vol, veh/h		1370			70			1276			449	
Approach Delay, s/veh		19.9			37.6			86.0			27.4	
Approach LOS		B			D			F			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.9	40.1		22.5	22.0	23.0		8.4				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	31.0		18.0	17.5	18.5		18.0				
Max Q Clear Time (g_c+I1), s	2.2	6.4		20.0	19.5	10.8		3.5				
Green Ext Time (p_c), s	0.0	2.0		0.0	0.0	1.3		0.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			48.0									
HCM 2010 LOS			D									
<b>Notes</b>												

# HCM 2010 Signalized Intersection Summary




















## 4: Broadway & California Dr

04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	317	335	32	37	396	394	8	197	37	304	454	423
Future Volume (veh/h)	317	335	32	37	396	394	8	197	37	304	454	423
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	345	364	35	40	430	0	9	214	40	330	493	0
Adj No. of Lanes	2	1	0	1	2	1	1	2	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	417	416	40	67	584	261	333	783	144	371	991	842
Arrive On Green	0.12	0.25	0.25	0.04	0.17	0.00	0.26	0.26	0.26	0.21	0.53	0.00
Sat Flow, veh/h	3442	1673	161	1774	3539	1583	900	2987	549	1774	1863	1583
Grp Volume(v), veh/h	345	0	399	40	430	0	9	125	129	330	493	0
Grp Sat Flow(s),veh/h/ln	1721	0	1834	1774	1770	1583	900	1770	1766	1774	1863	1583
Q Serve(g_s), s	7.3	0.0	15.5	1.6	8.6	0.0	0.6	4.2	4.3	13.4	12.5	0.0
Cycle Q Clear(g_c), s	7.3	0.0	15.5	1.6	8.6	0.0	0.6	4.2	4.3	13.4	12.5	0.0
Prop In Lane	1.00		0.09	1.00		1.00	1.00		0.31	1.00		1.00
Lane Grp Cap(c), veh/h	417	0	456	67	584	261	333	464	463	371	991	842
V/C Ratio(X)	0.83	0.00	0.88	0.60	0.74	0.00	0.03	0.27	0.28	0.89	0.50	0.00
Avail Cap(c_a), veh/h	417	0	541	122	858	384	333	464	463	394	991	842
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	31.9	0.0	26.8	35.2	29.5	0.0	20.4	21.7	21.8	28.5	11.1	0.0
Incr Delay (d2), s/veh	12.9	0.0	13.2	8.2	1.8	0.0	0.2	1.4	1.5	20.6	1.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	0.0	9.5	1.0	4.3	0.0	0.2	2.2	2.3	8.7	6.8	0.0
LnGrp Delay(d),s/veh	44.8	0.0	40.0	43.3	31.3	0.0	20.6	23.2	23.3	49.1	12.8	0.0
LnGrp LOS	D		D	D	C		C	C	C	D	B	
Approach Vol, veh/h		744			470			263			823	
Approach Delay, s/veh		42.2			32.3			23.1			27.4	
Approach LOS		D			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s	20.0	24.0	7.3	22.9		44.0	13.5	16.8				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s	16.5	18.5	5.1	21.9		39.5	9.0	18.0				
Max Q Clear Time (g_c+1), s	15.4	6.3	3.6	17.5		14.5	9.3	10.6				
Green Ext Time (p_c), s	0.1	1.1	0.0	0.9		3.1	0.0	1.6				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			32.7									
HCM 2010 LOS			C									
























HCM 2010 Signalized Intersection Summary  
5: Broadway & Carolan Dr

04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	41	0	245	1	801	106	205	1186	1
Future Volume (veh/h)	0	0	0	41	0	245	1	801	106	205	1186	1
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln				1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h				45	0	266	1	871	115	223	1289	1
Adj No. of Lanes				0	1	1	1	3	0	1	3	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	2	2	2	2
Cap, veh/h				369	0	330	298	1737	228	276	3265	3
Arrive On Green				0.21	0.00	0.21	0.38	0.38	0.38	0.16	0.62	0.62
Sat Flow, veh/h				1774	0	1583	426	4549	598	1774	5248	4
Grp Volume(v), veh/h				45	0	266	1	648	338	223	833	457
Grp Sat Flow(s),veh/h/ln				1774	0	1583	426	1695	1757	1774	1695	1862
Q Serve(g_s), s				1.1	0.0	8.5	0.1	7.8	7.8	6.4	6.5	6.5
Cycle Q Clear(g_c), s				1.1	0.0	8.5	0.1	7.8	7.8	6.4	6.5	6.5
Prop In Lane				1.00		1.00	1.00		0.34	1.00		0.00
Lane Grp Cap(c), veh/h				369	0	330	298	1294	671	276	2109	1158
V/C Ratio(X)				0.12	0.00	0.81	0.00	0.50	0.50	0.81	0.39	0.39
Avail Cap(c_a), veh/h				602	0	537	298	1294	671	351	2109	1158
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh				17.1	0.0	20.0	10.2	12.5	12.6	21.6	5.0	5.0
Incr Delay (d2), s/veh				0.1	0.0	4.7	0.0	1.4	2.7	10.5	0.6	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				0.6	0.0	4.1	0.0	3.8	4.3	4.0	3.2	3.6
LnGrp Delay(d),s/veh				17.2	0.0	24.7	10.2	13.9	15.2	32.1	5.6	6.0
LnGrp LOS				B		C	B	B	B	C	A	A
Approach Vol, veh/h					311			987			1513	
Approach Delay, s/veh					23.6			14.4			9.6	
Approach LOS					C			B			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	12.7	24.8				37.5		15.5				
Change Period (Y+Rc), s	4.5	4.5				4.5		4.5				
Max Green Setting (Gmax), s	10.5	18.0				33.0		18.0				
Max Q Clear Time (g_c+I1), s	8.4	9.8				8.5		10.5				
Green Ext Time (p_c), s	0.1	3.9				9.5		0.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				12.8								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary  
6: Broadway & Rollins Rd































04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	339	207	177	43	68	186	138	871	44	461	1177	126
Future Volume (veh/h)	339	207	177	43	68	186	138	871	44	461	1177	126
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	368	225	192	47	74	0	150	947	48	501	1279	0
Adj No. of Lanes	2	1	1	1	1	1	2	3	0	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	476	320	272	78	144	123	249	1617	82	616	2201	685
Arrive On Green	0.14	0.17	0.17	0.04	0.08	0.00	0.07	0.33	0.33	0.18	0.43	0.00
Sat Flow, veh/h	3442	1863	1583	1774	1863	1583	3442	4958	251	3442	5085	1583
Grp Volume(v), veh/h	368	225	192	47	74	0	150	647	348	501	1279	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	1863	1583	1721	1695	1818	1721	1695	1583
Q Serve(g_s), s	6.7	7.3	7.4	1.7	2.5	0.0	2.7	10.2	10.3	9.0	12.3	0.0
Cycle Q Clear(g_c), s	6.7	7.3	7.4	1.7	2.5	0.0	2.7	10.2	10.3	9.0	12.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	476	320	272	78	144	123	249	1106	593	616	2201	685
V/C Ratio(X)	0.77	0.70	0.71	0.60	0.51	0.00	0.60	0.59	0.59	0.81	0.58	0.00
Avail Cap(c_a), veh/h	561	639	543	176	520	442	299	1106	593	721	2201	685
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	26.8	25.2	25.2	30.3	28.6	0.0	29.0	18.1	18.1	25.4	13.9	0.0
Incr Delay (d2), s/veh	5.7	2.8	3.4	7.2	2.8	0.0	2.4	2.3	4.2	6.2	1.1	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	3.5	4.0	3.5	1.0	1.4	0.0	1.4	5.1	5.8	4.8	5.9	0.0
LnGrp Delay(d),s/veh	32.5	28.0	28.5	37.4	31.4	0.0	31.4	20.4	22.3	31.6	15.0	0.0
LnGrp LOS	C	C	C	D	C		C	C	C	C	B	
Approach Vol, veh/h		785			121			1145			1780	
Approach Delay, s/veh		30.2			33.7			22.4			19.7	
Approach LOS		C			C			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.0	25.5	7.3	15.6	9.2	32.4	13.4	9.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	13.5	20.0	6.4	22.1	5.6	27.9	10.5	18.0				
Max Q Clear Time (g_c+I1), s	11.0	12.3	3.7	9.4	4.7	14.3	8.7	4.5				
Green Ext Time (p_c), s	0.5	3.7	0.0	1.5	0.0	7.3	0.3	0.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			23.1									
HCM 2010 LOS			C									

# HCM Signalized Intersection Capacity Analysis

## 7: Broadway & US-101 SB Ramps






















04/01/2020

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations			   					   		   	   		
Traffic Volume (vph)	190	0	970	0	0	0	0	837	552	489	784	0	
Future Volume (vph)	190	0	970	0	0	0	0	837	552	489	784	0	
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		
Lane Util. Factor		1.00	0.76					0.86	0.86	0.97	0.95		
Frt		1.00	0.85					0.97	0.85	1.00	1.00		
Flt Protected		0.95	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (prot)		1770	3610					4647	1362	3433	3539		
Flt Permitted		0.95	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (perm)		1770	3610					4647	1362	3433	3539		
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)	207	0	1054	0	0	0	0	910	600	532	852	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	68	243	0	0	0	
Lane Group Flow (vph)	0	207	1054	0	0	0	0	1100	99	532	852	0	
Turn Type	Split	NA	custom					NA	Perm	Split	NA		
Protected Phases	7	7	2 7					2		6	6		
Permitted Phases									2				
Actuated Green, G (s)		17.3	41.8					20.0	20.0	18.5	18.5		
Effective Green, g (s)		17.3	41.8					20.0	20.0	18.5	18.5		
Actuated g/C Ratio		0.25	0.60					0.29	0.29	0.27	0.27		
Clearance Time (s)		4.5						4.5	4.5	4.5	4.5		
Vehicle Extension (s)		3.0						3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)		441	2177					1341	393	916	944		
v/s Ratio Prot		0.12	c0.29					c0.24		0.15	c0.24		
v/s Ratio Perm									0.07				
v/c Ratio		0.47	0.48					0.82	0.25	0.58	0.90		
Uniform Delay, d1		22.1	7.7					23.0	18.9	22.0	24.5		
Progression Factor		1.00	1.00					1.00	1.00	1.00	1.00		
Incremental Delay, d2		0.8	0.2					5.7	1.5	2.7	13.5		
Delay (s)		22.9	7.9					28.7	20.4	24.7	38.0		
Level of Service		C	A					C	C	C	D		
Approach Delay (s)		10.3			0.0			26.8			32.9		
Approach LOS		B			A			C			C		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			23.9									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.76										
Actuated Cycle Length (s)			69.3									Sum of lost time (s)	13.5
Intersection Capacity Utilization			58.5%									ICU Level of Service	B
Analysis Period (min)			15										

c Critical Lane Group

HCM 2010 Signalized Intersection Summary  
 8: US-101 NB Ramp & Old Bayshore Hwy






















04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	790	247	706	289	18	173	4	393	17	11	5
Future Volume (veh/h)	12	790	247	706	289	18	173	4	393	17	11	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	13	859	268	767	314	20	127	0	495	18	12	5
Adj No. of Lanes	1	2	1	2	2	0	1	0	2	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	28	968	433	850	1707	108	406	0	725	30	20	8
Arrive On Green	0.02	0.27	0.27	0.25	0.50	0.50	0.23	0.00	0.23	0.03	0.03	0.03
Sat Flow, veh/h	1774	3539	1583	3442	3380	214	1774	0	3167	912	608	253
Grp Volume(v), veh/h	13	859	268	767	164	170	127	0	495	35	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1721	1770	1825	1774	0	1583	1772	0	0
Q Serve(g_s), s	0.6	19.3	12.3	17.9	4.2	4.2	4.9	0.0	11.8	1.6	0.0	0.0
Cycle Q Clear(g_c), s	0.6	19.3	12.3	17.9	4.2	4.2	4.9	0.0	11.8	1.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.12	1.00		1.00	0.51		0.14
Lane Grp Cap(c), veh/h	28	968	433	850	893	921	406	0	725	59	0	0
V/C Ratio(X)	0.47	0.89	0.62	0.90	0.18	0.18	0.31	0.00	0.68	0.59	0.00	0.00
Avail Cap(c_a), veh/h	107	1003	449	892	893	921	406	0	725	385	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	40.5	28.9	26.3	30.3	11.2	11.2	26.5	0.0	29.2	39.5	0.0	0.0
Incr Delay (d2), s/veh	11.9	9.6	2.5	12.0	0.1	0.1	2.0	0.0	5.1	9.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	10.7	5.7	9.9	2.1	2.2	2.6	0.0	5.7	0.9	0.0	0.0
LnGrp Delay(d),s/veh	52.3	38.5	28.8	42.2	11.3	11.3	28.5	0.0	34.4	48.6	0.0	0.0
LnGrp LOS	D	D	C	D	B	B	C		C	D		
Approach Vol, veh/h		1140			1101			622			35	
Approach Delay, s/veh		36.3			32.9			33.2			48.6	
Approach LOS		D			C			C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		23.5	25.0	27.2		7.3	5.8	46.4				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		19.0	21.5	23.5		18.0	5.0	40.0				
Max Q Clear Time (g_c+I1), s		13.8	19.9	21.3		3.6	2.6	6.2				
Green Ext Time (p_c), s		1.2	0.6	1.4		0.1	0.0	2.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			34.5									
HCM 2010 LOS			C									
<b>Notes</b>												

# HCM 2010 Signalized Intersection Summary

## 9: Anza Blvd & Airport Blvd





















04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	389	36	209	264	20	15	5	36	69	114	78
Future Volume (veh/h)	59	389	36	209	264	20	15	5	36	69	114	78
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	64	423	39	227	287	22	10	13	39	75	124	85
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	87	557	51	178	737	56	439	461	392	217	366	259
Arrive On Green	0.05	0.17	0.17	0.10	0.22	0.22	0.25	0.25	0.25	0.24	0.24	0.24
Sat Flow, veh/h	1774	3278	301	1774	3334	254	1774	1863	1583	899	1517	1075
Grp Volume(v), veh/h	64	228	234	227	152	157	10	13	39	152	0	132
Grp Sat Flow(s),veh/h/ln	1774	1770	1810	1774	1770	1818	1774	1863	1583	1818	0	1673
Q Serve(g_s), s	2.7	9.1	9.2	7.5	5.4	5.5	0.3	0.4	1.4	5.2	0.0	4.9
Cycle Q Clear(g_c), s	2.7	9.1	9.2	7.5	5.4	5.5	0.3	0.4	1.4	5.2	0.0	4.9
Prop In Lane	1.00		0.17	1.00		0.14	1.00		1.00	0.49		0.64
Lane Grp Cap(c), veh/h	87	301	307	178	391	402	439	461	392	438	0	403
V/C Ratio(X)	0.73	0.76	0.76	1.27	0.39	0.39	0.02	0.03	0.10	0.35	0.00	0.33
Avail Cap(c_a), veh/h	169	426	436	178	436	448	439	461	392	438	0	403
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.0	29.5	29.6	33.6	24.8	24.8	21.3	21.3	21.7	23.5	0.0	23.4
Incr Delay (d2), s/veh	11.2	4.8	5.0	159.7	0.6	0.6	0.1	0.1	0.5	2.2	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	4.9	5.0	11.5	2.7	2.8	0.2	0.2	0.7	2.8	0.0	2.5
LnGrp Delay(d),s/veh	46.2	34.3	34.5	193.3	25.4	25.4	21.3	21.4	22.2	25.6	0.0	25.5
LnGrp LOS	D	C	C	F	C	C	C	C	C	C		C
Approach Vol, veh/h		526			536			62			284	
Approach Delay, s/veh		35.9			96.5			21.9			25.6	
Approach LOS		D			F			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		23.0	12.0	17.2		22.5	8.2	21.0				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.5	7.5	18.0		18.0	7.1	18.4				
Max Q Clear Time (g_c+I1), s		3.4	9.5	11.2		7.2	4.7	7.5				
Green Ext Time (p_c), s		0.1	0.0	1.5		1.2	0.0	1.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay	56.3											
HCM 2010 LOS	E											
<b>Notes</b>												

HCM 2010 Signalized Intersection Summary  
9: Anza Blvd & Airport Blvd













With Mitigations

04/10/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	389	36	209	264	20	15	5	36	69	114	78
Future Volume (veh/h)	59	389	36	209	264	20	15	5	36	69	114	78
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	59	389	36	209	264	20	10	12	36	69	114	78
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	0	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	84	525	48	180	715	54	445	467	397	220	370	261
Arrive On Green	0.05	0.16	0.16	0.10	0.21	0.21	0.25	0.25	0.25	0.24	0.24	0.24
Sat Flow, veh/h	1774	3277	302	1774	3337	251	1774	1863	1583	901	1518	1072
Grp Volume(v), veh/h	59	209	216	209	139	145	10	12	36	139	0	122
Grp Sat Flow(s),veh/h/ln	1774	1770	1809	1774	1770	1818	1774	1863	1583	1818	0	1674
Q Serve(g_s), s	2.4	8.3	8.4	7.5	5.0	5.0	0.3	0.4	1.3	4.6	0.0	4.4
Cycle Q Clear(g_c), s	2.4	8.3	8.4	7.5	5.0	5.0	0.3	0.4	1.3	4.6	0.0	4.4
Prop In Lane	1.00		0.17	1.00		0.14	1.00		1.00	0.50		0.64
Lane Grp Cap(c), veh/h	84	283	290	180	379	390	445	467	397	443	0	408
V/C Ratio(X)	0.70	0.74	0.74	1.16	0.37	0.37	0.02	0.03	0.09	0.31	0.00	0.30
Avail Cap(c_a), veh/h	166	431	441	180	446	458	445	467	397	443	0	408
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	0.00	1.00
Uniform Delay (d), s/veh	34.6	29.5	29.6	33.2	24.7	24.8	20.8	20.9	21.2	22.9	0.0	22.8
Incr Delay (d2), s/veh	10.0	3.7	3.8	116.6	0.6	0.6	0.1	0.1	0.5	1.8	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	4.4	4.5	9.4	2.5	2.6	0.2	0.2	0.6	2.5	0.0	2.2
LnGrp Delay(d),s/veh	44.6	33.3	33.3	149.7	25.3	25.4	20.9	21.0	21.7	24.7	0.0	24.6
LnGrp LOS	D	C	C	F	C	C	C	C	C	C		C
Approach Vol, veh/h		484			493			58			261	
Approach Delay, s/veh		34.7			78.1			21.4			24.7	
Approach LOS		C			E			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		23.0	12.0	16.3		22.5	8.0	20.3				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.5	7.5	18.0		18.0	6.9	18.6				
Max Q Clear Time (g_c+I1), s		3.3	9.5	10.4		6.6	4.4	7.0				
Green Ext Time (p_c), s		0.1	0.0	1.4		1.1	0.0	1.1				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			48.6									
HCM 2010 LOS			D									
<b>Notes</b>												

HCM 2010 Signalized Intersection Summary  
 10: US-101 NB Ramps & Airport Blvd

04/01/2020

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	 							
Traffic Volume (veh/h)	453	90	642	98	77	488		
Future Volume (veh/h)	453	90	642	98	77	488		
Number	4	14	3	8	5	12		
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		
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863		
Adj Flow Rate, veh/h	492	98	774	0	84	530		
Adj No. of Lanes	2	0	2	1	1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	649	129	941	494	522	885		
Arrive On Green	0.22	0.22	0.27	0.00	0.29	0.29		
Sat Flow, veh/h	3039	584	3548	1863	1774	1583		
Grp Volume(v), veh/h	295	295	774	0	84	530		
Grp Sat Flow(s),veh/h/ln	1770	1760	1774	1863	1774	1583		
Q Serve(g_s), s	9.5	9.6	12.6	0.0	2.1	13.6		
Cycle Q Clear(g_c), s	9.5	9.6	12.6	0.0	2.1	13.6		
Prop In Lane		0.33	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	390	388	941	494	522	885		
V/C Ratio(X)	0.76	0.76	0.82	0.00	0.16	0.60		
Avail Cap(c_a), veh/h	520	517	1188	624	522	885		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00		
Uniform Delay (d), s/veh	22.3	22.4	21.1	0.0	16.0	8.9		
Incr Delay (d2), s/veh	4.4	4.7	3.8	0.0	0.7	3.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	5.1	5.2	6.6	0.0	1.1	9.6		
LnGrp Delay(d),s/veh	26.7	27.0	25.0	0.0	16.7	11.9		
LnGrp LOS	C	C	C		B	B		
Approach Vol, veh/h	590			774	614			
Approach Delay, s/veh	26.9			25.0	12.6			
Approach LOS	C			C	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		22.5		18.0				20.7
Change Period (Y+Rc), s		4.5		4.5				4.5
Max Green Setting (Gmax), s		18.0		18.0				20.5
Max Q Clear Time (g_c+I1), s		15.6		11.6				14.6
Green Ext Time (p_c), s		0.7		1.9				1.7
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			21.7					
HCM 2010 LOS			C					
<b>Notes</b>								

# HCM Signalized Intersection Capacity Analysis

## 11: Peninsula Ave & N. Bayshore Blvd

04/01/2020



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	187	71	632	335	225	704
Future Volume (vph)	187	71	632	335	225	704
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	0.95		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3355		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3355		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	203	77	687	364	245	765
RTOR Reduction (vph)	0	61	99	0	0	0
Lane Group Flow (vph)	203	16	952	0	245	765
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8				1	6
Permitted Phases		8	2			
Actuated Green, G (s)	11.9	11.9	22.6		11.0	38.1
Effective Green, g (s)	11.9	11.9	22.6		11.0	38.1
Actuated g/C Ratio	0.20	0.20	0.38		0.19	0.65
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	357	319	1285		330	2285
v/s Ratio Prot	c0.11				c0.14	0.22
v/s Ratio Perm		0.01	c0.28			
v/c Ratio	0.57	0.05	0.74		0.74	0.33
Uniform Delay, d1	21.2	19.0	15.7		22.7	4.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.1	0.1	3.9		8.7	0.4
Delay (s)	23.3	19.1	19.5		31.4	5.1
Level of Service	C	B	B		C	A
Approach Delay (s)	22.1		19.5			11.5
Approach LOS	C		B			B

