Appendix TRA

Transportation Study and Supplemental Memorandum

FEHR PEERS

Transportation Study for the

Millbrae Moxy Hotel Project

December 2019

Prepared for Starwood Capital Group

SF19-1032

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INTRODUCTION

This transportation study presents the results of a transportation assessment for the proposed development of the Millbrae Moxy Hotel (proposed project or project), including a project description, project trip generation, intersection analysis, assessment of other modes, parking analysis, and recommended improvement measures. The recommendations included in this study are to inform decision makers of the transportation-related aspects of the project.

The analysis was conducted following City of Millbrae guidelines to identify effects of the project on the surrounding roadway system. Based on this assessment, the project is estimated to generate approximately 70 to 90 vehicle trips during the peak hours of the surrounding roadway system. This small amount of traffic is not expected to materially affect intersection operations. Additional improvement measures are recommended to further reduce the project trip generation and parking demand on site.

PROJECT DESCRIPTION

The proposed Moxy Hotel (project) will be located at 401 East Millbrae Avenue, adjacent to US 101 and near the San Francisco International Airport (SFO) in the City of Millbrae, California. The site currently contains two hotels, the Aloft San Francisco Airport and the Westin San Francisco Airport, on two parcels that total approximately 618,000 square feet (341,881 square feet for the Aloft site and 276,119 square feet for the Westin site). The two existing hotels include 668 rooms combined, with construction underway to increase the total number of rooms to 719. The existing construction is not included in this analysis since it has already been approved by the City and is assumed as part of the near-term baseline scenario. The project proposes to construct a new six-story, 71,649 square-foot hotel containing 209 guest rooms on an underutilized portion of the Aloft property. The proposed project would not construct additional parking. Instead, the hotel will utilize existing parking spaces at the Aloft and Westin hotels.

Table 1 summarizes the existing and proposed uses at the project site. Figure 1 displays the project study area.

TABLE 1: PROJECT DESCRIPTION

Land Use Designation	Existing Use	Net New Construction	Project Total
Hotel Rooms	*298 Aloft* *421 Westin* -- 719 Total	-- -- *209 Moxy* 209 Total	*298 Aloft* *421 Westin* *209 Moxy* 928 Total
Parking Spaces	893 Total	-10 space reduction	883 Total

Sources: Starwood Capital Group, 2019.

Figure 1

Study Area

METHODOLOGY

DATA COLLECTION

Fehr & Peers collected 7-day, 24-hour roadway and driveway counts at the five locations listed below during October 2019 to determine the periods of peak traffic volumes near the project site and the traffic generated by the existing hotels on the project site.

1. Project Driveway at Old Bayshore Highway (north)
2. Project Driveway at Old Bayshore Highway (south)
3. Project Driveway at Millbrae Avenue
4. Millbrae Avenue near Old Bayshore Highway
5. Old Bayshore Highway near Millbrae Avenue

Following collection of the above roadway and driveway counts, we collected detailed intersection turning movement counts at four study intersections during the two-hour AM and PM peak periods on Thursday, November 7, 2019 based on the 7-day roadway tube counts. The intersection turning movement counts included vehicle, pedestrian, bicycle, and heavy vehicle counts. Intersection turning movement counts and 7-day roadway counts and peak period intersection turning movement counts are included in Appendix A. Local schools were in session and we did not observe any unusual traffic events during the time that the counts were collected. The four study intersections included:

1. Millbrae Avenue / Old Bayshore Highway / South McDonnell Road
2. Millbrae Avenue / US 101 NB Ramps
3. Millbrae Avenue / US 101 SB Ramps
4. Millbrae Avenue / Rollins Road

We also conducted a field visit during the peak periods to observe roadway operations and to verify existing lane configurations, intersection control devices, traffic signal timings, vehicle queues, and other roadway characteristics. During this field visit, we also observed circulation, parking, pedestrian, bicycle, truck loading, passenger loading, and transit conditions near the project site.

Lastly, this study uses parking occupancy data collected at the Westin and Aloft hotels from 2018 as part of *Parking Study for the Proposed Millbrae Moxy Hotel* (Fehr & Peers, 2019), which is contained in Appendix B.

LEVEL OF SERVICE

This study analyzes traffic operations using level of service (LOS) as the primary measure of performance. Motorized vehicle LOS is a qualitative measure of traffic flow from the perspective of motorists and is an indication of the comfort and convenience associated with driving. Typical factors that affect motorized vehicle LOS include speed, travel time, traffic interruptions, and freedom to maneuver. Empirical LOS criteria and methods of calculation are documented in the Highway Capacity Manual (HCM) published by the Transportation Research Board of the National Academies of Science (Transportation Research Board, 2017). The HCM defines six levels of service ranging from LOS A (representing free-flow vehicular traffic conditions with little to no congestion) to LOS F (oversaturated conditions where traffic demand exceeds capacity resulting in long queues and delays). The LOS definitions and calculations contained in the HCM are the prevailing measurement standard used throughout the United States and are used in this study. Table 2 summarizes intersection LOS criteria for signalized intersections.

TABLE 2: SIGNALIZED INTERSECTION LOS CRITERIA

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

Source: *Highway Capacity Manual 6th Edition*, Transportation Research Board of the National Academies of Science, 2017.

Intersection operations were analyzed using SimTraffic, the simulation add-on to Trafficware's Synchro 9 software package. SimTraffic considers the effects of signal coordination, vehicle queue spillbacks between intersections, and variation in driver and vehicle types. To ensure that the SimTraffic model accurately reflects operating conditions at the study intersections, the SimTraffic model was calibrated to the observed peak hour turn movement volumes and queue lengths using model inputs related to driver behavior.

SIGNIFICANCE CRITERIA

The City of Millbrae has specific significance criteria outlined in their General Plan to measure a project's impact on the environment. The impact criteria listed in this section are specific to transportation impacts. For this study, we have used the significance criteria not to identify significant impacts, but rather to assess the overall effect of the project on the transportation network in a way that is convenient and familiar to Millbrae's decision makers.

Intersection Operations

The City of