### Intersection Summary

HCM 2000 Control Delay	16.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	59.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

# HCM Signalized Intersection Capacity Analysis

## 12: Peninsula Ave/Coyote Point Dr & Airport Blvd

04/01/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	78	829	693	39	97	26
Future Volume (vph)	78	829	693	39	97	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	3433	1863	1863	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	3433	1863	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	85	901	753	42	105	28
RTOR Reduction (vph)	0	291	0	0	0	20
Lane Group Flow (vph)	85	610	753	42	105	8
Turn Type	Perm	pt+ov	Prot	NA	NA	Perm
Protected Phases		4 5	5	2	6	
Permitted Phases	4					6
Actuated Green, G (s)	13.8	36.3	18.0	42.2	19.7	19.7
Effective Green, g (s)	13.8	36.3	18.0	42.2	19.7	19.7
Actuated g/C Ratio	0.21	0.56	0.28	0.65	0.30	0.30
Clearance Time (s)	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	375	884	950	1209	564	479
v/s Ratio Prot		c0.39	c0.22	0.02	c0.06	
v/s Ratio Perm	0.05					0.01
v/c Ratio	0.23	0.69	0.79	0.03	0.19	0.02
Uniform Delay, d1	21.2	10.3	21.8	4.1	16.7	15.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	2.3	4.6	0.1	0.7	0.1
Delay (s)	21.5	12.6	26.4	4.1	17.5	15.9
Level of Service	C	B	C	A	B	B
Approach Delay (s)	13.4			25.2	17.1	
Approach LOS	B			C	B	

### Intersection Summary

HCM 2000 Control Delay	18.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

# Queues

## 3: Broadway/Airport Blvd & Old Bayshore Hwy

04/01/2020



Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	112	114	859	45	1493	505	4	100	142
v/c Ratio	0.47	0.47	0.42	0.20	0.93	0.21	0.05	0.16	0.36
Control Delay	48.3	48.3	1.0	44.1	39.5	8.4	51.2	39.2	9.7
Queue Delay	0.0	0.0	0.0	0.0	34.7	0.0	0.0	0.0	0.0
Total Delay	48.3	48.3	1.0	44.1	74.2	8.4	51.2	39.2	9.7
Queue Length 50th (ft)	74	75	0	13	499	64	3	31	0
Queue Length 95th (ft)	135	136	14	32	#700	123	15	57	55
Internal Link Dist (ft)		573		269		426		518	
Turn Bay Length (ft)	360						210		115
Base Capacity (vph)	293	296	2076	598	1599	2351	85	618	393
Starvation Cap Reductn	0	0	0	0	211	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.39	0.41	0.08	1.08	0.21	0.05	0.16	0.36

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 4: Broadway & California Dr

04/01/2020



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	445	378	48	416	521	5	976	279	309	382
v/c Ratio	0.90	0.64	0.47	0.63	0.90	0.02	0.95	0.91	0.32	0.38
Control Delay	60.2	32.7	56.8	37.8	31.9	23.4	50.8	70.8	14.0	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	51.4	8.0	1.6
Total Delay	60.2	32.7	56.8	37.8	31.9	23.4	50.8	122.2	21.9	4.2
Queue Length 50th (ft)	130	190	27	113	94	2	286	158	99	0
Queue Length 95th (ft)	#218	292	#69	162	#284	10	#422	#306	155	43
Internal Link Dist (ft)		329		578			73		137	
Turn Bay Length (ft)	225		95		350	50				
Base Capacity (vph)	497	589	102	724	603	309	1025	310	960	1001
Starvation Cap Reductn	0	0	0	0	0	0	0	85	601	436
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.64	0.47	0.57	0.86	0.02	0.95	1.24	0.86	0.68

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 5: Broadway & Carolan Dr

04/01/2020



Lane Group	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	88	351	1898	116	1067
v/c Ratio	0.25	0.75	0.74	0.65	0.32
Control Delay	20.8	20.1	15.8	47.8	5.6
Queue Delay	0.0	0.0	42.1	0.0	0.0
Total Delay	20.8	20.1	57.9	47.8	5.6
Queue Length 50th (ft)	26	49	191	40	50
Queue Length 95th (ft)	58	126	#320	#121	95
Internal Link Dist (ft)	312		137		329
Turn Bay Length (ft)		200		125	
Base Capacity (vph)	547	624	2568	178	3291
Starvation Cap Reductn	0	0	822	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.16	0.56	1.09	0.65	0.32

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 6: Broadway & Rollins Rd

04/01/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	184	62	114	118	203	467	207	1860	246	959	290
v/c Ratio	0.78	0.15	0.25	0.69	0.48	0.94	0.57	0.89	0.83	0.48	0.36
Control Delay	64.7	30.5	6.3	61.1	33.9	49.2	44.4	30.8	64.1	21.5	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.4	0.0	0.0	0.0
Total Delay	64.7	30.5	6.3	61.1	33.9	49.2	44.4	52.2	64.1	21.5	3.8
Queue Length 50th (ft)	54	29	0	66	99	166	58	353	72	149	0
Queue Length 95th (ft)	#108	64	36	#143	165	#354	93	#426	#136	188	49
Internal Link Dist (ft)		340			251			329		336	
Turn Bay Length (ft)	130		110			160	90		200		155
Base Capacity (vph)	236	423	457	180	452	520	391	2100	297	2003	799
Starvation Cap Reductn	0	0	0	0	0	0	0	309	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.15	0.25	0.66	0.45	0.90	0.53	1.04	0.83	0.48	0.36

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 7: Broadway & US-101 SB Ramps

04/01/2020



Lane Group	EBT	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	503	750	1974	486	235	741
v/c Ratio	1.05	0.29	1.03	0.73	0.33	1.02
Control Delay	94.6	6.0	60.2	23.8	38.9	83.5
Queue Delay	0.0	0.0	30.1	1.9	0.0	0.0
Total Delay	94.6	6.0	90.3	25.7	38.9	83.5
Queue Length 50th (ft)	~388	73	~577	204	73	~293
Queue Length 95th (ft)	#594	93	#681	366	110	#414
Internal Link Dist (ft)	446		336			426
Turn Bay Length (ft)		200		105		
Base Capacity (vph)	479	2576	1925	663	702	723
Starvation Cap Reductn	0	0	366	73	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.05	0.29	1.27	0.82	0.33	1.02

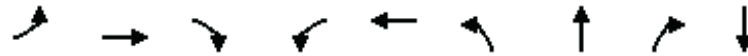
### Intersection Summary

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

# Queues

## 8: US-101 NB Ramp & Old Bayshore Hwy

04/01/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	9	310	110	1030	621	358	347	326	29
v/c Ratio	0.09	0.60	0.31	0.83	0.32	0.81	0.79	0.51	0.21
Control Delay	46.8	41.8	4.9	34.6	13.4	49.3	42.9	6.9	40.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.8	41.8	4.9	34.6	13.4	49.3	42.9	6.9	40.2
Queue Length 50th (ft)	5	92	0	292	103	214	185	0	14
Queue Length 95th (ft)	22	139	24	#456	180	#416	#385	74	43
Internal Link Dist (ft)		386			573		242		94
Turn Bay Length (ft)	205		170			130			
Base Capacity (vph)	99	713	437	1248	1914	442	438	636	362
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.43	0.25	0.83	0.32	0.81	0.79	0.51	0.08

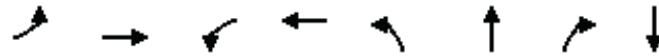
### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 9: Anza Blvd & Airport Blvd

04/01/2020



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	163	710	67	202	26	27	102	127
v/c Ratio	0.89	0.77	0.55	0.29	0.07	0.07	0.21	0.16
Control Delay	81.6	33.4	55.1	24.0	25.0	25.0	3.3	17.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.6	33.4	55.1	24.0	25.0	25.0	3.3	17.0
Queue Length 50th (ft)	82	171	33	38	10	11	0	16
Queue Length 95th (ft)	#196	234	#87	67	31	32	20	38
Internal Link Dist (ft)		477		433		347		50
Turn Bay Length (ft)	90		210					
Base Capacity (vph)	183	946	121	824	392	410	479	807
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.75	0.55	0.25	0.07	0.07	0.21	0.16

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 10: US-101 NB Ramps & Airport Blvd

04/01/2020



Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	186	614	634	342	963
v/c Ratio	0.45	0.80	0.81	0.74	0.73
Control Delay	33.2	28.9	29.5	39.5	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	33.2	28.9	29.5	39.5	6.8
Queue Length 50th (ft)	42	266	277	160	82
Queue Length 95th (ft)	73	#488	#507	#296	246
Internal Link Dist (ft)	300		611	186	
Turn Bay Length (ft)				230	230
Base Capacity (vph)	789	783	796	461	1310
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.24	0.78	0.80	0.74	0.74

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 11: Peninsula Ave & N. Bayshore Blvd

04/01/2020



Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	280	195	1267	59	791
v/c Ratio	0.65	0.37	0.73	0.36	0.38
Control Delay	26.5	5.3	17.2	31.8	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	26.5	5.3	17.2	31.8	7.1
Queue Length 50th (ft)	83	0	185	19	62
Queue Length 95th (ft)	148	39	#351	52	112
Internal Link Dist (ft)	179		604		286
Turn Bay Length (ft)				100	
Base Capacity (vph)	578	649	1730	163	2104
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.48	0.30	0.73	0.36	0.38

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

## Queues

### 12: Peninsula Ave/Coyote Point Dr & Airport Blvd

04/01/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	20	833	1239	39	14	8
v/c Ratio	0.09	0.65	0.87	0.03	0.03	0.02
Control Delay	26.8	3.1	28.2	3.5	22.2	13.4
Queue Delay	0.0	0.0	11.3	0.0	0.0	0.0
Total Delay	26.8	3.1	39.6	3.5	22.2	13.4
Queue Length 50th (ft)	8	0	231	3	4	0
Queue Length 95th (ft)	25	35	#448	15	20	11
Internal Link Dist (ft)	611			286	438	
Turn Bay Length (ft)			85			
Base Capacity (vph)	449	1292	1435	1382	488	420
Starvation Cap Reductn	0	0	194	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.64	1.00	0.03	0.03	0.02

#### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 3: Broadway/Airport Blvd & Old Bayshore Hwy

04/01/2020



Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	121	123	1130	70	920	356	4	235	210
v/c Ratio	0.35	0.35	0.61	0.22	1.12	0.19	0.03	0.26	0.38
Control Delay	29.0	29.0	2.3	28.9	102.2	11.7	36.0	25.0	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.0	29.0	2.3	28.9	102.2	11.7	36.0	25.0	6.3
Queue Length 50th (ft)	52	52	5	13	-288	45	2	50	0
Queue Length 95th (ft)	103	104	27	32	#412	92	11	82	52
Internal Link Dist (ft)		573		269		426		518	
Turn Bay Length (ft)	360						210		115
Base Capacity (vph)	411	415	1873	839	818	1857	120	891	555
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.30	0.60	0.08	1.12	0.19	0.03	0.26	0.38

### Intersection Summary

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

# Queues

## 4: Broadway & California Dr

04/01/2020



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	345	399	40	430	428	9	254	330	493	460
v/c Ratio	0.87	0.71	0.35	0.60	0.65	0.04	0.30	0.90	0.52	0.48
Control Delay	58.2	33.5	44.4	31.9	8.1	24.8	23.4	60.1	15.8	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	52.5	44.3	2.8
Total Delay	58.2	33.5	44.4	31.9	8.1	24.8	23.4	112.5	60.1	8.9
Queue Length 50th (ft)	89	181	20	100	0	4	50	162	161	40
Queue Length 95th (ft)	#164	#319	50	145	72	15	82	#311	247	106
Internal Link Dist (ft)		329		578			73		137	
Turn Bay Length (ft)	225		95		350	50				
Base Capacity (vph)	397	562	115	819	695	218	857	376	946	956
Starvation Cap Reductn	0	0	0	0	0	0	0	109	486	372
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.71	0.35	0.53	0.62	0.04	0.30	1.24	1.07	0.79

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 5: Broadway & Carolan Dr

04/01/2020



Lane Group	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	45	266	1	986	223	1290
v/c Ratio	0.17	0.57	0.01	0.52	0.64	0.38
Control Delay	19.2	8.4	12.0	13.3	28.9	4.4
Queue Delay	0.0	0.0	0.0	0.8	0.0	0.0
Total Delay	19.2	8.4	12.0	14.0	28.9	4.4
Queue Length 50th (ft)	12	0	0	73	57	42
Queue Length 95th (ft)	33	48	3	127	#148	92
Internal Link Dist (ft)	312			137		329
Turn Bay Length (ft)		200	40		125	
Base Capacity (vph)	642	744	150	1907	374	3385
Starvation Cap Reductn	0	0	0	557	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.36	0.01	0.73	0.60	0.38

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Queues

6: Broadway & Rollins Rd

04/01/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	368	225	192	47	74	202	150	995	501	1279	137
v/c Ratio	0.74	0.47	0.34	0.31	0.28	0.51	0.56	0.69	0.80	0.65	0.20
Control Delay	41.4	27.6	5.2	38.3	30.0	9.1	42.3	26.7	40.2	20.6	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.4	27.6	5.2	38.3	30.0	9.1	42.3	26.7	40.2	20.6	3.9
Queue Length 50th (ft)	81	92	0	20	30	0	33	142	109	163	0
Queue Length 95th (ft)	#157	157	41	54	65	50	#71	210	#202	243	32
Internal Link Dist (ft)		340			251			329		336	
Turn Bay Length (ft)	130		110			160	90		200		155
Base Capacity (vph)	501	572	628	157	466	549	267	1433	644	1972	701
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.39	0.31	0.30	0.16	0.37	0.56	0.69	0.78	0.65	0.20

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 7: Broadway & US-101 SB Ramps

04/01/2020



Lane Group	EBT	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	207	1054	1168	342	532	852
v/c Ratio	0.47	0.48	0.83	0.54	0.58	0.90
Control Delay	26.1	8.6	27.7	6.2	25.2	39.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.1	8.6	27.7	6.2	25.2	39.8
Queue Length 50th (ft)	75	97	167	0	102	186
Queue Length 95th (ft)	134	132	#227	65	149	#293
Internal Link Dist (ft)	446		336			426
Turn Bay Length (ft)		200		105		
Base Capacity (vph)	459	2164	1408	636	916	944
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.49	0.83	0.54	0.58	0.90

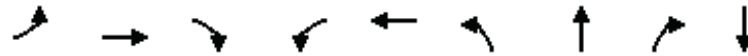
### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 8: US-101 NB Ramp & Old Bayshore Hwy

04/01/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	13	859	268	767	334	169	228	222	35
v/c Ratio	0.12	0.87	0.45	0.88	0.17	0.45	0.47	0.44	0.23
Control Delay	43.5	41.9	9.4	44.7	10.6	34.4	9.9	7.5	37.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.5	41.9	9.4	44.7	10.6	34.4	9.9	7.5	37.7
Queue Length 50th (ft)	7	246	21	217	43	87	10	0	16
Queue Length 95th (ft)	26	#376	88	#339	88	157	81	61	45
Internal Link Dist (ft)		386			573		242		94
Turn Bay Length (ft)	205		170			130			
Base Capacity (vph)	104	984	597	873	1984	378	487	510	383
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.87	0.45	0.88	0.17	0.45	0.47	0.44	0.09

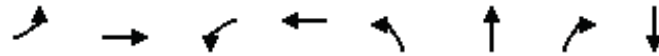
### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 9: Anza Blvd & Airport Blvd

04/01/2020



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	64	462	227	309	10	11	39	284
v/c Ratio	0.42	0.67	1.32	0.34	0.02	0.03	0.08	0.34
Control Delay	42.6	33.3	211.1	24.9	23.9	24.0	0.3	19.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.6	33.3	211.1	24.9	23.9	24.0	0.3	19.5
Queue Length 50th (ft)	30	106	~143	66	4	4	0	42
Queue Length 95th (ft)	69	154	#286	103	16	17	0	78
Internal Link Dist (ft)		477		433		347		50
Turn Bay Length (ft)	90		210					
Base Capacity (vph)	163	825	172	949	404	414	489	839
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.56	1.32	0.33	0.02	0.03	0.08	0.34

### Intersection Summary

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

# Queues

## 10: US-101 NB Ramps & Airport Blvd

04/01/2020



Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	590	398	407	84	530
v/c Ratio	0.71	0.81	0.82	0.17	0.51
Control Delay	27.6	37.8	38.1	21.2	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	27.6	37.8	38.1	21.2	8.0
Queue Length 50th (ft)	112	162	166	28	88
Queue Length 95th (ft)	164	#312	#320	61	164
Internal Link Dist (ft)	300		611	186	
Turn Bay Length (ft)				230	230
Base Capacity (vph)	960	520	527	480	1031
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.61	0.77	0.77	0.17	0.51

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

## Queues

### 11: Peninsula Ave & N. Bayshore Blvd

04/01/2020



Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	203	77	1051	245	765
v/c Ratio	0.57	0.20	0.76	0.74	0.33
Control Delay	27.7	6.8	19.0	39.8	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	27.7	6.8	19.0	39.8	5.7
Queue Length 50th (ft)	65	0	141	82	53
Queue Length 95th (ft)	120	27	#274	#197	102
Internal Link Dist (ft)	179		604		286
Turn Bay Length (ft)				100	
Base Capacity (vph)	541	537	1382	345	2284
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.38	0.14	0.76	0.71	0.33

#### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

# Queues

## 12: Peninsula Ave/Coyote Point Dr & Airport Blvd

04/01/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	85	901	753	42	105	28
v/c Ratio	0.23	0.77	0.79	0.03	0.19	0.06
Control Delay	21.8	7.6	30.2	5.6	20.4	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.8	7.6	30.2	5.6	20.4	8.5
Queue Length 50th (ft)	28	43	146	6	33	0
Queue Length 95th (ft)	61	153	#241	17	72	17
Internal Link Dist (ft)	611			286	438	
Turn Bay Length (ft)			85			
Base Capacity (vph)	523	1182	993	1208	562	497
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.76	0.76	0.03	0.19	0.06

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

**Appendix I – Cumulative Conditions Intersections Level of Service &  
Queueing Worksheets**

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↖	↑↑	↗	
Traffic Vol, veh/h	147	155	0	367	26	0
Future Vol, veh/h	147	155	0	367	26	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	-	-	160	-	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	160	168	0	399	28	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	328	0	444 164
Stage 1	-	-	-	-	244 -
Stage 2	-	-	-	-	200 -
Critical Hdwy	-	-	4.14	-	6.84 6.94
Critical Hdwy Stg 1	-	-	-	-	5.84 -
Critical Hdwy Stg 2	-	-	-	-	5.84 -
Follow-up Hdwy	-	-	2.22	-	3.52 3.32
Pot Cap-1 Maneuver	-	-	1228	-	542 852
Stage 1	-	-	-	-	774 -
Stage 2	-	-	-	-	814 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1228	-	542 852
Mov Cap-2 Maneuver	-	-	-	-	542 -
Stage 1	-	-	-	-	774 -
Stage 2	-	-	-	-	814 -

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	542	-	-	1228	-
HCM Lane V/C Ratio	0.052	-	-	-	-
HCM Control Delay (s)	12	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

HCM 2010 TWSC  
2: Project Dwy E & Airport Blvd/Broadway

04/09/2020

Intersection						
Int Delay, s/veh	1.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑	
Traffic Vol, veh/h	147	0	103	367	0	17
Future Vol, veh/h	147	0	103	367	0	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	160	0	112	399	0	18






















Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	160	0	584
Stage 1	-	-	-	-	160
Stage 2	-	-	-	-	424
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	1417	-	443
Stage 1	-	-	-	-	852
Stage 2	-	-	-	-	628
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1417	-	398
Mov Cap-2 Maneuver	-	-	-	-	398
Stage 1	-	-	-	-	852
Stage 2	-	-	-	-	564

Approach	EB	WB	NB
HCM Control Delay, s	0	1.9	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	964	-	-	1417	-
HCM Lane V/C Ratio	0.019	-	-	0.079	-
HCM Control Delay (s)	8.8	-	-	7.8	0.3
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.3	-























HCM 2010 Signalized Intersection Summary  
 3: Broadway/Airport Blvd & Old Bayshore Hwy

04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	19	565	38	21	2	1199	541	33	3	146	84
Future Volume (veh/h)	81	19	565	38	21	2	1199	541	33	3	146	84
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	54	68	614	41	23	2	1303	588	36	3	159	91
Adj No. of Lanes	1	1	2	0	2	0	2	2	0	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	265	278	1748	79	76	7	1385	2043	125	7	724	324
Arrive On Green	0.15	0.15	0.15	0.04	0.04	0.04	0.40	0.60	0.60	0.00	0.20	0.20
Sat Flow, veh/h	1774	1863	3167	1774	1690	147	3442	3389	207	1774	3539	1583
Grp Volume(v), veh/h	54	68	614	41	0	25	1303	307	317	3	159	91
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1837	1721	1770	1826	1774	1770	1583
Q Serve(g_s), s	2.4	2.9	9.8	2.0	0.0	1.2	32.9	7.5	7.6	0.2	3.4	4.4
Cycle Q Clear(g_c), s	2.4	2.9	9.8	2.0	0.0	1.2	32.9	7.5	7.6	0.2	3.4	4.4
Prop In Lane	1.00		1.00	1.00		0.08	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	265	278	1748	79	0	82	1385	1067	1101	7	724	324
V/C Ratio(X)	0.20	0.24	0.35	0.52	0.00	0.30	0.94	0.29	0.29	0.42	0.22	0.28
Avail Cap(c_a), veh/h	353	371	1904	353	0	365	1426	1067	1101	98	724	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	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.8	34.0	11.3	42.3	0.0	41.9	26.0	8.6	8.6	45.0	30.0	30.4
Incr Delay (d2), s/veh	0.4	0.5	0.1	5.1	0.0	2.1	12.2	0.7	0.7	35.1	0.7	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	1.5	4.3	1.1	0.0	0.7	17.9	3.9	4.0	0.1	1.7	2.1
LnGrp Delay(d),s/veh	34.1	34.4	11.4	47.4	0.0	43.9	38.2	9.3	9.3	80.0	30.7	32.5
LnGrp LOS	C	C	B	D		D	D	A	A	F	C	C
Approach Vol, veh/h		736			66			1927			253	
Approach Delay, s/veh		15.2			46.1			28.9			31.9	
Approach LOS		B			D			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.9	59.1		18.0	40.9	23.0		8.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	51.0		18.0	37.5	18.5		18.0				
Max Q Clear Time (g_c+I1), s	2.2	9.6		11.8	34.9	6.4		4.0				
Green Ext Time (p_c), s	0.0	4.1		1.8	1.5	0.9		0.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			26.1									
HCM 2010 LOS			C									
<b>Notes</b>												



















HCM 2010 Signalized Intersection Summary  
 4: Broadway & California Dr

04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	587	251	14	38	284	122	6	506	23	119	342	357
Future Volume (veh/h)	587	251	14	38	284	122	6	506	23	119	342	357
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	638	273	15	41	309	0	7	550	25	129	372	0
Adj No. of Lanes	2	1	0	1	2	1	1	2	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	756	545	30	70	465	208	401	1016	46	163	842	716
Arrive On Green	0.22	0.31	0.31	0.04	0.13	0.00	0.29	0.29	0.29	0.09	0.45	0.00
Sat Flow, veh/h	3442	1750	96	1774	3539	1583	1006	3448	157	1774	1863	1583
Grp Volume(v), veh/h	638	0	288	41	309	0	7	282	293	129	372	0
Grp Sat Flow(s),veh/h/ln	1721	0	1846	1774	1770	1583	1006	1770	1835	1774	1863	1583
Q Serve(g_s), s	12.2	0.0	8.7	1.6	5.7	0.0	0.3	9.2	9.2	4.9	9.4	0.0
Cycle Q Clear(g_c), s	12.2	0.0	8.7	1.6	5.7	0.0	0.3	9.2	9.2	4.9	9.4	0.0
Prop In Lane	1.00		0.05	1.00		1.00	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	756	0	575	70	465	208	401	521	541	163	842	716
V/C Ratio(X)	0.84	0.00	0.50	0.58	0.66	0.00	0.02	0.54	0.54	0.79	0.44	0.00
Avail Cap(c_a), veh/h	879	0	792	158	929	416	401	521	541	194	842	716
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.6	0.0	19.3	32.4	28.3	0.0	17.2	20.3	20.3	30.5	12.9	0.0
Incr Delay (d2), s/veh	6.7	0.0	0.7	7.5	1.6	0.0	0.1	4.0	3.9	16.7	1.7	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	6.5	0.0	4.5	0.9	2.9	0.0	0.1	5.0	5.2	3.2	5.1	0.0
LnGrp Delay(d),s/veh	32.4	0.0	19.9	39.9	30.0	0.0	17.3	24.3	24.2	47.2	14.5	0.0
LnGrp LOS	C		B	D	C		B	C	C	D	B	
Approach Vol, veh/h		926			350			582			501	
Approach Delay, s/veh		28.5			31.1			24.1			22.9	
Approach LOS		C			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s	10.8	24.7	7.2	25.8		35.5	19.6	13.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s	7.5	19.0	6.1	29.4		31.0	17.5	18.0				
Max Q Clear Time (g_c+I1), s	6.9	11.2	3.6	10.7		11.4	14.2	7.7				
Green Ext Time (p_c), s	0.0	2.1	0.0	1.5		2.1	0.9	1.3				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			26.6									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary  
5: Broadway & Carolan Dr

























04/09/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	121	0	638	0	1069	181	381	839	0
Future Volume (veh/h)	0	0	0	121	0	638	0	1069	181	381	839	0
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln				1900	1863	1863	1863	1863	1900	1863	1863	0
Adj Flow Rate, veh/h				121	0	638	0	1069	181	381	839	0
Adj No. of Lanes				0	1	1	1	3	0	1	3	0
Peak Hour Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %				2	2	2	2	2	2	2	2	0
Cap, veh/h				459	0	409	103	1358	230	423	3117	0
Arrive On Green				0.26	0.00	0.26	0.00	0.31	0.31	0.24	0.61	0.00
Sat Flow, veh/h				1774	0	1583	653	4381	741	1774	5253	0
Grp Volume(v), veh/h				121	0	638	0	827	423	381	839	0
Grp Sat Flow(s),veh/h/ln				1774	0	1583	653	1695	1732	1774	1695	0
Q Serve(g_s), s				3.8	0.0	18.1	0.0	15.6	15.6	14.6	5.4	0.0
Cycle Q Clear(g_c), s				3.8	0.0	18.1	0.0	15.6	15.6	14.6	5.4	0.0
Prop In Lane				1.00		1.00	1.00		0.43	1.00		0.00
Lane Grp Cap(c), veh/h				459	0	409	103	1051	537	423	3117	0
V/C Ratio(X)				0.26	0.00	1.56	0.00	0.79	0.79	0.90	0.27	0.00
Avail Cap(c_a), veh/h				459	0	409	103	1051	537	444	3117	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)				1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				20.6	0.0	25.9	0.0	22.0	22.1	25.8	6.3	0.0
Incr Delay (d2), s/veh				0.3	0.0	263.0	0.0	6.0	11.2	20.5	0.2	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.9	0.0	37.7	0.0	8.1	9.1	9.5	2.5	0.0
LnGrp Delay(d),s/veh				21.0	0.0	288.9	0.0	28.0	33.2	46.3	6.5	0.0
LnGrp LOS				C		F		C	C	D	A	
Approach Vol, veh/h					759			1250			1220	
Approach Delay, s/veh					246.2			29.8			18.9	
Approach LOS					F			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	21.2	26.2				47.4		22.6				
Change Period (Y+Rc), s	4.5	4.5				4.5		4.5				
Max Green Setting (Gmax), s	17.5	20.9				42.9		18.1				
Max Q Clear Time (g_c+I1), s	16.6	17.6				7.4		20.1				
Green Ext Time (p_c), s	0.1	2.2				6.6		0.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay					76.6							
HCM 2010 LOS					E							

# HCM 2010 Signalized Intersection Summary

## 6: Broadway & Rollins Rd

























04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	102	80	102	82	151	306	254	1327	45	198	781	256
Future Volume (veh/h)	102	80	102	82	151	306	254	1327	45	198	781	256
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	111	87	111	89	164	0	276	1442	49	215	849	0
Adj No. of Lanes	2	1	1	1	1	1	2	3	0	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	248	251	213	117	239	204	390	2001	68	317	1906	594
Arrive On Green	0.07	0.13	0.13	0.07	0.13	0.00	0.11	0.40	0.40	0.09	0.37	0.00
Sat Flow, veh/h	3442	1863	1583	1774	1863	1583	3442	5051	172	3442	5085	1583
Grp Volume(v), veh/h	111	87	111	89	164	0	276	968	523	215	849	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	1863	1583	1721	1695	1832	1721	1695	1583
Q Serve(g_s), s	1.8	2.5	3.8	2.9	4.9	0.0	4.5	13.9	14.0	3.5	7.2	0.0
Cycle Q Clear(g_c), s	1.8	2.5	3.8	2.9	4.9	0.0	4.5	13.9	14.0	3.5	7.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	248	251	213	117	239	204	390	1343	726	317	1906	594
V/C Ratio(X)	0.45	0.35	0.52	0.76	0.68	0.00	0.71	0.72	0.72	0.68	0.45	0.00
Avail Cap(c_a), veh/h	304	583	496	169	596	507	482	1343	726	327	1906	594
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	25.7	22.7	23.3	26.6	24.1	0.0	24.7	14.8	14.8	25.4	13.6	0.0
Incr Delay (d2), s/veh	1.3	0.8	2.0	11.6	3.4	0.0	3.6	3.4	6.1	5.3	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	1.3	1.8	1.8	2.7	0.0	2.3	7.1	8.2	1.9	3.5	0.0
LnGrp Delay(d),s/veh	27.0	23.5	25.2	38.1	27.5	0.0	28.3	18.1	20.9	30.8	14.3	0.0
LnGrp LOS	C	C	C	D	C		C	B	C	C	B	
Approach Vol, veh/h		309			253			1767			1064	
Approach Delay, s/veh		25.4			31.3			20.5			17.6	
Approach LOS		C			C			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.8	27.4	8.3	12.3	11.1	26.2	8.7	11.9				
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	5.5	22.9	5.5	18.1	8.1	20.3	5.1	18.5				
Max Q Clear Time (g_c+1), s	5.5	16.0	4.9	5.8	6.5	9.2	3.8	6.9				
Green Ext Time (p_c), s	0.0	4.8	0.0	0.6	0.2	4.3	0.0	0.6				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			20.9									
HCM 2010 LOS			C									

# HCM Signalized Intersection Capacity Analysis

## 7: Broadway & US-101 SB Ramps






















04/01/2020

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations			  					  		 	 		
Traffic Volume (vph)	472	13	663	0	0	0	0	1291	437	145	545	0	
Future Volume (vph)	472	13	663	0	0	0	0	1291	437	145	545	0	
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		
Lane Util. Factor		1.00	0.76					0.86	0.86	0.97	0.95		
Frt		1.00	0.85					0.99	0.85	1.00	1.00		
Flt Protected		0.95	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (prot)		1776	3610					4778	1362	3433	3539		
Flt Permitted		0.95	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (perm)		1776	3610					4778	1362	3433	3539		
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)	513	14	721	0	0	0	0	1403	475	158	592	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	5	171	0	0	0	
Lane Group Flow (vph)	0	527	721	0	0	0	0	1455	247	158	592	0	
Turn Type	Split	NA	custom					NA	Perm	Split	NA		
Protected Phases	7	7	2 7					2		6	6		
Permitted Phases									2				
Actuated Green, G (s)		28.5	62.9					29.9	29.9	18.1	18.1		
Effective Green, g (s)		28.5	62.9					29.9	29.9	18.1	18.1		
Actuated g/C Ratio		0.32	0.70					0.33	0.33	0.20	0.20		
Clearance Time (s)		4.5						4.5	4.5	4.5	4.5		
Vehicle Extension (s)		3.0						3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)		562	2522					1587	452	690	711		
v/s Ratio Prot		c0.30	0.20					c0.30		0.05	c0.17		
v/s Ratio Perm									0.18				
v/c Ratio		0.94	0.29					0.92	0.55	0.23	0.83		
Uniform Delay, d1		29.9	5.1					28.9	24.5	30.1	34.5		
Progression Factor		1.00	1.00					1.00	1.00	1.00	1.00		
Incremental Delay, d2		23.4	0.1					9.9	4.7	0.8	11.0		
Delay (s)		53.2	5.2					38.8	29.2	30.9	45.5		
Level of Service		D	A					D	C	C	D		
Approach Delay (s)		25.5			0.0			36.6			42.4		
Approach LOS		C			A			D			D		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			34.2									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.90										
Actuated Cycle Length (s)			90.0									Sum of lost time (s)	13.5
Intersection Capacity Utilization			70.4%									ICU Level of Service	C
Analysis Period (min)			15										

c Critical Lane Group





















HCM 2010 Signalized Intersection Summary  
 8: US-101 NB Ramp & Old Bayshore Hwy

04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	227	90	829	453	7	441	7	418	12	10	5
Future Volume (veh/h)	8	227	90	829	453	7	441	7	418	12	10	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	9	247	98	901	492	8	623	0	305	13	11	5
Adj No. of Lanes	1	2	1	2	2	0	2	0	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	20	406	182	1053	1459	24	1026	0	458	24	21	9
Arrive On Green	0.01	0.11	0.11	0.31	0.41	0.41	0.29	0.00	0.29	0.03	0.03	0.03
Sat Flow, veh/h	1774	3539	1583	3442	3564	58	3548	0	1583	793	671	305
Grp Volume(v), veh/h	9	247	98	901	244	256	623	0	305	29	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1721	1770	1853	1774	0	1583	1769	0	0
Q Serve(g_s), s	0.4	4.6	4.1	17.1	6.6	6.6	10.5	0.0	11.8	1.1	0.0	0.0
Cycle Q Clear(g_c), s	0.4	4.6	4.1	17.1	6.6	6.6	10.5	0.0	11.8	1.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	0.45		0.17
Lane Grp Cap(c), veh/h	20	406	182	1053	724	758	1026	0	458	55	0	0
V/C Ratio(X)	0.44	0.61	0.54	0.86	0.34	0.34	0.61	0.00	0.67	0.53	0.00	0.00
Avail Cap(c_a), veh/h	128	917	410	1283	991	1037	1026	0	458	458	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	34.1	29.3	29.0	22.7	14.1	14.1	21.3	0.0	21.7	33.2	0.0	0.0
Incr Delay (d2), s/veh	14.3	1.5	2.5	5.0	0.3	0.3	2.7	0.0	7.5	7.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.3	1.9	8.9	3.2	3.4	5.5	0.0	6.1	0.7	0.0	0.0
LnGrp Delay(d),s/veh	48.4	30.7	31.5	27.7	14.3	14.3	24.0	0.0	29.2	41.0	0.0	0.0
LnGrp LOS	D	C	C	C	B	B	C		C	D		
Approach Vol, veh/h		354			1401			928				29
Approach Delay, s/veh		31.4			22.9			25.7				41.0
Approach LOS		C			C			C				D
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		24.6	25.8	12.5		6.6	5.3	32.9				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		20.1	25.9	18.0		18.0	5.0	38.9				
Max Q Clear Time (g_c+I1), s		13.8	19.1	6.6		3.1	2.4	8.6				
Green Ext Time (p_c), s		2.1	2.2	1.4		0.1	0.0	3.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			25.2									
HCM 2010 LOS			C									
<b>Notes</b>												













HCM 2010 Signalized Intersection Summary  
 9: Anza Blvd & Airport Blvd

04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	139	148	28	152	366	55	66	169	131	23	71	121
Future Volume (veh/h)	139	148	28	152	366	55	66	169	131	23	71	121
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	151	161	30	165	398	60	72	184	142	25	77	132
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	183	505	92	186	526	79	433	454	386	109	335	382
Arrive On Green	0.10	0.17	0.17	0.10	0.17	0.17	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1774	2990	546	1774	3088	462	1774	1863	1583	451	1389	1583
Grp Volume(v), veh/h	151	94	97	165	227	231	72	184	142	102	0	132
Grp Sat Flow(s),veh/h/ln	1774	1770	1766	1774	1770	1781	1774	1863	1583	1840	0	1583
Q Serve(g_s), s	6.2	3.5	3.6	6.8	9.1	9.2	2.4	6.2	5.6	3.3	0.0	5.1
Cycle Q Clear(g_c), s	6.2	3.5	3.6	6.8	9.1	9.2	2.4	6.2	5.6	3.3	0.0	5.1
Prop In Lane	1.00		0.31	1.00		0.26	1.00		1.00	0.25		1.00
Lane Grp Cap(c), veh/h	183	299	298	186	301	303	433	454	386	444	0	382
V/C Ratio(X)	0.82	0.31	0.33	0.89	0.75	0.76	0.17	0.40	0.37	0.23	0.00	0.35
Avail Cap(c_a), veh/h	183	427	426	186	429	432	433	454	386	444	0	382
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	0.00	1.00
Uniform Delay (d), s/veh	32.8	27.2	27.3	33.0	29.5	29.5	22.2	23.7	23.4	22.7	0.0	23.4
Incr Delay (d2), s/veh	25.4	0.6	0.6	37.0	4.6	4.9	0.8	2.7	2.7	1.2	0.0	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	1.7	1.8	5.3	4.8	5.0	1.3	3.5	2.7	1.8	0.0	2.5
LnGrp Delay(d),s/veh	58.1	27.8	27.9	70.0	34.0	34.4	23.0	26.3	26.1	23.9	0.0	25.9
LnGrp LOS	E	C	C	E	C	C	C	C	C	C		C
Approach Vol, veh/h		342			623			398			234	
Approach Delay, s/veh		41.2			43.7			25.7			25.0	
Approach LOS		D			D			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		22.7	12.3	17.1		22.5	12.2	17.2				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.2	7.8	18.0		18.0	7.7	18.1				
Max Q Clear Time (g_c+I1), s		8.2	8.8	5.6		7.1	8.2	11.2				
Green Ext Time (p_c), s		1.2	0.0	0.7		1.0	0.0	1.5				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			35.9									
HCM 2010 LOS			D									
<b>Notes</b>												

HCM 2010 Signalized Intersection Summary  
 10: US-101 NB Ramps & Airport Blvd

04/01/2020

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	 							
Traffic Volume (veh/h)	133	15	1209	167	303	632		
Future Volume (veh/h)	133	15	1209	167	303	632		
Number	4	14	3	8	5	12		
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		
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863		
Adj Flow Rate, veh/h	145	16	1444	0	329	687		
Adj No. of Lanes	2	0	2	1	1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	246	27	1615	848	506	1172		
Arrive On Green	0.08	0.08	0.46	0.00	0.29	0.29		
Sat Flow, veh/h	3313	351	3548	1863	1774	1583		
Grp Volume(v), veh/h	79	82	1444	0	329	687		
Grp Sat Flow(s),veh/h/ln	1770	1801	1774	1863	1774	1583		
Q Serve(g_s), s	3.2	3.3	27.5	0.0	12.0	14.7		
Cycle Q Clear(g_c), s	3.2	3.3	27.5	0.0	12.0	14.7		
Prop In Lane		0.19	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	135	137	1615	848	506	1172		
V/C Ratio(X)	0.58	0.60	0.89	0.00	0.65	0.59		
Avail Cap(c_a), veh/h	433	440	1807	949	506	1172		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00		
Uniform Delay (d), s/veh	32.9	32.9	18.4	0.0	23.1	4.4		
Incr Delay (d2), s/veh	4.0	4.1	5.7	0.0	6.4	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	1.7	1.8	14.7	0.0	6.7	14.4		
LnGrp Delay(d),s/veh	36.8	37.0	24.2	0.0	29.5	6.5		
LnGrp LOS	D	D	C		C	A		
Approach Vol, veh/h	161			1444	1016			
Approach Delay, s/veh	36.9			24.2	14.0			
Approach LOS	D			C	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		25.5		10.1				38.0
Change Period (Y+Rc), s		4.5		4.5				4.5
Max Green Setting (Gmax), s		21.0		18.0				37.5
Max Q Clear Time (g_c+I1), s		16.7		5.3				29.5
Green Ext Time (p_c), s		1.8		0.6				4.0
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			21.0					
HCM 2010 LOS			C					
<b>Notes</b>								

# HCM Signalized Intersection Capacity Analysis

## 11: Peninsula Ave & N. Bayshore Blvd

04/01/2020



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	244	328	1025	297	45	726
Future Volume (vph)	244	328	1025	297	45	726
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3420		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3420		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	265	357	1114	323	49	789
RTOR Reduction (vph)	0	153	35	0	0	0
Lane Group Flow (vph)	265	204	1402	0	49	789
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8				1	6
Permitted Phases		8	2			
Actuated Green, G (s)	13.9	13.9	32.5		2.9	39.9
Effective Green, g (s)	13.9	13.9	32.5		2.9	39.9
Actuated g/C Ratio	0.22	0.22	0.52		0.05	0.64
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	391	350	1769		81	2248
v/s Ratio Prot	c0.15				c0.03	0.22
v/s Ratio Perm		0.13	c0.41			
v/c Ratio	0.68	0.58	0.79		0.60	0.35
Uniform Delay, d1	22.4	21.9	12.4		29.4	5.4
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	4.6	2.5	3.7		12.1	0.4
Delay (s)	27.0	24.3	16.1		41.5	5.8
Level of Service	C	C	B		D	A
Approach Delay (s)	25.5		16.1			7.9
Approach LOS	C		B			A

### Intersection Summary

HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	62.8	Sum of lost time (s)	13.5
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

# HCM Signalized Intersection Capacity Analysis

## 12: Peninsula Ave/Coyote Point Dr & Airport Blvd

04/01/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	20	903	1323	44	16	9
Future Volume (vph)	20	903	1323	44	16	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	3433	1863	1863	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	3433	1863	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	982	1438	48	17	10
RTOR Reduction (vph)	0	341	0	0	0	8
Lane Group Flow (vph)	22	641	1438	48	17	2
Turn Type	Perm	pt+ov	Prot	NA	NA	Perm
Protected Phases		4 5	5	2	6	
Permitted Phases	4					6
Actuated Green, G (s)	10.0	53.3	38.8	62.7	19.4	19.4
Effective Green, g (s)	10.0	53.3	38.8	62.7	19.4	19.4
Actuated g/C Ratio	0.12	0.65	0.47	0.77	0.24	0.24
Clearance Time (s)	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	216	1032	1630	1429	442	375
v/s Ratio Prot		c0.40	c0.42	0.03	c0.01	
v/s Ratio Perm	0.01					0.00
v/c Ratio	0.10	0.62	0.88	0.03	0.04	0.01
Uniform Delay, d1	31.9	8.3	19.4	2.3	24.0	23.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	1.2	6.0	0.0	0.2	0.0
Delay (s)	32.1	9.5	25.4	2.3	24.1	23.8
Level of Service	C	A	C	A	C	C
Approach Delay (s)	10.0			24.6	24.0	
Approach LOS	A			C	C	

### Intersection Summary

HCM 2000 Control Delay	18.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	81.7	Sum of lost time (s)	13.5
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection						
Int Delay, s/veh	3.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↖	↑↑	↗	
Traffic Vol, veh/h	300	30	0	303	151	0
Future Vol, veh/h	300	30	0	303	151	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	-	-	160	-	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	326	33	0	329	164	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	359	0	508
Stage 1	-	-	-	-	343
Stage 2	-	-	-	-	165
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	1196	-	494
Stage 1	-	-	-	-	690
Stage 2	-	-	-	-	847
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1196	-	494
Mov Cap-2 Maneuver	-	-	-	-	494
Stage 1	-	-	-	-	690
Stage 2	-	-	-	-	847

Approach	EB	WB	NB
HCM Control Delay, s	0	0	15.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	494	-	-	1196	-
HCM Lane V/C Ratio	0.332	-	-	-	-
HCM Control Delay (s)	15.9	-	-	0	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	1.4	-	-	0	-

HCM 2010 TWSC  
 2: Project Dwy E & Airport Blvd/Broadway

04/09/2020

Intersection						
Int Delay, s/veh	1.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑	
Traffic Vol, veh/h	300	0	18	303	0	100
Future Vol, veh/h	300	0	18	303	0	100
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	326	0	20	329	0	109






















Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	326	0	531
Stage 1	-	-	-	-	326
Stage 2	-	-	-	-	205
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	1230	-	478
Stage 1	-	-	-	-	704
Stage 2	-	-	-	-	809
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1230	-	468
Mov Cap-2 Maneuver	-	-	-	-	468
Stage 1	-	-	-	-	704
Stage 2	-	-	-	-	793

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	9.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	853	-	-	1230	-
HCM Lane V/C Ratio	0.127	-	-	0.016	-
HCM Control Delay (s)	9.8	-	-	8	0.1
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0	-

HCM 2010 Signalized Intersection Summary  
 3: Broadway/Airport Blvd & Old Bayshore Hwy























04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	179	18	1121	44	37	10	1011	323	46	8	256	116
Future Volume (veh/h)	179	18	1121	44	37	10	1011	323	46	8	256	116
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	209	0	1218	48	40	11	1099	351	50	9	278	126
Adj No. of Lanes	2	0	2	0	2	0	2	2	0	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	738	0	1628	86	79	22	1054	1621	229	20	798	357
Arrive On Green	0.21	0.00	0.21	0.05	0.05	0.05	0.31	0.52	0.52	0.01	0.23	0.23
Sat Flow, veh/h	3548	0	3167	1649	1503	417	3442	3115	440	1774	3539	1583
Grp Volume(v), veh/h	209	0	1218	52	0	47	1099	198	203	9	278	126
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1780	0	1789	1721	1770	1785	1774	1770	1583
Q Serve(g_s), s	4.3	0.0	18.0	2.5	0.0	2.2	26.5	5.2	5.3	0.4	5.7	5.8
Cycle Q Clear(g_c), s	4.3	0.0	18.0	2.5	0.0	2.2	26.5	5.2	5.3	0.4	5.7	5.8
Prop In Lane	1.00		1.00	0.93		0.23	1.00		0.25	1.00		1.00
Lane Grp Cap(c), veh/h	738	0	1628	93	0	94	1054	921	929	20	798	357
V/C Ratio(X)	0.28	0.00	0.75	0.56	0.00	0.50	1.04	0.22	0.22	0.45	0.35	0.35
Avail Cap(c_a), veh/h	738	0	1628	370	0	372	1054	921	929	103	798	357
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.8	0.0	16.6	40.0	0.0	39.9	30.0	11.2	11.2	42.5	28.2	28.2
Incr Delay (d2), s/veh	0.2	0.0	2.0	5.1	0.0	4.1	39.5	0.5	0.5	15.1	1.2	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	2.1	0.0	11.8	1.3	0.0	1.2	18.2	2.7	2.7	0.3	2.9	2.8
LnGrp Delay(d),s/veh	29.0	0.0	18.5	45.1	0.0	44.0	69.5	11.7	11.8	57.6	29.4	30.9
LnGrp LOS	C		B	D		D	F	B	B	E	C	C
Approach Vol, veh/h		1427			99			1500			413	
Approach Delay, s/veh		20.1			44.6			54.1			30.5	
Approach LOS		C			D			D			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.5	49.5		22.5	31.0	24.0		9.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	41.0		18.0	26.5	19.5		18.0				
Max Q Clear Time (g_c+I1), s	2.4	7.3		20.0	28.5	7.8		4.5				
Green Ext Time (p_c), s	0.0	2.4		0.0	0.0	1.6		0.4				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			36.9									
HCM 2010 LOS			D									
<b>Notes</b>												

# HCM 2010 Signalized Intersection Summary




















## 4: Broadway & California Dr

04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	495	236	37	47	264	190	20	255	54	89	563	624
Future Volume (veh/h)	495	236	37	47	264	190	20	255	54	89	563	624
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	538	257	40	51	287	0	22	277	59	97	612	0
Adj No. of Lanes	2	1	0	1	2	1	1	2	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	650	425	66	83	453	203	284	963	202	124	878	746
Arrive On Green	0.19	0.27	0.27	0.05	0.13	0.00	0.33	0.33	0.33	0.07	0.47	0.00
Sat Flow, veh/h	3442	1574	245	1774	3539	1583	806	2913	611	1774	1863	1583
Grp Volume(v), veh/h	538	0	297	51	287	0	22	167	169	97	612	0
Grp Sat Flow(s),veh/h/ln	1721	0	1820	1774	1770	1583	806	1770	1755	1774	1863	1583
Q Serve(g_s), s	9.6	0.0	9.1	1.8	4.9	0.0	1.4	4.4	4.6	3.4	16.5	0.0
Cycle Q Clear(g_c), s	9.6	0.0	9.1	1.8	4.9	0.0	8.9	4.4	4.6	3.4	16.5	0.0
Prop In Lane	1.00		0.13	1.00		1.00	1.00		0.35	1.00		1.00
Lane Grp Cap(c), veh/h	650	0	491	83	453	203	284	585	580	124	878	746
V/C Ratio(X)	0.83	0.00	0.60	0.62	0.63	0.00	0.08	0.28	0.29	0.78	0.70	0.00
Avail Cap(c_a), veh/h	730	0	717	178	1001	448	284	585	580	153	878	746
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	24.8	0.0	20.3	29.8	26.3	0.0	20.3	15.7	15.8	29.1	13.3	0.0
Incr Delay (d2), s/veh	7.2	0.0	1.2	7.2	1.5	0.0	0.5	1.2	1.3	18.6	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	5.2	0.0	4.7	1.0	2.5	0.0	0.4	2.4	2.4	2.3	9.4	0.0
LnGrp Delay(d),s/veh	32.0	0.0	21.5	37.0	27.8	0.0	20.8	17.0	17.1	47.7	17.8	0.0
LnGrp LOS	C		C	D	C		C	B	B	D	B	
Approach Vol, veh/h		835			338			358			709	
Approach Delay, s/veh		28.3			29.2			17.3			21.9	
Approach LOS		C			C			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s	9.0	25.5	7.5	21.7		34.5	16.5	12.6				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.5	20.0	6.4	25.1		30.0	13.5	18.0				
Max Q Clear Time (g_c+I1), s	5.4	10.9	3.8	11.1		18.5	11.6	6.9				
Green Ext Time (p_c), s	0.0	1.3	0.0	1.4		3.1	0.5	1.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			24.6									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary  
 5: Broadway & Carolan Dr

























04/09/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	89	0	490	0	730	226	609	1179	0
Future Volume (veh/h)	0	0	0	89	0	490	0	730	226	609	1179	0
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln				1900	1863	1863	1863	1863	1900	1863	1863	0
Adj Flow Rate, veh/h				89	0	490	0	730	226	609	1179	0
Adj No. of Lanes				0	1	1	1	3	0	1	3	0
Peak Hour Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %				2	2	2	2	2	2	2	2	0
Cap, veh/h				399	0	356	90	937	287	645	3369	0
Arrive On Green				0.22	0.00	0.22	0.00	0.24	0.24	0.36	0.66	0.00
Sat Flow, veh/h				1774	0	1583	474	3863	1182	1774	5253	0
Grp Volume(v), veh/h				89	0	490	0	640	316	609	1179	0
Grp Sat Flow(s),veh/h/ln				1774	0	1583	474	1695	1654	1774	1695	0
Q Serve(g_s), s				3.3	0.0	18.0	0.0	14.1	14.3	26.6	8.1	0.0
Cycle Q Clear(g_c), s				3.3	0.0	18.0	0.0	14.1	14.3	26.6	8.1	0.0
Prop In Lane				1.00		1.00	1.00		0.71	1.00		0.00
Lane Grp Cap(c), veh/h				399	0	356	90	822	401	645	3369	0
V/C Ratio(X)				0.22	0.00	1.38	0.00	0.78	0.79	0.94	0.35	0.00
Avail Cap(c_a), veh/h				399	0	356	90	822	401	676	3369	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				25.3	0.0	31.0	0.0	28.3	28.4	24.7	5.9	0.0
Incr Delay (d2), s/veh				0.3	0.0	185.8	0.0	7.2	14.5	21.4	0.3	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.6	0.0	26.2	0.0	7.4	8.1	16.9	3.8	0.0
LnGrp Delay(d),s/veh				25.6	0.0	216.8	0.0	35.4	42.9	46.1	6.2	0.0
LnGrp LOS				C		F		D	D	D	A	
Approach Vol, veh/h					579			956			1788	
Approach Delay, s/veh					187.4			37.9			19.8	
Approach LOS					F			D			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	33.6	23.9				57.5		22.5				
Change Period (Y+Rc), s	4.5	4.5				4.5		4.5				
Max Green Setting (Gmax), s	30.5	18.0				53.0		18.0				
Max Q Clear Time (g_c+I1), s	28.6	16.3				10.1		20.0				
Green Ext Time (p_c), s	0.5	1.0				10.7		0.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				54.2								
HCM 2010 LOS				D								

# HCM 2010 Signalized Intersection Summary

## 6: Broadway & Rollins Rd













04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	258	289	211	31	63	243	92	1008	55	501	1483	109
Future Volume (veh/h)	258	289	211	31	63	243	92	1008	55	501	1483	109
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	280	314	229	34	68	0	100	1096	60	545	1612	0
Adj No. of Lanes	2	1	1	1	1	1	2	3	0	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	368	392	333	61	257	218	208	1557	85	642	2246	699
Arrive On Green	0.11	0.21	0.21	0.03	0.14	0.00	0.06	0.32	0.32	0.19	0.44	0.00
Sat Flow, veh/h	3442	1863	1583	1774	1863	1583	3442	4935	270	3442	5085	1583
Grp Volume(v), veh/h	280	314	229	34	68	0	100	753	403	545	1612	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	1863	1583	1721	1695	1815	1721	1695	1583
Q Serve(g_s), s	5.6	11.4	9.5	1.3	2.3	0.0	2.0	13.9	13.9	10.9	18.4	0.0
Cycle Q Clear(g_c), s	5.6	11.4	9.5	1.3	2.3	0.0	2.0	13.9	13.9	10.9	18.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.15	1.00		1.00
Lane Grp Cap(c), veh/h	368	392	333	61	257	218	208	1070	573	642	2246	699
V/C Ratio(X)	0.76	0.80	0.69	0.56	0.26	0.00	0.48	0.70	0.70	0.85	0.72	0.00
Avail Cap(c_a), veh/h	368	540	459	125	472	401	242	1070	573	702	2246	699
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	30.9	26.7	25.9	33.8	27.4	0.0	32.3	21.4	21.4	27.9	16.2	0.0
Incr Delay (d2), s/veh	9.0	6.0	2.5	7.7	0.5	0.0	1.7	3.9	7.1	9.0	2.0	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	6.5	4.4	0.8	1.2	0.0	1.0	7.1	8.1	5.9	8.9	0.0
LnGrp Delay(d),s/veh	39.9	32.7	28.5	41.5	28.0	0.0	34.0	25.3	28.5	36.9	18.2	0.0
LnGrp LOS	D	C	C	D	C		C	C	C	D	B	
Approach Vol, veh/h		823			102			1256			2157	
Approach Delay, s/veh		34.0			32.5			27.0			23.0	
Approach LOS		C			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.8	26.9	6.9	19.4	8.8	35.9	12.1	14.3				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	14.5	21.9	5.0	20.6	5.0	31.4	7.6	18.0				
Max Q Clear Time (g_c+1), s	12.9	15.9	3.3	13.4	4.0	20.4	7.6	4.3				
Green Ext Time (p_c), s	0.4	3.5	0.0	1.6	0.0	7.6	0.0	0.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			26.4									
HCM 2010 LOS			C									

# HCM Signalized Intersection Capacity Analysis

## 7: Broadway & US-101 SB Ramps






















04/01/2020

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↔	↔↔↔					↔↔↔	↔	↔↔	↔↔	↔↔	
Traffic Volume (vph)	292	1	1023	0	0	0	0	1070	462	364	1070	0	
Future Volume (vph)	292	1	1023	0	0	0	0	1070	462	364	1070	0	
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		
Lane Util. Factor		1.00	0.76					0.86	0.86	0.97	0.95		
Frt		1.00	0.85					0.98	0.85	1.00	1.00		
Flt Protected		0.95	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (prot)		1774	3610					4733	1362	3433	3539		
Flt Permitted		0.95	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (perm)		1774	3610					4733	1362	3433	3539		
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)	317	1	1112	0	0	0	0	1163	502	396	1163	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	14	208	0	0	0	
Lane Group Flow (vph)	0	318	1112	0	0	0	0	1280	163	396	1163	0	
Turn Type	Split	NA	custom					NA	Perm	Split	NA		
Protected Phases	7	7	2 7					2		6	6		
Permitted Phases									2				
Actuated Green, G (s)		18.5	49.5					26.5	26.5	31.5	31.5		
Effective Green, g (s)		18.5	49.5					26.5	26.5	31.5	31.5		
Actuated g/C Ratio		0.21	0.55					0.29	0.29	0.35	0.35		
Clearance Time (s)		4.5						4.5	4.5	4.5	4.5		
Vehicle Extension (s)		3.0						3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)		364	1985					1393	401	1201	1238		
v/s Ratio Prot		c0.18	0.31					c0.27		0.12	c0.33		
v/s Ratio Perm									0.12				
v/c Ratio		0.87	0.56					0.92	0.41	0.33	0.94		
Uniform Delay, d1		34.6	13.2					30.7	25.4	21.5	28.3		
Progression Factor		1.00	1.00					1.00	1.00	1.00	1.00		
Incremental Delay, d2		20.0	0.4					11.2	3.0	0.7	14.7		
Delay (s)		54.6	13.5					41.9	28.5	22.2	43.0		
Level of Service		D	B					D	C	C	D		
Approach Delay (s)		22.7			0.0			38.9			37.7		
Approach LOS		C			A			D			D		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			33.5									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.92										
Actuated Cycle Length (s)			90.0									Sum of lost time (s)	13.5
Intersection Capacity Utilization			62.0%									ICU Level of Service	B
Analysis Period (min)			15										

c Critical Lane Group
























HCM 2010 Signalized Intersection Summary  
 8: US-101 NB Ramp & Old Bayshore Hwy

04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	702	188	745	313	18	147	4	602	17	11	5
Future Volume (veh/h)	12	702	188	745	313	18	147	4	602	17	11	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	13	763	204	810	340	20	108	0	712	18	12	5
Adj No. of Lanes	1	2	1	2	2	0	1	0	2	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	28	881	394	909	1690	99	413	0	738	31	20	8
Arrive On Green	0.02	0.25	0.25	0.26	0.50	0.50	0.23	0.00	0.23	0.03	0.03	0.03
Sat Flow, veh/h	1774	3539	1583	3442	3398	199	1774	0	3167	912	608	253
Grp Volume(v), veh/h	13	763	204	810	176	184	108	0	712	35	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1721	1770	1828	1774	0	1583	1772	0	0
Q Serve(g_s), s	0.6	16.8	9.1	18.5	4.5	4.6	4.1	0.0	18.2	1.6	0.0	0.0
Cycle Q Clear(g_c), s	0.6	16.8	9.1	18.5	4.5	4.6	4.1	0.0	18.2	1.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.11	1.00		1.00	0.51		0.14
Lane Grp Cap(c), veh/h	28	881	394	909	880	909	413	0	738	59	0	0
V/C Ratio(X)	0.47	0.87	0.52	0.89	0.20	0.20	0.26	0.00	0.97	0.59	0.00	0.00
Avail Cap(c_a), veh/h	109	933	417	991	880	909	413	0	738	391	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	39.8	29.3	26.4	28.9	11.5	11.5	25.6	0.0	31.0	38.9	0.0	0.0
Incr Delay (d2), s/veh	11.8	8.3	1.1	9.7	0.1	0.1	1.5	0.0	25.7	8.9	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	0.4	9.2	4.1	10.0	2.2	2.3	2.2	0.0	10.5	0.9	0.0	0.0
LnGrp Delay(d),s/veh	51.6	37.7	27.5	38.6	11.6	11.6	27.1	0.0	56.6	47.8	0.0	0.0
LnGrp LOS	D	D	C	D	B	B	C		E	D		
Approach Vol, veh/h		980			1170			820			35	
Approach Delay, s/veh		35.7			30.3			52.8			47.8	
Approach LOS		D			C			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		23.5	26.0	24.8		7.2	5.8	45.1				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		19.0	23.5	21.5		18.0	5.0	40.0				
Max Q Clear Time (g_c+I1), s		20.2	20.5	18.8		3.6	2.6	6.6				
Green Ext Time (p_c), s		0.0	1.1	1.5		0.1	0.0	2.1				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			38.4									
HCM 2010 LOS			D									
<b>Notes</b>												













HCM 2010 Signalized Intersection Summary  
 9: Anza Blvd & Airport Blvd

04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 						 	
Traffic Volume (veh/h)	329	159	21	220	217	98	79	155	105	66	144	119
Future Volume (veh/h)	329	159	21	220	217	98	79	155	105	66	144	119
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	358	173	23	239	236	107	86	168	114	72	157	129
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	373	594	78	279	325	143	394	414	352	147	324	277
Arrive On Green	0.21	0.19	0.19	0.16	0.14	0.14	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1774	3147	413	1774	2395	1052	1774	1863	1583	680	1501	1284
Grp Volume(v), veh/h	358	96	100	239	172	171	86	168	114	194	0	164
Grp Sat Flow(s),veh/h/ln	1774	1770	1790	1774	1770	1677	1774	1863	1583	1829	0	1636
Q Serve(g_s), s	16.6	3.9	4.0	10.9	7.8	8.2	3.3	6.4	5.0	7.7	0.0	7.3
Cycle Q Clear(g_c), s	16.6	3.9	4.0	10.9	7.8	8.2	3.3	6.4	5.0	7.7	0.0	7.3
Prop In Lane	1.00		0.23	1.00		0.63	1.00		1.00	0.37		0.78
Lane Grp Cap(c), veh/h	373	334	338	279	240	228	394	414	352	395	0	354
V/C Ratio(X)	0.96	0.29	0.30	0.86	0.72	0.75	0.22	0.41	0.32	0.49	0.00	0.47
Avail Cap(c_a), veh/h	373	412	417	343	382	362	394	414	352	395	0	354
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	0.00	1.00
Uniform Delay (d), s/veh	32.6	29.0	29.0	34.2	34.5	34.6	26.5	27.7	27.2	28.6	0.0	28.5
Incr Delay (d2), s/veh	36.3	0.5	0.5	16.3	4.0	4.9	1.3	2.9	2.4	4.3	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	11.9	1.9	2.0	6.6	4.1	4.1	1.8	3.7	2.4	4.4	0.0	3.7
LnGrp Delay(d),s/veh	68.8	29.5	29.5	50.5	38.5	39.5	27.8	30.6	29.6	32.9	0.0	32.8
LnGrp LOS	E	C	C	D	D	D	C	C	C	C		C
Approach Vol, veh/h		554			582			368			358	
Approach Delay, s/veh		54.9			43.7			29.6			32.9	
Approach LOS		D			D			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		23.0	17.6	20.2		22.5	22.0	15.8				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.5	16.1	19.4		18.0	17.5	18.0				
Max Q Clear Time (g_c+I1), s		8.4	12.9	6.0		9.7	18.6	10.2				
Green Ext Time (p_c), s		1.1	0.2	0.8		1.4	0.0	1.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			42.2									
HCM 2010 LOS			D									
<b>Notes</b>												

HCM 2010 Signalized Intersection Summary  
 10: US-101 NB Ramps & Airport Blvd

04/01/2020

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	 							
Traffic Volume (veh/h)	486	59	685	103	218	514		
Future Volume (veh/h)	486	59	685	103	218	514		
Number	4	14	3	8	5	12		
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		
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863		
Adj Flow Rate, veh/h	528	64	825	0	237	559		
Adj No. of Lanes	2	0	2	1	1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	693	84	981	515	513	895		
Arrive On Green	0.22	0.22	0.28	0.00	0.29	0.29		
Sat Flow, veh/h	3273	384	3548	1863	1774	1583		
Grp Volume(v), veh/h	293	299	825	0	237	559		
Grp Sat Flow(s),veh/h/ln	1770	1795	1774	1863	1774	1583		
Q Serve(g_s), s	9.7	9.7	13.7	0.0	6.8	14.8		
Cycle Q Clear(g_c), s	9.7	9.7	13.7	0.0	6.8	14.8		
Prop In Lane		0.21	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	386	391	981	515	513	895		
V/C Ratio(X)	0.76	0.76	0.84	0.00	0.46	0.62		
Avail Cap(c_a), veh/h	511	519	1168	613	513	895		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00		
Uniform Delay (d), s/veh	22.8	22.9	21.2	0.0	18.2	9.1		
Incr Delay (d2), s/veh	4.7	4.8	4.9	0.0	3.0	3.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	5.2	5.3	7.3	0.0	3.7	10.3		
LnGrp Delay(d),s/veh	27.5	27.7	26.2	0.0	21.2	12.4		
LnGrp LOS	C	C	C		C	B		
Approach Vol, veh/h	592			825	796			
Approach Delay, s/veh	27.6			26.2	15.0			
Approach LOS	C			C	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		22.5		18.1				21.7
Change Period (Y+Rc), s		4.5		4.5				4.5
Max Green Setting (Gmax), s		18.0		18.0				20.5
Max Q Clear Time (g_c+I1), s		16.8		11.7				15.7
Green Ext Time (p_c), s		0.5		1.8				1.6
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			22.5					
HCM 2010 LOS			C					
<b>Notes</b>								

# HCM Signalized Intersection Capacity Analysis

## 11: Peninsula Ave & N. Bayshore Blvd

04/01/2020



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	255	89	729	582	215	838
Future Volume (vph)	255	89	729	582	215	838
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	0.93		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3303		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3303		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	277	97	792	633	234	911
RTOR Reduction (vph)	0	77	173	0	0	0
Lane Group Flow (vph)	277	20	1252	0	234	911
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8				1	6
Permitted Phases		8	2			
Actuated Green, G (s)	15.9	15.9	35.5		12.8	52.8
Effective Green, g (s)	15.9	15.9	35.5		12.8	52.8
Actuated g/C Ratio	0.20	0.20	0.46		0.16	0.68
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	362	323	1509		291	2404
v/s Ratio Prot	c0.16				c0.13	0.26
v/s Ratio Perm		0.01	c0.38			
v/c Ratio	0.77	0.06	0.83		0.80	0.38
Uniform Delay, d1	29.1	24.9	18.5		31.2	5.4
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	9.3	0.1	5.4		14.8	0.5
Delay (s)	38.4	25.0	23.9		46.0	5.8
Level of Service	D	C	C		D	A
Approach Delay (s)	34.9		23.9			14.0
Approach LOS	C		C			B

### Intersection Summary

HCM 2000 Control Delay	21.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	77.7	Sum of lost time (s)	13.5
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

# HCM Signalized Intersection Capacity Analysis

## 12: Peninsula Ave/Coyote Point Dr & Airport Blvd

04/01/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	94	811	822	48	122	33
Future Volume (vph)	94	811	822	48	122	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	3433	1863	1863	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	3433	1863	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	102	882	893	52	133	36
RTOR Reduction (vph)	0	245	0	0	0	26
Lane Group Flow (vph)	102	637	893	52	133	10
Turn Type	Perm	pt+ov	Prot	NA	NA	Perm
Protected Phases		4 5	5	2	6	
Permitted Phases	4					6
Actuated Green, G (s)	14.4	38.4	19.5	43.1	19.1	19.1
Effective Green, g (s)	14.4	38.4	19.5	43.1	19.1	19.1
Actuated g/C Ratio	0.22	0.58	0.29	0.65	0.29	0.29
Clearance Time (s)	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	383	914	1006	1207	535	454
v/s Ratio Prot		c0.40	c0.26	0.03	c0.07	
v/s Ratio Perm	0.06					0.01
v/c Ratio	0.27	0.70	0.89	0.04	0.25	0.02
Uniform Delay, d1	21.7	9.9	22.5	4.2	18.2	17.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	2.3	9.6	0.1	1.1	0.1
Delay (s)	22.0	12.3	32.1	4.3	19.3	17.1
Level of Service	C	B	C	A	B	B
Approach Delay (s)	13.3			30.5	18.8	
Approach LOS	B			C	B	

### Intersection Summary

HCM 2000 Control Delay	21.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	66.5	Sum of lost time (s)	13.5
Intersection Capacity Utilization	64.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

# Queues

## 3: Broadway/Airport Blvd & Old Bayshore Hwy

04/01/2020



Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	54	55	614	66	1303	624	3	159	91
v/c Ratio	0.29	0.29	0.34	0.24	0.90	0.27	0.03	0.22	0.20
Control Delay	41.3	41.2	1.0	41.7	35.2	8.1	44.0	32.1	2.2
Queue Delay	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Total Delay	41.3	41.2	1.0	41.7	36.2	8.1	44.0	32.1	2.2
Queue Length 50th (ft)	30	31	0	18	359	67	2	40	0
Queue Length 95th (ft)	68	70	14	41	#568	150	11	74	9
Internal Link Dist (ft)		573		269		426		518	
Turn Bay Length (ft)	360						210		115
Base Capacity (vph)	341	349	1929	696	1454	2331	99	739	448
Starvation Cap Reductn	0	0	0	0	39	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.16	0.32	0.09	0.92	0.27	0.03	0.22	0.20

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 4: Broadway & California Dr

04/01/2020



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	638	288	41	309	133	7	575	129	372	388
v/c Ratio	0.82	0.42	0.28	0.53	0.31	0.03	0.63	0.71	0.47	0.43
Control Delay	37.7	20.4	38.7	31.5	2.9	22.7	28.2	57.1	18.7	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.1	1.2
Total Delay	37.7	20.4	38.7	31.5	2.9	22.7	28.2	57.1	37.8	4.8
Queue Length 50th (ft)	140	104	18	69	0	2	121	58	118	0
Queue Length 95th (ft)	#240	171	50	106	12	12	189	#153	215	51
Internal Link Dist (ft)		329		578			73		137	
Turn Bay Length (ft)	225		95		350	50				
Base Capacity (vph)	820	757	147	869	543	260	915	181	788	893
Starvation Cap Reductn	0	0	0	0	0	0	0	0	406	297
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.38	0.28	0.36	0.24	0.03	0.63	0.71	0.97	0.65

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 5: Broadway & Carolan Dr

04/09/2020



Lane Group	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	121	638	1250	381	839
v/c Ratio	0.33	0.88	0.74	0.85	0.25
Control Delay	24.0	21.2	23.2	44.8	5.5
Queue Delay	0.0	0.0	37.7	0.0	0.0
Total Delay	24.0	21.2	60.9	44.8	5.5
Queue Length 50th (ft)	42	48	170	153	51
Queue Length 95th (ft)	83	#235	227	#302	72
Internal Link Dist (ft)	312		137		329
Turn Bay Length (ft)		200		125	
Base Capacity (vph)	488	799	1687	472	3325
Starvation Cap Reductn	0	0	522	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.25	0.80	1.07	0.81	0.25

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 6: Broadway & Rollins Rd

04/01/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	111	87	111	89	164	333	276	1491	215	849	278
v/c Ratio	0.38	0.25	0.26	0.56	0.47	0.70	0.62	0.78	0.69	0.49	0.39
Control Delay	33.4	23.6	3.1	45.3	27.0	17.1	34.2	22.2	43.2	18.8	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.4	23.6	3.1	45.3	27.0	17.1	34.2	22.2	43.2	18.8	4.6
Queue Length 50th (ft)	21	29	0	33	57	39	51	178	41	93	0
Queue Length 95th (ft)	47	62	16	#101	106	112	#107	#309	#101	151	50
Internal Link Dist (ft)		340			251			329		336	
Turn Bay Length (ft)	130		110			160	90		200		155
Base Capacity (vph)	289	557	588	160	569	636	459	1918	311	1723	720
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.16	0.19	0.56	0.29	0.52	0.60	0.78	0.69	0.49	0.39

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 7: Broadway & US-101 SB Ramps

04/01/2020



Lane Group	EBT	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	527	721	1460	418	158	592
v/c Ratio	0.94	0.29	0.92	0.67	0.23	0.83
Control Delay	57.0	5.4	39.3	15.7	31.2	46.3
Queue Delay	0.0	0.0	0.5	0.0	0.0	0.0
Total Delay	57.0	5.4	39.8	15.7	31.2	46.3
Queue Length 50th (ft)	289	57	304	84	39	171
Queue Length 95th (ft)	#487	77	#405	212	66	#254
Internal Link Dist (ft)	446		336			426
Turn Bay Length (ft)		200		105		
Base Capacity (vph)	562	2522	1591	623	690	711
Starvation Cap Reductn	0	0	18	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.29	0.93	0.67	0.23	0.83

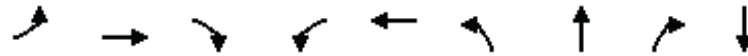
### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 8: US-101 NB Ramp & Old Bayshore Hwy

04/01/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	9	247	98	901	500	326	315	300	29
v/c Ratio	0.08	0.49	0.27	0.75	0.27	0.72	0.71	0.48	0.18
Control Delay	38.9	34.1	2.8	28.6	11.7	38.0	33.9	6.5	33.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.9	34.1	2.8	28.6	11.7	38.0	33.9	6.5	33.0
Queue Length 50th (ft)	4	52	0	164	48	128	110	0	10
Queue Length 95th (ft)	20	101	8	#353	135	#332	#312	66	38
Internal Link Dist (ft)		386			573		242		94
Turn Bay Length (ft)	205		170			130			
Base Capacity (vph)	118	855	507	1194	1900	453	445	625	434
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.29	0.19	0.75	0.26	0.72	0.71	0.48	0.07

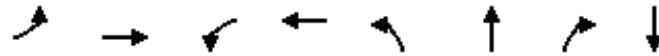
### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Queues

9: Anza Blvd & Airport Blvd

04/01/2020



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	151	191	165	458	65	191	142	234
v/c Ratio	0.85	0.28	0.92	0.67	0.16	0.46	0.29	0.27
Control Delay	75.7	23.8	87.2	32.7	25.6	29.9	6.6	12.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.7	23.8	87.2	32.7	25.6	29.9	6.6	12.3
Queue Length 50th (ft)	72	35	79	103	26	82	0	20
Queue Length 95th (ft)	#183	63	#200	150	62	153	43	51
Internal Link Dist (ft)		477		433		347		50
Turn Bay Length (ft)	90		210					
Base Capacity (vph)	177	830	180	833	399	419	484	857
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.23	0.92	0.55	0.16	0.46	0.29	0.27

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Queues

10: US-101 NB Ramps & Airport Blvd

04/01/2020



Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	161	749	747	329	687
v/c Ratio	0.41	0.96	0.94	0.72	0.52
Control Delay	34.2	47.4	44.0	37.9	2.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	34.2	47.4	44.0	37.9	2.7
Queue Length 50th (ft)	37	368	363	151	26
Queue Length 95th (ft)	66	#652	#644	#275	62
Internal Link Dist (ft)	300		611	186	
Turn Bay Length (ft)				230	230
Base Capacity (vph)	785	780	792	460	1328
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.21	0.96	0.94	0.72	0.52

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 11: Peninsula Ave & N. Bayshore Blvd

04/01/2020



Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	265	357	1437	49	789
v/c Ratio	0.66	0.70	0.77	0.33	0.36
Control Delay	29.5	17.5	17.7	34.2	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	29.5	17.5	17.7	34.2	6.6
Queue Length 50th (ft)	89	51	227	17	63
Queue Length 95th (ft)	156	130	#415	49	110
Internal Link Dist (ft)	179		604		286
Turn Bay Length (ft)				100	
Base Capacity (vph)	527	609	1856	148	2207
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.50	0.59	0.77	0.33	0.36

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Queues

12: Peninsula Ave/Coyote Point Dr & Airport Blvd

04/01/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	22	982	1438	48	17	10
v/c Ratio	0.10	0.72	0.88	0.03	0.04	0.03
Control Delay	31.5	3.7	28.2	3.3	27.3	15.6
Queue Delay	0.0	0.0	47.2	0.0	0.0	0.0
Total Delay	31.5	3.7	75.4	3.3	27.3	15.6
Queue Length 50th (ft)	10	0	296	4	6	0
Queue Length 95th (ft)	30	33	#552	17	25	13
Internal Link Dist (ft)	611			286	438	
Turn Bay Length (ft)			85			
Base Capacity (vph)	401	1380	1664	1428	441	383
Starvation Cap Reductn	0	10	379	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.72	1.12	0.03	0.04	0.03

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 3: Broadway/Airport Blvd & Old Bayshore Hwy

04/01/2020



Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	107	108	1218	99	1099	401	9	278	126
v/c Ratio	0.34	0.34	0.67	0.32	1.03	0.20	0.09	0.34	0.26
Control Delay	34.5	34.5	4.8	36.9	67.9	10.6	42.9	30.7	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.5	34.5	4.8	36.9	67.9	10.6	42.9	30.7	3.8
Queue Length 50th (ft)	54	55	42	25	-363	52	5	70	0
Queue Length 95th (ft)	108	108	71	50	#504	102	21	111	26
Internal Link Dist (ft)		573		269		426		518	
Turn Bay Length (ft)	360						210		115
Base Capacity (vph)	354	358	1830	725	1066	1991	103	808	488
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.30	0.67	0.14	1.03	0.20	0.09	0.34	0.26

### Intersection Summary

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

# Queues

## 4: Broadway & California Dr

04/01/2020



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	538	297	51	287	207	22	336	97	612	678
v/c Ratio	0.81	0.48	0.32	0.49	0.47	0.12	0.29	0.68	0.74	0.69
Control Delay	38.0	21.9	35.7	28.7	7.4	21.5	17.8	57.8	23.9	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	53.3	3.9
Total Delay	38.0	21.9	35.7	28.7	7.4	21.5	17.8	57.8	77.2	12.1
Queue Length 50th (ft)	110	104	20	58	0	7	50	40	201	40
Queue Length 95th (ft)	#200	175	55	92	45	25	91	#118	#406	163
Internal Link Dist (ft)		329		578			73		137	
Turn Bay Length (ft)	225		95		350	50				
Base Capacity (vph)	681	693	166	937	579	176	1144	143	822	986
Starvation Cap Reductn	0	0	0	0	0	0	0	0	345	223
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.43	0.31	0.31	0.36	0.13	0.29	0.68	1.28	0.89

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 5: Broadway & Carolan Dr

04/09/2020



Lane Group	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	89	490	956	609	1179
v/c Ratio	0.35	0.76	0.65	0.90	0.32
Control Delay	31.2	11.3	24.8	39.5	4.1
Queue Delay	0.0	0.0	2.5	2.6	0.0
Total Delay	31.2	11.3	27.2	42.0	4.1
Queue Length 50th (ft)	36	0	129	229	50
Queue Length 95th (ft)	75	79	199	#481	103
Internal Link Dist (ft)	312		137		329
Turn Bay Length (ft)		200		125	
Base Capacity (vph)	439	761	1461	744	3718
Starvation Cap Reductn	0	0	364	60	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.20	0.64	0.87	0.89	0.32

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Queues

6: Broadway & Rollins Rd

04/01/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	280	314	229	34	68	264	100	1156	545	1612	118
v/c Ratio	0.80	0.65	0.40	0.29	0.22	0.54	0.43	0.77	0.83	0.71	0.15
Control Delay	52.7	32.8	6.3	41.9	27.5	8.3	41.4	29.0	43.2	20.5	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0
Total Delay	52.7	32.8	6.3	41.9	27.5	8.3	41.4	29.0	43.2	20.8	2.6
Queue Length 50th (ft)	70	140	2	16	28	0	24	190	134	246	0
Queue Length 95th (ft)	#139	226	53	44	60	57	49	249	#224	315	22
Internal Link Dist (ft)		340			251			329		336	
Turn Bay Length (ft)	130		110			160	90		200		155
Base Capacity (vph)	352	518	601	119	452	584	231	1498	672	2274	787
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	161	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.61	0.38	0.29	0.15	0.45	0.43	0.77	0.81	0.76	0.15

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 7: Broadway & US-101 SB Ramps

04/01/2020



Lane Group	EBT	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	318	1112	1294	371	396	1163
v/c Ratio	0.87	0.56	0.92	0.61	0.33	0.94
Control Delay	60.4	14.5	42.1	11.1	22.5	44.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.4	14.5	42.1	11.1	22.5	44.0
Queue Length 50th (ft)	176	168	271	37	84	332
Queue Length 95th (ft)	#325	217	#366	140	121	#469
Internal Link Dist (ft)	446		336			426
Turn Bay Length (ft)		200		105		
Base Capacity (vph)	364	1985	1408	609	1201	1238
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.56	0.92	0.61	0.33	0.94

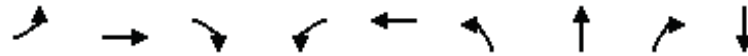
### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 8: US-101 NB Ramp & Old Bayshore Hwy

04/01/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	13	763	204	810	360	144	340	334	35
v/c Ratio	0.12	0.85	0.38	0.85	0.18	0.38	0.59	0.56	0.23
Control Delay	43.5	41.8	8.5	40.2	10.7	33.1	9.6	7.8	37.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.5	41.8	8.5	40.2	10.7	33.1	9.6	7.8	37.7
Queue Length 50th (ft)	7	218	10	225	47	73	9	0	16
Queue Length 95th (ft)	26	#335	65	#344	94	135	96	74	45
Internal Link Dist (ft)		386			573		242		94
Turn Bay Length (ft)	205		170			130			
Base Capacity (vph)	104	900	538	954	1986	378	574	596	383
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.85	0.38	0.85	0.18	0.38	0.59	0.56	0.09

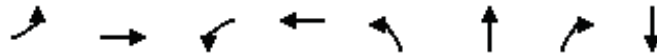
### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Queues

9: Anza Blvd & Airport Blvd

04/01/2020



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	358	196	239	343	77	177	114	358
v/c Ratio	0.97	0.31	0.78	0.63	0.21	0.46	0.26	0.45
Control Delay	76.8	29.5	51.6	31.9	29.6	33.7	6.3	22.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.8	29.5	51.6	31.9	29.6	33.7	6.3	22.2
Queue Length 50th (ft)	189	45	119	71	34	85	0	58
Queue Length 95th (ft)	#381	75	#234	114	77	158	35	105
Internal Link Dist (ft)		477		433		347		50
Turn Bay Length (ft)	90		210					
Base Capacity (vph)	368	813	338	778	369	388	447	795
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.97	0.24	0.71	0.44	0.21	0.46	0.26	0.45

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 10: US-101 NB Ramps & Airport Blvd

04/01/2020



Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	592	425	432	237	559
v/c Ratio	0.72	0.86	0.86	0.50	0.55
Control Delay	28.4	42.3	42.2	25.9	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	28.4	42.3	42.2	25.9	8.8
Queue Length 50th (ft)	115	177	181	86	102
Queue Length 95th (ft)	167	#343	#347	153	185
Internal Link Dist (ft)	300		611	186	
Turn Bay Length (ft)				230	230
Base Capacity (vph)	951	515	522	476	1020
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.62	0.83	0.83	0.50	0.55

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 11: Peninsula Ave & N. Bayshore Blvd

04/01/2020



Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	277	97	1425	234	911
v/c Ratio	0.77	0.24	0.85	0.80	0.38
Control Delay	44.1	7.7	21.3	53.5	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.5
Total Delay	44.1	7.7	21.3	53.5	6.7
Queue Length 50th (ft)	127	0	263	112	92
Queue Length 95th (ft)	#217	36	#421	#226	127
Internal Link Dist (ft)	179		604		286
Turn Bay Length (ft)				100	
Base Capacity (vph)	417	447	1679	308	2404
Starvation Cap Reductn	0	0	0	0	968
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.66	0.22	0.85	0.76	0.63

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 12: Peninsula Ave/Coyote Point Dr & Airport Blvd

04/01/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	102	882	893	52	133	36
v/c Ratio	0.27	0.76	0.89	0.04	0.25	0.08
Control Delay	22.8	8.2	36.8	5.4	21.2	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.8	8.2	36.8	5.4	21.2	7.8
Queue Length 50th (ft)	35	57	192	8	45	0
Queue Length 95th (ft)	72	189	#304	19	87	20
Internal Link Dist (ft)	611			286	438	
Turn Bay Length (ft)			85			
Base Capacity (vph)	483	1160	1010	1205	534	479
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.76	0.88	0.04	0.25	0.08

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

**Appendix J – Cumulative plus Project Conditions Intersections Level of  
Service & Queueing Worksheets**

Intersection						
Int Delay, s/veh	0.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↵	↑↑	↵	
Traffic Vol, veh/h	147	299	0	367	50	0
Future Vol, veh/h	147	299	0	367	50	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	-	-	160	-	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	160	325	0	399	54	0

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	485	0	523	243
Stage 1	-	-	-	-	323	-
Stage 2	-	-	-	-	200	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1074	-	484	758
Stage 1	-	-	-	-	706	-
Stage 2	-	-	-	-	814	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1074	-	484	758
Mov Cap-2 Maneuver	-	-	-	-	484	-
Stage 1	-	-	-	-	706	-
Stage 2	-	-	-	-	814	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	484	-	-	1074	-
HCM Lane V/C Ratio	0.112	-	-	-	-
HCM Control Delay (s)	13.4	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0	-

HCM 2010 TWSC  
2: Project Dwy E & Airport Blvd/Broadway

04/09/2020

Intersection						
Int Delay, s/veh	2.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑	
Traffic Vol, veh/h	147	0	198	367	0	32
Future Vol, veh/h	147	0	198	367	0	32
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	160	0	215	399	0	35

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	160	0	790
Stage 1	-	-	-	-	160
Stage 2	-	-	-	-	630
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	1417	-	327
Stage 1	-	-	-	-	852
Stage 2	-	-	-	-	493
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1417	-	263
Mov Cap-2 Maneuver	-	-	-	-	263
Stage 1	-	-	-	-	852
Stage 2	-	-	-	-	397

Approach	EB	WB	NB
HCM Control Delay, s	0	3.1	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	964	-	-	1417	-
HCM Lane V/C Ratio	0.036	-	-	0.152	-
HCM Control Delay (s)	8.9	-	-	8	0.4
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.5	-

HCM 2010 Signalized Intersection Summary  
 3: Broadway/Airport Blvd & Old Bayshore Hwy























04/01/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	117	19	565	38	21	2	1199	589	33	3	154	90
Future Volume (veh/h)	117	19	565	38	21	2	1199	589	33	3	154	90
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	142	0	614	41	23	2	1303	640	36	3	167	98
Adj No. of Lanes	2	0	2	0	2	0	2	2	0	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	530	0	1748	79	76	7	1385	2054	115	7	724	324
Arrive On Green	0.15	0.00	0.15	0.04	0.04	0.04	0.40	0.60	0.60	0.00	0.20	0.20
Sat Flow, veh/h	3548	0	3167	1774	1690	147	3442	3407	191	1774	3539	1583
Grp Volume(v), veh/h	142	0	614	41	0	25	1303	332	344	3	167	98
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	0	1837	1721	1770	1829	1774	1770	1583
Q Serve(g_s), s	3.2	0.0	9.8	2.0	0.0	1.2	32.9	8.3	8.3	0.2	3.6	4.8
Cycle Q Clear(g_c), s	3.2	0.0	9.8	2.0	0.0	1.2	32.9	8.3	8.3	0.2	3.6	4.8
Prop In Lane	1.00		1.00	1.00		0.08	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	530	0	1748	79	0	82	1385	1067	1103	7	724	324
V/C Ratio(X)	0.27	0.00	0.35	0.52	0.00	0.30	0.94	0.31	0.31	0.42	0.23	0.30
Avail Cap(c_a), veh/h	706	0	1904	353	0	365	1426	1067	1103	98	724	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	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.1	0.0	11.3	42.3	0.0	41.9	26.0	8.8	8.8	45.0	30.1	30.5
Incr Delay (d2), s/veh	0.3	0.0	0.1	5.1	0.0	2.1	12.2	0.8	0.7	35.1	0.7	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	4.3	1.1	0.0	0.7	17.9	4.3	4.4	0.1	1.8	2.3
LnGrp Delay(d),s/veh	34.4	0.0	11.4	47.4	0.0	43.9	38.2	9.5	9.5	80.0	30.8	32.9
LnGrp LOS	C		B	D		D	D	A	A	F	C	C
Approach Vol, veh/h		756			66			1979			268	
Approach Delay, s/veh		15.7			46.1			28.4			32.1	
Approach LOS		B			D			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.9	59.1		18.0	40.9	23.0		8.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	51.0		18.0	37.5	18.5		18.0				
Max Q Clear Time (g_c+I1), s	2.2	10.3		11.8	34.9	6.8		4.0				
Green Ext Time (p_c), s	0.0	4.5		1.8	1.5	1.0		0.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			26.0									
HCM 2010 LOS			C									
<b>Notes</b>												

# HCM 2010 Signalized Intersection Summary



















## 4: Broadway & California Dr

04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	587	251	14	38	284	134	6	530	23	121	346	357
Future Volume (veh/h)	587	251	14	38	284	134	6	530	23	121	346	357
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	638	273	15	41	309	0	7	576	25	132	376	0
Adj No. of Lanes	2	1	0	1	2	1	1	2	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	756	545	30	70	465	208	398	1011	44	167	842	716
Arrive On Green	0.22	0.31	0.31	0.04	0.13	0.00	0.29	0.29	0.29	0.09	0.45	0.00
Sat Flow, veh/h	3442	1750	96	1774	3539	1583	1003	3456	150	1774	1863	1583
Grp Volume(v), veh/h	638	0	288	41	309	0	7	295	306	132	376	0
Grp Sat Flow(s),veh/h/ln	1721	0	1846	1774	1770	1583	1003	1770	1836	1774	1863	1583
Q Serve(g_s), s	12.2	0.0	8.7	1.6	5.7	0.0	0.3	9.7	9.7	5.0	9.5	0.0
Cycle Q Clear(g_c), s	12.2	0.0	8.7	1.6	5.7	0.0	0.3	9.7	9.7	5.0	9.5	0.0
Prop In Lane	1.00		0.05	1.00		1.00	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	756	0	575	70	465	208	398	518	537	167	842	716
V/C Ratio(X)	0.84	0.00	0.50	0.58	0.66	0.00	0.02	0.57	0.57	0.79	0.45	0.00
Avail Cap(c_a), veh/h	879	0	792	158	929	416	398	518	537	194	842	716
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.6	0.0	19.3	32.4	28.3	0.0	17.3	20.6	20.6	30.4	12.9	0.0
Incr Delay (d2), s/veh	6.7	0.0	0.7	7.5	1.6	0.0	0.1	4.5	4.3	17.3	1.7	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	6.5	0.0	4.5	0.9	2.9	0.0	0.1	5.3	5.6	3.3	5.2	0.0
LnGrp Delay(d),s/veh	32.4	0.0	19.9	39.9	30.0	0.0	17.4	25.1	24.9	47.7	14.6	0.0
LnGrp LOS	C		B	D	C		B	C	C	D	B	
Approach Vol, veh/h		926			350			608			508	
Approach Delay, s/veh		28.5			31.1			24.9			23.2	
Approach LOS		C			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s	10.9	24.6	7.2	25.8		35.5	19.6	13.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s	7.5	19.0	6.1	29.4		31.0	17.5	18.0				
Max Q Clear Time (g_c+I1), s	7.0	11.7	3.6	10.7		11.5	14.2	7.7				
Green Ext Time (p_c), s	0.0	2.1	0.0	1.5		2.1	0.9	1.3				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			26.8									
HCM 2010 LOS			C									
























HCM 2010 Signalized Intersection Summary  
5: Broadway & Carolan Dr

04/09/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	121	0	638	0	1105	181	381	845	0
Future Volume (veh/h)	0	0	0	121	0	638	0	1105	181	381	845	0
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln				1900	1863	1863	1863	1863	1900	1863	1863	0
Adj Flow Rate, veh/h				121	0	638	0	1105	181	381	845	0
Adj No. of Lanes				0	1	1	1	3	0	1	3	0
Peak Hour Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %				2	2	2	2	2	2	2	2	0
Cap, veh/h				459	0	409	103	1365	223	423	3117	0
Arrive On Green				0.26	0.00	0.26	0.00	0.31	0.31	0.24	0.61	0.00
Sat Flow, veh/h				1774	0	1583	649	4405	721	1774	5253	0
Grp Volume(v), veh/h				121	0	638	0	850	436	381	845	0
Grp Sat Flow(s),veh/h/ln				1774	0	1583	649	1695	1736	1774	1695	0
Q Serve(g_s), s				3.8	0.0	18.1	0.0	16.2	16.2	14.6	5.4	0.0
Cycle Q Clear(g_c), s				3.8	0.0	18.1	0.0	16.2	16.2	14.6	5.4	0.0
Prop In Lane				1.00		1.00	1.00		0.42	1.00		0.00
Lane Grp Cap(c), veh/h				459	0	409	103	1051	538	423	3117	0
V/C Ratio(X)				0.26	0.00	1.56	0.00	0.81	0.81	0.90	0.27	0.00
Avail Cap(c_a), veh/h				459	0	409	103	1051	538	444	3117	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				20.6	0.0	25.9	0.0	22.2	22.3	25.8	6.3	0.0
Incr Delay (d2), s/veh				0.3	0.0	263.0	0.0	6.7	12.4	20.5	0.2	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.9	0.0	37.7	0.0	8.5	9.6	9.5	2.6	0.0
LnGrp Delay(d),s/veh				21.0	0.0	288.9	0.0	29.0	34.7	46.3	6.5	0.0
LnGrp LOS				C		F		C	C	D	A	
Approach Vol, veh/h					759			1286			1226	
Approach Delay, s/veh					246.2			30.9			18.9	
Approach LOS					F			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	21.2	26.2				47.4		22.6				
Change Period (Y+Rc), s	4.5	4.5				4.5		4.5				
Max Green Setting (Gmax), s	17.5	20.9				42.9		18.1				
Max Q Clear Time (g_c+I1), s	16.6	18.2				7.4		20.1				
Green Ext Time (p_c), s	0.1	1.9				6.7		0.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay					76.4							
HCM 2010 LOS					E							

HCM 2010 Signalized Intersection Summary  
6: Broadway & Rollins Rd




























04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	102	80	102	82	151	306	254	1363	45	198	787	256
Future Volume (veh/h)	102	80	102	82	151	306	254	1363	45	198	787	256
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	111	87	111	89	164	0	276	1482	49	215	855	0
Adj No. of Lanes	2	1	1	1	1	1	2	3	0	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	235	241	205	114	233	198	392	2168	72	313	2064	643
Arrive On Green	0.07	0.13	0.13	0.06	0.13	0.00	0.11	0.43	0.43	0.09	0.41	0.00
Sat Flow, veh/h	3442	1863	1583	1774	1863	1583	3442	5056	167	3442	5085	1583
Grp Volume(v), veh/h	111	87	111	89	164	0	276	994	537	215	855	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	1863	1583	1721	1695	1833	1721	1695	1583
Q Serve(g_s), s	1.9	2.7	4.1	3.1	5.3	0.0	4.8	14.9	14.9	3.8	7.5	0.0
Cycle Q Clear(g_c), s	1.9	2.7	4.1	3.1	5.3	0.0	4.8	14.9	14.9	3.8	7.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	235	241	205	114	233	198	392	1453	786	313	2064	643
V/C Ratio(X)	0.47	0.36	0.54	0.78	0.70	0.00	0.70	0.68	0.68	0.69	0.41	0.00
Avail Cap(c_a), veh/h	280	537	457	156	549	467	603	1453	786	357	2064	643
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	28.1	25.0	25.6	28.9	26.3	0.0	26.8	14.5	14.5	27.6	13.3	0.0
Incr Delay (d2), s/veh	1.5	0.9	2.2	16.1	3.8	0.0	2.3	2.6	4.8	4.6	0.6	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	1.0	1.4	1.9	2.0	3.0	0.0	2.4	7.4	8.5	2.0	3.6	0.0
LnGrp Delay(d),s/veh	29.6	25.9	27.8	45.0	30.2	0.0	29.1	17.1	19.3	32.2	13.9	0.0
LnGrp LOS	C	C	C	D	C		C	B	B	C	B	
Approach Vol, veh/h		309			253			1807			1070	
Approach Delay, s/veh		27.9			35.4			19.6			17.6	
Approach LOS		C			D			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.2	31.4	8.5	12.6	11.7	30.0	8.8	12.4				
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	6.5	26.9	5.5	18.1	11.0	22.4	5.1	18.5				
Max Q Clear Time (g_c+1), s	5.8	16.9	5.1	6.1	6.8	9.5	3.9	7.3				
Green Ext Time (p_c), s	0.1	6.6	0.0	0.6	0.4	4.7	0.0	0.6				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			20.9									
HCM 2010 LOS			C									

# HCM Signalized Intersection Capacity Analysis

## 7: Broadway & US-101 SB Ramps






















04/01/2020

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations			   					   		  	 		
Traffic Volume (vph)	484	13	663	0	0	0	0	1327	437	147	551	0	
Future Volume (vph)	484	13	663	0	0	0	0	1327	437	147	551	0	
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		
Lane Util. Factor		1.00	0.76					0.86	0.86	0.97	0.95		
Frt		1.00	0.85					1.00	0.85	1.00	1.00		
Flt Protected		0.95	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (prot)		1776	3610					4783	1362	3433	3539		
Flt Permitted		0.95	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (perm)		1776	3610					4783	1362	3433	3539		
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)	526	14	721	0	0	0	0	1442	475	160	599	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	3	167	0	0	0	
Lane Group Flow (vph)	0	540	721	0	0	0	0	1487	260	160	599	0	
Turn Type	Split	NA	custom					NA	Perm	Split	NA		
Protected Phases	7	7	2 7					2		6	6		
Permitted Phases									2				
Actuated Green, G (s)		28.9	62.9					29.5	29.5	18.1	18.1		
Effective Green, g (s)		28.9	62.9					29.5	29.5	18.1	18.1		
Actuated g/C Ratio		0.32	0.70					0.33	0.33	0.20	0.20		
Clearance Time (s)		4.5						4.5	4.5	4.5	4.5		
Vehicle Extension (s)		3.0						3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)		570	2522					1567	446	690	711		
v/s Ratio Prot		c0.30	0.20					c0.31		0.05	c0.17		
v/s Ratio Perm									0.19				
v/c Ratio		0.95	0.29					0.95	0.58	0.23	0.84		
Uniform Delay, d1		29.8	5.1					29.5	25.1	30.1	34.6		
Progression Factor		1.00	1.00					1.00	1.00	1.00	1.00		
Incremental Delay, d2		25.0	0.1					13.4	5.5	0.8	11.6		
Delay (s)		54.8	5.2					42.9	30.6	30.9	46.2		
Level of Service		D	A					D	C	C	D		
Approach Delay (s)		26.4			0.0			40.2			43.0		
Approach LOS		C			A			D			D		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			36.3									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.92										
Actuated Cycle Length (s)			90.0									Sum of lost time (s)	13.5
Intersection Capacity Utilization			71.8%									ICU Level of Service	C
Analysis Period (min)			15										

c Critical Lane Group





















HCM 2010 Signalized Intersection Summary  
 8: US-101 NB Ramp & Old Bayshore Hwy

04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	227	90	835	453	7	441	7	454	12	10	5
Future Volume (veh/h)	8	227	90	835	453	7	441	7	454	12	10	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	9	247	98	908	492	8	638	0	329	13	11	5
Adj No. of Lanes	1	2	1	2	2	0	2	0	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	20	404	181	1053	1457	24	1037	0	463	24	21	9
Arrive On Green	0.01	0.11	0.11	0.31	0.41	0.41	0.29	0.00	0.29	0.03	0.03	0.03
Sat Flow, veh/h	1774	3539	1583	3442	3564	58	3548	0	1583	793	671	305
Grp Volume(v), veh/h	9	247	98	908	244	256	638	0	329	29	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1721	1770	1853	1774	0	1583	1769	0	0
Q Serve(g_s), s	0.4	4.7	4.1	17.4	6.6	6.6	10.9	0.0	13.0	1.1	0.0	0.0
Cycle Q Clear(g_c), s	0.4	4.7	4.1	17.4	6.6	6.6	10.9	0.0	13.0	1.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	0.45		0.17
Lane Grp Cap(c), veh/h	20	404	181	1053	724	757	1037	0	463	54	0	0
V/C Ratio(X)	0.44	0.61	0.54	0.86	0.34	0.34	0.62	0.00	0.71	0.53	0.00	0.00
Avail Cap(c_a), veh/h	126	908	406	1251	971	1017	1037	0	463	454	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	34.4	29.6	29.3	22.9	14.2	14.2	21.4	0.0	22.2	33.5	0.0	0.0
Incr Delay (d2), s/veh	14.4	1.5	2.5	5.6	0.3	0.3	2.7	0.0	9.0	7.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.3	1.9	9.0	3.2	3.4	5.7	0.0	6.8	0.7	0.0	0.0
LnGrp Delay(d),s/veh	48.8	31.1	31.8	28.5	14.5	14.5	24.1	0.0	31.1	41.3	0.0	0.0
LnGrp LOS	D	C	C	C	B	B	C		C	D		
Approach Vol, veh/h		354			1408			967			29	
Approach Delay, s/veh		31.7			23.5			26.5			41.3	
Approach LOS		C			C			C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		25.0	26.0	12.5		6.7	5.3	33.2				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		20.5	25.5	18.0		18.0	5.0	38.5				
Max Q Clear Time (g_c+I1), s		15.0	19.4	6.7		3.1	2.4	8.6				
Green Ext Time (p_c), s		2.0	2.0	1.4		0.1	0.0	3.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			25.8									
HCM 2010 LOS			C									
<b>Notes</b>												

HCM 2010 Signalized Intersection Summary  
 9: Anza Blvd & Airport Blvd












04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	139	232	28	162	380	55	66	169	191	23	71	121
Future Volume (veh/h)	139	232	28	162	380	55	66	169	191	23	71	121
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	151	252	30	176	413	60	72	184	208	25	77	132
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	177	554	65	177	539	78	437	459	390	108	333	380
Arrive On Green	0.10	0.17	0.17	0.10	0.17	0.17	0.25	0.25	0.25	0.24	0.24	0.24
Sat Flow, veh/h	1774	3190	376	1774	3105	448	1774	1863	1583	451	1389	1583
Grp Volume(v), veh/h	151	139	143	176	234	239	72	184	208	102	0	132
Grp Sat Flow(s),veh/h/ln	1774	1770	1796	1774	1770	1784	1774	1863	1583	1840	0	1583
Q Serve(g_s), s	6.3	5.3	5.4	7.4	9.5	9.6	2.4	6.2	8.5	3.3	0.0	5.2
Cycle Q Clear(g_c), s	6.3	5.3	5.4	7.4	9.5	9.6	2.4	6.2	8.5	3.3	0.0	5.2
Prop In Lane	1.00		0.21	1.00		0.25	1.00		1.00	0.25		1.00
Lane Grp Cap(c), veh/h	177	307	312	177	307	310	437	459	390	441	0	380
V/C Ratio(X)	0.85	0.45	0.46	0.99	0.76	0.77	0.16	0.40	0.53	0.23	0.00	0.35
Avail Cap(c_a), veh/h	177	425	431	177	425	428	437	459	390	441	0	380
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	0.00	1.00
Uniform Delay (d), s/veh	33.2	27.8	27.8	33.7	29.5	29.6	22.2	23.6	24.5	22.9	0.0	23.6
Incr Delay (d2), s/veh	30.6	1.0	1.1	65.3	5.3	5.7	0.8	2.6	5.1	1.2	0.0	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	2.7	2.8	6.8	5.1	5.2	1.3	3.5	4.3	1.8	0.0	2.5
LnGrp Delay(d),s/veh	63.8	28.8	28.9	99.0	34.8	35.3	23.0	26.2	29.6	24.2	0.0	26.1
LnGrp LOS	E	C	C	F	C	D	C	C	C	C		C
Approach Vol, veh/h		433			649			464			234	
Approach Delay, s/veh		41.1			52.4			27.3			25.3	
Approach LOS		D			D			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		23.0	12.0	17.5		22.5	12.0	17.5				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.5	7.5	18.0		18.0	7.5	18.0				
Max Q Clear Time (g_c+I1), s		10.5	9.4	7.4		7.2	8.3	11.6				
Green Ext Time (p_c), s		1.2	0.0	1.1		1.0	0.0	1.4				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			39.5									
HCM 2010 LOS			D									
<b>Notes</b>												

# HCM 2010 Signalized Intersection Summary

## 10: US-101 NB Ramps & Airport Blvd

04/01/2020

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Traffic Volume (veh/h)	141	22	1209	214	351	632		
Future Volume (veh/h)	141	22	1209	214	351	632		
Number	4	14	3	8	5	12		
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		
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863		
Adj Flow Rate, veh/h	153	24	1480	0	382	687		
Adj No. of Lanes	2	0	2	1	1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	257	40	1688	886	447	1152		
Arrive On Green	0.08	0.08	0.48	0.00	0.25	0.25		
Sat Flow, veh/h	3168	474	3548	1863	1774	1583		
Grp Volume(v), veh/h	87	90	1480	0	382	687		
Grp Sat Flow(s),veh/h/ln	1770	1779	1774	1863	1774	1583		
Q Serve(g_s), s	3.4	3.5	26.8	0.0	14.7	14.9		
Cycle Q Clear(g_c), s	3.4	3.5	26.8	0.0	14.7	14.9		
Prop In Lane		0.27	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	148	149	1688	886	447	1152		
V/C Ratio(X)	0.59	0.61	0.88	0.00	0.86	0.60		
Avail Cap(c_a), veh/h	446	448	2010	1055	447	1152		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00		
Uniform Delay (d), s/veh	31.6	31.6	16.8	0.0	25.5	4.7		
Incr Delay (d2), s/veh	3.7	3.9	4.1	0.0	18.5	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	1.8	1.9	13.9	0.0	9.4	14.1		
LnGrp Delay(d),s/veh	35.3	35.6	21.0	0.0	44.0	7.0		
LnGrp LOS	D	D	C		D	A		
Approach Vol, veh/h	177			1480	1069			
Approach Delay, s/veh	35.4			21.0	20.2			
Approach LOS	D			C	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		22.5		10.5				38.5
Change Period (Y+Rc), s		4.5		4.5				4.5
Max Green Setting (Gmax), s		18.0		18.0				40.5
Max Q Clear Time (g_c+I1), s		16.9		5.5				28.8
Green Ext Time (p_c), s		0.6		0.7				5.2
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			21.6					
HCM 2010 LOS			C					
<b>Notes</b>								

# HCM Signalized Intersection Capacity Analysis

## 11: Peninsula Ave & N. Bayshore Blvd

04/01/2020



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	244	340	1060	297	47	732
Future Volume (vph)	244	340	1060	297	47	732
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	0.97		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3423		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3423		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	265	370	1152	323	51	796
RTOR Reduction (vph)	0	143	32	0	0	0
Lane Group Flow (vph)	265	227	1443	0	51	796
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8				1	6
Permitted Phases		8	2			
Actuated Green, G (s)	14.5	14.5	37.3		2.9	44.7
Effective Green, g (s)	14.5	14.5	37.3		2.9	44.7
Actuated g/C Ratio	0.21	0.21	0.55		0.04	0.66
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	376	336	1872		75	2319
v/s Ratio Prot	c0.15				c0.03	0.22
v/s Ratio Perm		0.14	c0.42			
v/c Ratio	0.70	0.68	0.77		0.68	0.34
Uniform Delay, d1	24.9	24.7	12.1		32.2	5.2
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	5.9	5.3	3.1		22.4	0.4
Delay (s)	30.8	30.0	15.2		54.6	5.6
Level of Service	C	C	B		D	A
Approach Delay (s)	30.3		15.2			8.6
Approach LOS	C		B			A

### Intersection Summary

HCM 2000 Control Delay	16.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	68.2	Sum of lost time (s)	13.5
Intersection Capacity Utilization	67.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

# HCM Signalized Intersection Capacity Analysis

## 12: Peninsula Ave/Coyote Point Dr & Airport Blvd

04/01/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	20	911	1370	44	16	9
Future Volume (vph)	20	911	1370	44	16	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	3433	1863	1863	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	3433	1863	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	990	1489	48	17	10
RTOR Reduction (vph)	0	331	0	0	0	8
Lane Group Flow (vph)	22	659	1489	48	17	2
Turn Type	Perm	pt+ov	Prot	NA	NA	Perm
Protected Phases		4 5	5	2	6	
Permitted Phases	4					6
Actuated Green, G (s)	10.3	54.4	39.6	62.7	18.6	18.6
Effective Green, g (s)	10.3	54.4	39.6	62.7	18.6	18.6
Actuated g/C Ratio	0.13	0.66	0.48	0.76	0.23	0.23
Clearance Time (s)	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	222	1050	1657	1424	422	359
v/s Ratio Prot		c0.42	c0.43	0.03	c0.01	
v/s Ratio Perm	0.01					0.00
v/c Ratio	0.10	0.63	0.90	0.03	0.04	0.01
Uniform Delay, d1	31.7	8.0	19.4	2.3	24.7	24.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	1.2	6.9	0.0	0.2	0.0
Delay (s)	31.9	9.1	26.3	2.4	24.9	24.6
Level of Service	C	A	C	A	C	C
Approach Delay (s)	9.6			25.5	24.8	
Approach LOS	A			C	C	

### Intersection Summary

HCM 2000 Control Delay	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	82.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection						
Int Delay, s/veh	7.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↖	↑↑	↗	
Traffic Vol, veh/h	300	56	0	303	290	0
Future Vol, veh/h	300	56	0	303	290	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	-	-	160	-	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	326	61	0	329	315	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	387	0	522
Stage 1	-	-	-	-	357
Stage 2	-	-	-	-	165
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	1168	-	484
Stage 1	-	-	-	-	679
Stage 2	-	-	-	-	847
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1168	-	484
Mov Cap-2 Maneuver	-	-	-	-	484
Stage 1	-	-	-	-	679
Stage 2	-	-	-	-	847

Approach	EB	WB	NB
HCM Control Delay, s	0	0	25.3
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	484	-	-	1168	-
HCM Lane V/C Ratio	0.651	-	-	-	-
HCM Control Delay (s)	25.3	-	-	0	-
HCM Lane LOS	D	-	-	A	-
HCM 95th %tile Q(veh)	4.6	-	-	0	-

HCM 2010 TWSC  
2: Project Dwy E & Airport Blvd/Broadway

04/09/2020

Intersection						
Int Delay, s/veh	2.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑	
Traffic Vol, veh/h	300	0	36	303	0	193
Future Vol, veh/h	300	0	36	303	0	193
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	326	0	39	329	0	210

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	326	0	569
Stage 1	-	-	-	-	326
Stage 2	-	-	-	-	243
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	1230	-	452
Stage 1	-	-	-	-	704
Stage 2	-	-	-	-	775
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1230	-	434
Mov Cap-2 Maneuver	-	-	-	-	434
Stage 1	-	-	-	-	704
Stage 2	-	-	-	-	745






















Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	10.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	853	-	-	1230	-
HCM Lane V/C Ratio	0.246	-	-	0.032	-
HCM Control Delay (s)	10.6	-	-	8	0.1
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	1	-	-	0.1	-

# HCM 2010 Signalized Intersection Summary























## 3: Broadway/Airport Blvd & Old Bayshore Hwy

04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	186	18	1121	44	37	10	1011	331	46	8	303	151
Future Volume (veh/h)	186	18	1121	44	37	10	1011	331	46	8	303	151
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	216	0	1218	48	40	11	1099	360	50	9	329	164
Adj No. of Lanes	2	0	2	0	2	0	2	2	0	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	738	0	1628	86	79	22	1054	1626	224	20	798	357
Arrive On Green	0.21	0.00	0.21	0.05	0.05	0.05	0.31	0.52	0.52	0.01	0.23	0.23
Sat Flow, veh/h	3548	0	3167	1649	1503	417	3442	3126	431	1774	3539	1583
Grp Volume(v), veh/h	216	0	1218	52	0	47	1099	203	207	9	329	164
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1780	0	1789	1721	1770	1787	1774	1770	1583
Q Serve(g_s), s	4.4	0.0	18.0	2.5	0.0	2.2	26.5	5.4	5.5	0.4	6.9	7.7
Cycle Q Clear(g_c), s	4.4	0.0	18.0	2.5	0.0	2.2	26.5	5.4	5.5	0.4	6.9	7.7
Prop In Lane	1.00		1.00	0.93		0.23	1.00		0.24	1.00		1.00
Lane Grp Cap(c), veh/h	738	0	1628	93	0	94	1054	921	930	20	798	357
V/C Ratio(X)	0.29	0.00	0.75	0.56	0.00	0.50	1.04	0.22	0.22	0.45	0.41	0.46
Avail Cap(c_a), veh/h	738	0	1628	370	0	372	1054	921	930	103	798	357
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.9	0.0	16.6	40.0	0.0	39.9	30.0	11.2	11.3	42.5	28.6	29.0
Incr Delay (d2), s/veh	0.2	0.0	2.0	5.1	0.0	4.1	39.5	0.6	0.6	15.1	1.6	4.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	11.8	1.3	0.0	1.2	18.2	2.7	2.8	0.3	3.5	3.8
LnGrp Delay(d),s/veh	29.1	0.0	18.5	45.1	0.0	44.0	69.5	11.8	11.8	57.6	30.2	33.2
LnGrp LOS	C		B	D		D	F	B	B	E	C	C
Approach Vol, veh/h		1434			99			1509			502	
Approach Delay, s/veh		20.1			44.6			53.9			31.7	
Approach LOS		C			D			D			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.5	49.5		22.5	31.0	24.0		9.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	41.0		18.0	26.5	19.5		18.0				
Max Q Clear Time (g_c+I1), s	2.4	7.5		20.0	28.5	9.7		4.5				
Green Ext Time (p_c), s	0.0	2.5		0.0	0.0	1.8		0.4				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			36.8									
HCM 2010 LOS			D									
<b>Notes</b>												




















HCM 2010 Signalized Intersection Summary  
 4: Broadway & California Dr

04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	495	236	37	47	264	192	20	259	54	101	586	624
Future Volume (veh/h)	495	236	37	47	264	192	20	259	54	101	586	624
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	538	257	40	51	287	0	22	282	59	110	637	0
Adj No. of Lanes	2	1	0	1	2	1	1	2	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	650	425	66	83	453	203	268	939	194	141	878	746
Arrive On Green	0.19	0.27	0.27	0.05	0.13	0.00	0.32	0.32	0.32	0.08	0.47	0.00
Sat Flow, veh/h	3442	1574	245	1774	3539	1583	788	2923	603	1774	1863	1583
Grp Volume(v), veh/h	538	0	297	51	287	0	22	169	172	110	637	0
Grp Sat Flow(s),veh/h/ln	1721	0	1820	1774	1770	1583	788	1770	1756	1774	1863	1583
Q Serve(g_s), s	9.6	0.0	9.1	1.8	4.9	0.0	1.5	4.6	4.7	3.9	17.5	0.0
Cycle Q Clear(g_c), s	9.6	0.0	9.1	1.8	4.9	0.0	9.4	4.6	4.7	3.9	17.5	0.0
Prop In Lane	1.00		0.13	1.00		1.00	1.00		0.34	1.00		1.00
Lane Grp Cap(c), veh/h	650	0	491	83	453	203	268	568	564	141	878	746
V/C Ratio(X)	0.83	0.00	0.60	0.62	0.63	0.00	0.08	0.30	0.30	0.78	0.73	0.00
Avail Cap(c_a), veh/h	730	0	717	178	1001	448	268	568	564	181	878	746
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	24.8	0.0	20.3	29.8	26.3	0.0	21.2	16.2	16.3	28.8	13.5	0.0
Incr Delay (d2), s/veh	7.2	0.0	1.2	7.2	1.5	0.0	0.6	1.3	1.4	15.3	5.2	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	5.2	0.0	4.7	1.0	2.5	0.0	0.4	2.4	2.5	2.5	10.1	0.0
LnGrp Delay(d),s/veh	32.0	0.0	21.5	37.0	27.8	0.0	21.8	17.6	17.7	44.1	18.7	0.0
LnGrp LOS	C		C	D	C		C	B	B	D	B	
Approach Vol, veh/h		835			338			363			747	
Approach Delay, s/veh		28.3			29.2			17.9			22.5	
Approach LOS		C			C			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s	9.5	25.0	7.5	21.7		34.5	16.5	12.6				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s	6.5	19.0	6.4	25.1		30.0	13.5	18.0				
Max Q Clear Time (g_c+1), s	5.9	11.4	3.8	11.1		19.5	11.6	6.9				
Green Ext Time (p_c), s	0.0	1.2	0.0	1.4		3.0	0.5	1.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			24.8									
HCM 2010 LOS			C									

























HCM 2010 Signalized Intersection Summary  
 5: Broadway & Carolan Dr

04/09/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	89	0	490	0	736	226	609	1214	0
Future Volume (veh/h)	0	0	0	89	0	490	0	736	226	609	1214	0
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		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
Adj Sat Flow, veh/h/ln				1900	1863	1863	1863	1863	1900	1863	1863	0
Adj Flow Rate, veh/h				89	0	490	0	736	226	609	1214	0
Adj No. of Lanes				0	1	1	1	3	0	1	3	0
Peak Hour Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %				2	2	2	2	2	2	2	2	0
Cap, veh/h				399	0	356	90	939	285	645	3369	0
Arrive On Green				0.22	0.00	0.22	0.00	0.24	0.24	0.36	0.66	0.00
Sat Flow, veh/h				1774	0	1583	458	3871	1175	1774	5253	0
Grp Volume(v), veh/h				89	0	490	0	644	318	609	1214	0
Grp Sat Flow(s),veh/h/ln				1774	0	1583	458	1695	1655	1774	1695	0
Q Serve(g_s), s				3.3	0.0	18.0	0.0	14.2	14.4	26.6	8.5	0.0
Cycle Q Clear(g_c), s				3.3	0.0	18.0	0.0	14.2	14.4	26.6	8.5	0.0
Prop In Lane				1.00		1.00	1.00		0.71	1.00		0.00
Lane Grp Cap(c), veh/h				399	0	356	90	822	402	645	3369	0
V/C Ratio(X)				0.22	0.00	1.38	0.00	0.78	0.79	0.94	0.36	0.00
Avail Cap(c_a), veh/h				399	0	356	90	822	402	676	3369	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				25.3	0.0	31.0	0.0	28.3	28.4	24.7	6.0	0.0
Incr Delay (d2), s/veh				0.3	0.0	185.8	0.0	7.3	14.8	21.4	0.3	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.6	0.0	26.2	0.0	7.5	8.2	16.9	4.0	0.0
LnGrp Delay(d),s/veh				25.6	0.0	216.8	0.0	35.7	43.2	46.1	6.3	0.0
LnGrp LOS				C		F		D	D	D	A	
Approach Vol, veh/h					579			962			1823	
Approach Delay, s/veh					187.4			38.2			19.6	
Approach LOS					F			D			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	33.6	23.9				57.5		22.5				
Change Period (Y+Rc), s	4.5	4.5				4.5		4.5				
Max Green Setting (Gmax), s	30.5	18.0				53.0		18.0				
Max Q Clear Time (g_c+I1), s	28.6	16.4				10.5		20.0				
Green Ext Time (p_c), s	0.5	0.9				11.2		0.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay					53.8							
HCM 2010 LOS					D							

HCM 2010 Signalized Intersection Summary  
6: Broadway & Rollins Rd


























04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	258	289	211	31	63	243	92	1014	55	501	1518	109
Future Volume (veh/h)	258	289	211	31	63	243	92	1014	55	501	1518	109
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	280	314	229	34	68	0	100	1102	60	545	1650	0
Adj No. of Lanes	2	1	1	1	1	1	2	3	0	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	368	392	333	61	257	218	208	1558	85	642	2246	699
Arrive On Green	0.11	0.21	0.21	0.03	0.14	0.00	0.06	0.32	0.32	0.19	0.44	0.00
Sat Flow, veh/h	3442	1863	1583	1774	1863	1583	3442	4937	269	3442	5085	1583
Grp Volume(v), veh/h	280	314	229	34	68	0	100	756	406	545	1650	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	1863	1583	1721	1695	1815	1721	1695	1583
Q Serve(g_s), s	5.6	11.4	9.5	1.3	2.3	0.0	2.0	14.0	14.0	10.9	19.1	0.0
Cycle Q Clear(g_c), s	5.6	11.4	9.5	1.3	2.3	0.0	2.0	14.0	14.0	10.9	19.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.15	1.00		1.00
Lane Grp Cap(c), veh/h	368	392	333	61	257	218	208	1070	573	642	2246	699
V/C Ratio(X)	0.76	0.80	0.69	0.56	0.26	0.00	0.48	0.71	0.71	0.85	0.73	0.00
Avail Cap(c_a), veh/h	368	540	459	125	472	401	242	1070	573	702	2246	699
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	30.9	26.7	25.9	33.8	27.4	0.0	32.3	21.4	21.4	27.9	16.4	0.0
Incr Delay (d2), s/veh	9.0	6.0	2.5	7.7	0.5	0.0	1.7	3.9	7.2	9.0	2.2	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	3.1	6.5	4.4	0.8	1.2	0.0	1.0	7.1	8.1	5.9	9.3	0.0
LnGrp Delay(d),s/veh	39.9	32.7	28.5	41.5	28.0	0.0	34.0	25.4	28.7	36.9	18.6	0.0
LnGrp LOS	D	C	C	D	C		C	C	C	D	B	
Approach Vol, veh/h		823			102			1262			2195	
Approach Delay, s/veh		34.0			32.5			27.1			23.1	
Approach LOS		C			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.8	26.9	6.9	19.4	8.8	35.9	12.1	14.3				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	14.5	21.9	5.0	20.6	5.0	31.4	7.6	18.0				
Max Q Clear Time (g_c+1), s	12.9	16.0	3.3	13.4	4.0	21.1	7.6	4.3				
Green Ext Time (p_c), s	0.4	3.5	0.0	1.6	0.0	7.4	0.0	0.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			26.5									
HCM 2010 LOS			C									

# HCM Signalized Intersection Capacity Analysis

## 7: Broadway & US-101 SB Ramps

04/01/2020

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations			   					  		 	 		
Traffic Volume (vph)	294	1	1023	0	0	0	0	1076	462	376	1105	0	
Future Volume (vph)	294	1	1023	0	0	0	0	1076	462	376	1105	0	
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		
Lane Util. Factor		1.00	0.76					0.86	0.86	0.97	0.95		
Frt		1.00	0.85					0.99	0.85	1.00	1.00		
Flt Protected		0.95	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (prot)		1774	3610					4736	1362	3433	3539		
Flt Permitted		0.95	1.00					1.00	1.00	0.95	1.00		
Satd. Flow (perm)		1774	3610					4736	1362	3433	3539		
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)	320	1	1112	0	0	0	0	1170	502	409	1201	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	13	208	0	0	0	
Lane Group Flow (vph)	0	321	1112	0	0	0	0	1283	168	409	1201	0	
Turn Type	Split	NA	custom					NA	Perm	Split	NA		
Protected Phases	7	7	2 7					2		6	6		
Permitted Phases									2				
Actuated Green, G (s)		18.5	49.3					26.3	26.3	31.7	31.7		
Effective Green, g (s)		18.5	49.3					26.3	26.3	31.7	31.7		
Actuated g/C Ratio		0.21	0.55					0.29	0.29	0.35	0.35		
Clearance Time (s)		4.5						4.5	4.5	4.5	4.5		
Vehicle Extension (s)		3.0						3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)		364	1977					1383	398	1209	1246		
v/s Ratio Prot		c0.18	0.31					c0.27		0.12	c0.34		
v/s Ratio Perm									0.12				
v/c Ratio		0.88	0.56					0.93	0.42	0.34	0.96		
Uniform Delay, d1		34.7	13.3					30.9	25.7	21.4	28.6		
Progression Factor		1.00	1.00					1.00	1.00	1.00	1.00		
Incremental Delay, d2		21.3	0.4					12.1	3.3	0.8	18.2		
Delay (s)		56.0	13.7					43.0	29.0	22.2	46.8		
Level of Service		E	B					D	C	C	D		
Approach Delay (s)		23.1			0.0			39.9			40.5		
Approach LOS		C			A			D			D		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			35.0									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.93										
Actuated Cycle Length (s)			90.0									Sum of lost time (s)	13.5
Intersection Capacity Utilization			62.5%									ICU Level of Service	B
Analysis Period (min)			15										

c Critical Lane Group
























HCM 2010 Signalized Intersection Summary  
 8: US-101 NB Ramp & Old Bayshore Hwy

04/01/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	702	188	780	313	18	147	4	609	17	11	5
Future Volume (veh/h)	12	702	188	780	313	18	147	4	609	17	11	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	13	763	204	848	340	20	108	0	720	18	12	5
Adj No. of Lanes	1	2	1	2	2	0	1	0	2	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	28	881	394	949	1730	101	392	0	699	31	20	9
Arrive On Green	0.02	0.25	0.25	0.28	0.51	0.51	0.22	0.00	0.22	0.03	0.03	0.03
Sat Flow, veh/h	1774	3539	1583	3442	3398	199	1774	0	3167	912	608	253
Grp Volume(v), veh/h	13	763	204	848	176	184	108	0	720	35	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1721	1770	1828	1774	0	1583	1772	0	0
Q Serve(g_s), s	0.6	16.8	9.1	19.3	4.4	4.5	4.1	0.0	18.0	1.6	0.0	0.0
Cycle Q Clear(g_c), s	0.6	16.8	9.1	19.3	4.4	4.5	4.1	0.0	18.0	1.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.11	1.00		1.00	0.51		0.14
Lane Grp Cap(c), veh/h	28	881	394	949	901	930	392	0	699	60	0	0
V/C Ratio(X)	0.47	0.87	0.52	0.89	0.20	0.20	0.28	0.00	1.03	0.59	0.00	0.00
Avail Cap(c_a), veh/h	109	934	418	1035	901	930	392	0	699	392	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	39.8	29.3	26.4	28.4	10.9	10.9	26.3	0.0	31.7	38.8	0.0	0.0
Incr Delay (d2), s/veh	11.8	8.3	1.1	9.5	0.1	0.1	1.7	0.0	41.8	8.9	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	0.4	9.2	4.1	10.4	2.2	2.3	2.2	0.0	11.9	0.9	0.0	0.0
LnGrp Delay(d),s/veh	51.5	37.6	27.4	37.9	11.0	11.0	28.1	0.0	73.5	47.7	0.0	0.0
LnGrp LOS	D	D	C	D	B	B	C		F	D		
Approach Vol, veh/h		980			1208			828			35	
Approach Delay, s/veh		35.6			29.9			67.6			47.7	
Approach LOS		D			C			E			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		22.5	27.0	24.8		7.2	5.8	46.0				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.0	24.5	21.5		18.0	5.0	41.0				
Max Q Clear Time (g_c+I1), s		20.0	21.3	18.8		3.6	2.6	6.5				
Green Ext Time (p_c), s		0.0	1.2	1.5		0.1	0.0	2.1				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			42.2									
HCM 2010 LOS			D									
<b>Notes</b>												












HCM 2010 Signalized Intersection Summary  
 9: Anza Blvd & Airport Blvd

04/01/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 						 	
Traffic Volume (veh/h)	329	174	21	277	299	98	79	155	116	66	144	119
Future Volume (veh/h)	329	174	21	277	299	98	79	155	116	66	144	119
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	358	189	23	301	325	107	86	168	126	72	157	129
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	363	553	66	335	417	135	384	403	342	143	316	270
Arrive On Green	0.20	0.17	0.17	0.19	0.16	0.16	0.22	0.22	0.22	0.21	0.21	0.21
Sat Flow, veh/h	1774	3182	382	1774	2631	852	1774	1863	1583	680	1501	1284
Grp Volume(v), veh/h	358	104	108	301	217	215	86	168	126	194	0	164
Grp Sat Flow(s),veh/h/ln	1774	1770	1795	1774	1770	1712	1774	1863	1583	1829	0	1636
Q Serve(g_s), s	17.2	4.4	4.5	14.2	10.1	10.3	3.4	6.6	5.8	8.0	0.0	7.5
Cycle Q Clear(g_c), s	17.2	4.4	4.5	14.2	10.1	10.3	3.4	6.6	5.8	8.0	0.0	7.5
Prop In Lane	1.00		0.21	1.00		0.50	1.00		1.00	0.37		0.78
Lane Grp Cap(c), veh/h	363	308	312	335	280	271	384	403	342	385	0	344
V/C Ratio(X)	0.99	0.34	0.35	0.90	0.77	0.79	0.22	0.42	0.37	0.50	0.00	0.48
Avail Cap(c_a), veh/h	363	397	403	338	372	360	384	403	342	385	0	344
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	0.00	1.00
Uniform Delay (d), s/veh	33.9	31.0	31.1	33.9	34.5	34.7	27.6	28.9	28.5	29.8	0.0	29.6
Incr Delay (d2), s/veh	43.5	0.6	0.7	25.1	7.1	8.6	1.4	3.2	3.0	4.6	0.0	4.7
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	12.7	2.2	2.3	9.3	5.4	5.5	1.8	3.8	2.8	4.5	0.0	3.9
LnGrp Delay(d),s/veh	77.4	31.7	31.7	59.0	41.6	43.2	29.0	32.0	31.6	34.5	0.0	34.3
LnGrp LOS	E	C	C	E	D	D	C	C	C	C		C
Approach Vol, veh/h		570			733			380			358	
Approach Delay, s/veh		60.4			49.2			31.2			34.4	
Approach LOS		E			D			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		23.0	20.7	19.4		22.5	22.0	18.0				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.5	16.3	19.2		18.0	17.5	18.0				
Max Q Clear Time (g_c+I1), s		8.6	16.2	6.5		10.0	19.2	12.3				
Green Ext Time (p_c), s		1.1	0.0	0.8		1.4	0.0	1.2				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			46.4									
HCM 2010 LOS			D									
<b>Notes</b>												

HCM 2010 Signalized Intersection Summary  
 10: US-101 NB Ramps & Airport Blvd

04/01/2020

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Traffic Volume (veh/h)	533	105	685	112	227	514		
Future Volume (veh/h)	533	105	685	112	227	514		
Number	4	14	3	8	5	12		
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		
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863		
Adj Flow Rate, veh/h	579	114	832	0	247	559		
Adj No. of Lanes	2	0	2	1	1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	709	139	974	511	492	873		
Arrive On Green	0.24	0.24	0.27	0.00	0.28	0.28		
Sat Flow, veh/h	3044	579	3548	1863	1774	1583		
Grp Volume(v), veh/h	347	346	832	0	247	559		
Grp Sat Flow(s),veh/h/ln	1770	1761	1774	1863	1774	1583		
Q Serve(g_s), s	12.0	12.1	14.4	0.0	7.6	15.9		
Cycle Q Clear(g_c), s	12.0	12.1	14.4	0.0	7.6	15.9		
Prop In Lane		0.33	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	425	423	974	511	492	873		
V/C Ratio(X)	0.81	0.82	0.85	0.00	0.50	0.64		
Avail Cap(c_a), veh/h	491	488	1121	588	492	873		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00		
Uniform Delay (d), s/veh	23.3	23.3	22.3	0.0	19.7	10.1		
Incr Delay (d2), s/veh	9.1	9.4	5.9	0.0	3.6	3.6		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	6.9	7.0	7.9	0.0	4.2	10.8		
LnGrp Delay(d),s/veh	32.4	32.7	28.3	0.0	23.3	13.7		
LnGrp LOS	C	C	C		C	B		
Approach Vol, veh/h	693			832	806			
Approach Delay, s/veh	32.5			28.3	16.6			
Approach LOS	C			C	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		22.5		20.1				22.3
Change Period (Y+Rc), s		4.5		4.5				4.5
Max Green Setting (Gmax), s		18.0		18.0				20.5
Max Q Clear Time (g_c+I1), s		17.9		14.1				16.4
Green Ext Time (p_c), s		0.0		1.5				1.4
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			25.5					
HCM 2010 LOS			C					
<b>Notes</b>								

# HCM Signalized Intersection Capacity Analysis

## 11: Peninsula Ave & N. Bayshore Blvd

04/01/2020



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↶	↷	↕↷	↶	↶	↕↕
Traffic Volume (vph)	255	91	736	582	227	873
Future Volume (vph)	255	91	736	582	227	873
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	0.93		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3305		1770	3539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1583	3305		1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	277	99	800	633	247	949
RTOR Reduction (vph)	0	79	171	0	0	0
Lane Group Flow (vph)	277	20	1262	0	247	949
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8				1	6
Permitted Phases		8	2			
Actuated Green, G (s)	15.9	15.9	35.3		13.0	52.8
Effective Green, g (s)	15.9	15.9	35.3		13.0	52.8
Actuated g/C Ratio	0.20	0.20	0.45		0.17	0.68
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	362	323	1501		296	2404
v/s Ratio Prot	c0.16				c0.14	0.27
v/s Ratio Perm		0.01	c0.38			
v/c Ratio	0.77	0.06	0.84		0.83	0.39
Uniform Delay, d1	29.1	24.9	18.7		31.3	5.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	9.3	0.1	5.8		18.0	0.5
Delay (s)	38.4	25.0	24.6		49.3	5.9
Level of Service	D	C	C		D	A
Approach Delay (s)	34.9		24.6			14.9
Approach LOS	C		C			B

Intersection Summary			
HCM 2000 Control Delay	22.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	77.7	Sum of lost time (s)	13.5
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

# HCM Signalized Intersection Capacity Analysis

## 12: Peninsula Ave/Coyote Point Dr & Airport Blvd

04/01/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	94	858	831	48	122	33
Future Volume (vph)	94	858	831	48	122	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	3433	1863	1863	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	3433	1863	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	102	933	903	52	133	36
RTOR Reduction (vph)	0	240	0	0	0	26
Lane Group Flow (vph)	102	693	903	52	133	10
Turn Type	Perm	pt+ov	Prot	NA	NA	Perm
Protected Phases		4 5	5	2	6	
Permitted Phases	4					6
Actuated Green, G (s)	15.5	39.6	19.6	43.1	19.0	19.0
Effective Green, g (s)	15.5	39.6	19.6	43.1	19.0	19.0
Actuated g/C Ratio	0.23	0.59	0.29	0.64	0.28	0.28
Clearance Time (s)	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	405	927	995	1187	523	444
v/s Ratio Prot		c0.44	c0.26	0.03	c0.07	
v/s Ratio Perm	0.06					0.01
v/c Ratio	0.25	0.75	0.91	0.04	0.25	0.02
Uniform Delay, d1	21.3	10.3	23.1	4.6	18.8	17.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	3.3	11.7	0.1	1.2	0.1
Delay (s)	21.6	13.6	34.8	4.6	20.0	17.7
Level of Service	C	B	C	A	B	B
Approach Delay (s)	14.4			33.1	19.5	
Approach LOS	B			C	B	

### Intersection Summary

HCM 2000 Control Delay	23.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	67.6	Sum of lost time (s)	13.5
Intersection Capacity Utilization	67.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

# Queues

## 3: Broadway/Airport Blvd & Old Bayshore Hwy

04/01/2020



Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	74	74	614	66	1303	676	3	167	98
v/c Ratio	0.36	0.35	0.34	0.24	0.91	0.29	0.03	0.23	0.22
Control Delay	42.2	42.0	1.0	42.5	37.2	8.9	45.0	33.0	2.9
Queue Delay	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0
Total Delay	42.2	42.0	1.0	42.5	38.4	8.9	45.0	33.0	2.9
Queue Length 50th (ft)	42	42	0	18	368	78	2	43	0
Queue Length 95th (ft)	88	87	14	41	#584	171	11	79	14
Internal Link Dist (ft)		573		269		426		518	
Turn Bay Length (ft)	360						210		115
Base Capacity (vph)	337	342	1914	687	1434	2303	98	729	444
Starvation Cap Reductn	0	0	0	0	38	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.22	0.32	0.10	0.93	0.29	0.03	0.23	0.22

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 4: Broadway & California Dr

04/01/2020



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	638	288	41	309	146	7	601	132	376	388
v/c Ratio	0.82	0.42	0.28	0.53	0.34	0.03	0.66	0.73	0.48	0.43
Control Delay	37.7	20.4	38.7	31.5	3.7	22.7	28.8	58.7	18.8	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.6	1.2
Total Delay	37.7	20.4	38.7	31.5	3.7	22.7	28.8	58.7	39.3	4.8
Queue Length 50th (ft)	140	104	18	69	0	2	127	60	120	0
Queue Length 95th (ft)	#240	171	50	106	19	12	198	#157	218	51
Internal Link Dist (ft)		329		578			73		137	
Turn Bay Length (ft)	225		95		350	50				
Base Capacity (vph)	820	757	147	869	543	259	916	181	788	893
Starvation Cap Reductn	0	0	0	0	0	0	0	0	405	297
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.38	0.28	0.36	0.27	0.03	0.66	0.73	0.98	0.65

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 5: Broadway & Carolan Dr

04/09/2020



Lane Group	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	121	638	1286	381	845
v/c Ratio	0.33	0.88	0.76	0.85	0.25
Control Delay	24.0	21.2	24.0	44.8	5.5
Queue Delay	0.0	0.0	48.6	0.0	0.0
Total Delay	24.0	21.2	72.6	44.8	5.5
Queue Length 50th (ft)	42	48	177	153	51
Queue Length 95th (ft)	83	#235	#240	#302	72
Internal Link Dist (ft)	312		137		329
Turn Bay Length (ft)		200		125	
Base Capacity (vph)	488	799	1688	472	3325
Starvation Cap Reductn	0	0	522	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.25	0.80	1.10	0.81	0.25

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 6: Broadway & Rollins Rd

04/01/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	111	87	111	89	164	333	276	1531	215	855	278
v/c Ratio	0.42	0.27	0.28	0.61	0.50	0.71	0.55	0.74	0.64	0.47	0.37
Control Delay	36.9	26.4	3.9	52.0	30.4	17.8	32.0	20.8	40.9	19.2	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.9	26.4	3.9	52.0	30.4	17.8	32.0	20.8	40.9	19.2	4.5
Queue Length 50th (ft)	23	32	0	37	63	39	54	192	45	101	0
Queue Length 95th (ft)	50	68	20	#111	115	117	98	292	#99	160	51
Internal Link Dist (ft)		340			251			329		336	
Turn Bay Length (ft)	130		110			160	90		200		155
Base Capacity (vph)	265	511	545	147	523	610	573	2071	338	1830	747
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.17	0.20	0.61	0.31	0.55	0.48	0.74	0.64	0.47	0.37

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Queues

7: Broadway & US-101 SB Ramps

04/01/2020



Lane Group	EBT	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	540	721	1490	427	160	599
v/c Ratio	0.95	0.29	0.95	0.70	0.23	0.84
Control Delay	58.3	5.4	43.7	17.5	31.2	47.0
Queue Delay	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay	58.3	5.4	43.8	17.5	31.2	47.0
Queue Length 50th (ft)	297	57	316	96	39	173
Queue Length 95th (ft)	#500	77	#425	230	67	#260
Internal Link Dist (ft)	446		336			426
Turn Bay Length (ft)		200		105		
Base Capacity (vph)	570	2522	1570	613	690	711
Starvation Cap Reductn	0	0	3	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.29	0.95	0.70	0.23	0.84

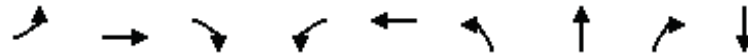
Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 8: US-101 NB Ramp & Old Bayshore Hwy

04/01/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	9	247	98	908	500	340	329	311	29
v/c Ratio	0.08	0.49	0.27	0.77	0.27	0.73	0.72	0.49	0.18
Control Delay	38.9	34.1	2.8	29.5	12.0	38.4	32.9	6.4	33.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.9	34.1	2.8	29.5	12.0	38.4	32.9	6.4	33.0
Queue Length 50th (ft)	4	52	0	168	50	134	110	0	10
Queue Length 95th (ft)	20	101	8	#362	136	#349	#317	67	38
Internal Link Dist (ft)		386			573		242		94
Turn Bay Length (ft)	205		170			130			
Base Capacity (vph)	118	855	507	1176	1881	463	459	639	434
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.29	0.19	0.77	0.27	0.73	0.72	0.49	0.07

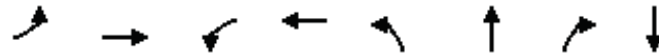
### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 9: Anza Blvd & Airport Blvd

04/01/2020



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	151	282	176	473	65	191	208	234
v/c Ratio	0.88	0.41	1.02	0.68	0.16	0.45	0.39	0.27
Control Delay	81.5	27.3	114.5	33.1	25.4	29.7	6.4	12.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.5	27.3	114.5	33.1	25.4	29.7	6.4	12.4
Queue Length 50th (ft)	73	59	-89	107	26	82	0	20
Queue Length 95th (ft)	#185	93	#219	156	61	152	51	51
Internal Link Dist (ft)		477		433		347		50
Turn Bay Length (ft)	90		210					
Base Capacity (vph)	172	825	172	825	403	424	538	854
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.34	1.02	0.57	0.16	0.45	0.39	0.27

### Intersection Summary

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

# Queues

## 10: US-101 NB Ramps & Airport Blvd

04/01/2020



Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	177	762	785	382	687
v/c Ratio	0.44	0.91	0.92	0.97	0.52
Control Delay	33.8	36.2	37.7	73.4	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	33.8	36.2	37.7	73.4	2.8
Queue Length 50th (ft)	40	352	367	193	29
Queue Length 95th (ft)	71	#637	#657	#381	69
Internal Link Dist (ft)	300		611	186	
Turn Bay Length (ft)				230	230
Base Capacity (vph)	783	840	853	393	1320
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.23	0.91	0.92	0.97	0.52

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 11: Peninsula Ave & N. Bayshore Blvd

04/01/2020



Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	265	370	1475	51	796
v/c Ratio	0.68	0.76	0.76	0.38	0.35
Control Delay	33.4	22.9	16.3	38.8	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.3
Total Delay	33.4	22.9	16.3	38.8	6.7
Queue Length 50th (ft)	99	69	246	20	67
Queue Length 95th (ft)	170	159	#430	54	111
Internal Link Dist (ft)	179		604		286
Turn Bay Length (ft)				100	
Base Capacity (vph)	489	568	1952	136	2283
Starvation Cap Reductn	0	0	0	0	797
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.54	0.65	0.76	0.38	0.54

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 12: Peninsula Ave/Coyote Point Dr & Airport Blvd

04/01/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	22	990	1489	48	17	10
v/c Ratio	0.10	0.72	0.90	0.03	0.04	0.03
Control Delay	31.4	3.8	29.4	3.3	27.4	15.7
Queue Delay	0.0	0.0	46.5	0.0	0.0	0.0
Total Delay	31.4	3.8	75.9	3.3	27.4	15.7
Queue Length 50th (ft)	10	1	314	4	6	0
Queue Length 95th (ft)	30	35	#584	17	25	13
Internal Link Dist (ft)	611			286	438	
Turn Bay Length (ft)			85			
Base Capacity (vph)	400	1381	1657	1423	421	365
Starvation Cap Reductn	0	10	368	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.72	1.16	0.03	0.04	0.03

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 3: Broadway/Airport Blvd & Old Bayshore Hwy

04/01/2020



Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	111	111	1218	99	1099	410	9	329	164
v/c Ratio	0.34	0.34	0.68	0.32	1.04	0.21	0.09	0.41	0.34
Control Delay	34.6	34.5	5.2	36.9	69.3	10.8	42.9	31.6	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.6	34.5	5.2	36.9	69.3	10.8	42.9	31.6	7.3
Queue Length 50th (ft)	56	56	48	25	-363	53	5	85	0
Queue Length 95th (ft)	111	111	82	50	#504	104	21	129	50
Internal Link Dist (ft)		573		269		426		518	
Turn Bay Length (ft)	360						210		115
Base Capacity (vph)	353	357	1807	721	1061	1983	103	805	486
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.31	0.67	0.14	1.04	0.21	0.09	0.41	0.34

### Intersection Summary

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

# Queues

## 4: Broadway & California Dr

04/01/2020



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	538	297	51	287	209	22	341	110	637	678
v/c Ratio	0.81	0.48	0.32	0.49	0.47	0.14	0.31	0.65	0.77	0.69
Control Delay	38.0	21.9	35.7	28.7	7.5	22.9	18.7	51.4	25.4	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	52.8	3.9
Total Delay	38.0	21.9	35.7	28.7	7.5	22.9	18.7	51.4	78.2	12.1
Queue Length 50th (ft)	110	104	20	58	0	7	53	45	213	40
Queue Length 95th (ft)	#200	175	55	92	46	26	94	#123	#432	163
Internal Link Dist (ft)		329		578			73		137	
Turn Bay Length (ft)	225		95		350	50				
Base Capacity (vph)	681	693	166	937	579	158	1104	169	822	986
Starvation Cap Reductn	0	0	0	0	0	0	0	0	337	223
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.43	0.31	0.31	0.36	0.14	0.31	0.65	1.31	0.89

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 5: Broadway & Carolan Dr

04/09/2020



Lane Group	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	89	490	962	609	1214
v/c Ratio	0.35	0.76	0.66	0.90	0.33
Control Delay	31.2	11.3	24.9	39.5	4.2
Queue Delay	0.0	0.0	2.6	2.6	0.0
Total Delay	31.2	11.3	27.5	42.0	4.2
Queue Length 50th (ft)	36	0	130	229	52
Queue Length 95th (ft)	75	79	#201	#481	106
Internal Link Dist (ft)	312		137		329
Turn Bay Length (ft)		200		125	
Base Capacity (vph)	439	761	1460	744	3718
Starvation Cap Reductn	0	0	363	60	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.20	0.64	0.88	0.89	0.33

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 6: Broadway & Rollins Rd

04/01/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	280	314	229	34	68	264	100	1162	545	1650	118
v/c Ratio	0.80	0.65	0.40	0.29	0.22	0.54	0.43	0.78	0.83	0.73	0.15
Control Delay	52.7	32.8	6.3	41.9	27.5	8.3	41.4	29.2	43.2	20.9	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0
Total Delay	52.7	32.8	6.3	41.9	27.5	8.3	41.4	29.2	43.2	21.2	2.6
Queue Length 50th (ft)	70	140	2	16	28	0	24	191	134	254	0
Queue Length 95th (ft)	#139	226	54	44	60	57	49	250	#224	326	22
Internal Link Dist (ft)		340			251			329		336	
Turn Bay Length (ft)	130		110			160	90		200		155
Base Capacity (vph)	352	518	601	119	452	584	231	1498	672	2274	787
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	160	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.61	0.38	0.29	0.15	0.45	0.43	0.78	0.81	0.78	0.15

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 7: Broadway & US-101 SB Ramps

04/01/2020



Lane Group	EBT	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	321	1112	1296	376	409	1201
v/c Ratio	0.88	0.56	0.93	0.62	0.34	0.96
Control Delay	61.5	14.7	43.4	11.7	22.4	47.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.5	14.7	43.4	11.7	22.4	47.9
Queue Length 50th (ft)	178	169	272	40	87	347
Queue Length 95th (ft)	#327	217	#370	147	124	#492
Internal Link Dist (ft)	446		336			426
Turn Bay Length (ft)		200		105		
Base Capacity (vph)	364	1977	1396	606	1209	1246
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.56	0.93	0.62	0.34	0.96

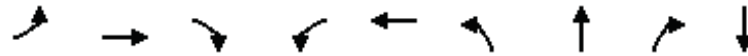
### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 8: US-101 NB Ramp & Old Bayshore Hwy

04/01/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	13	763	204	848	360	144	344	338	35
v/c Ratio	0.12	0.85	0.38	0.85	0.18	0.40	0.61	0.58	0.23
Control Delay	43.5	41.8	8.5	39.5	10.2	34.4	10.1	8.2	37.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.5	41.8	8.5	39.5	10.2	34.4	10.1	8.2	37.7
Queue Length 50th (ft)	7	218	10	235	46	74	9	0	16
Queue Length 95th (ft)	26	#335	65	#357	92	137	98	76	45
Internal Link Dist (ft)		386			573		242		94
Turn Bay Length (ft)	205		170			130			
Base Capacity (vph)	104	900	538	995	2027	357	564	586	383
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.85	0.38	0.85	0.18	0.40	0.61	0.58	0.09

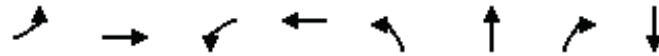
### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 9: Anza Blvd & Airport Blvd

04/01/2020



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	358	212	301	432	77	177	126	358
v/c Ratio	1.00	0.33	0.91	0.70	0.22	0.47	0.29	0.46
Control Delay	86.0	30.0	67.6	36.9	31.0	35.3	7.7	23.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.0	30.0	67.6	36.9	31.0	35.3	7.7	23.3
Queue Length 50th (ft)	~200	50	163	105	36	90	0	62
Queue Length 95th (ft)	#392	81	#327	155	80	162	44	108
Internal Link Dist (ft)		477		433		347		50
Turn Bay Length (ft)	90		210					
Base Capacity (vph)	357	781	332	742	358	376	437	774
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.00	0.27	0.91	0.58	0.22	0.47	0.29	0.46

### Intersection Summary

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

# Queues

## 10: US-101 NB Ramps & Airport Blvd

04/01/2020



Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	693	432	435	247	559
v/c Ratio	0.79	0.88	0.87	0.53	0.56
Control Delay	30.9	45.5	44.2	27.0	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	30.9	45.5	44.2	27.0	9.5
Queue Length 50th (ft)	138	185	186	92	111
Queue Length 95th (ft)	198	#350	#350	159	191
Internal Link Dist (ft)	300		611	186	
Turn Bay Length (ft)				230	230
Base Capacity (vph)	934	505	513	467	995
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.74	0.86	0.85	0.53	0.56

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 11: Peninsula Ave & N. Bayshore Blvd

04/01/2020



Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	277	99	1433	247	949
v/c Ratio	0.77	0.25	0.86	0.83	0.39
Control Delay	44.1	7.6	21.9	56.9	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.6
Total Delay	44.1	7.6	21.9	56.9	6.9
Queue Length 50th (ft)	127	0	266	119	97
Queue Length 95th (ft)	#217	37	#426	#242	134
Internal Link Dist (ft)	179		604		286
Turn Bay Length (ft)				100	
Base Capacity (vph)	417	449	1671	308	2404
Starvation Cap Reductn	0	0	0	0	953
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.66	0.22	0.86	0.80	0.65

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

# Queues

## 12: Peninsula Ave/Coyote Point Dr & Airport Blvd

04/01/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	102	933	903	52	133	36
v/c Ratio	0.25	0.80	0.91	0.04	0.25	0.08
Control Delay	22.5	10.1	39.2	5.5	21.5	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.5	10.1	39.2	5.5	21.5	7.8
Queue Length 50th (ft)	35	73	195	8	45	0
Queue Length 95th (ft)	72	246	#308	19	87	20
Internal Link Dist (ft)	611			286	438	
Turn Bay Length (ft)			85			
Base Capacity (vph)	475	1161	994	1186	523	470
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.80	0.91	0.04	0.25	0.08

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.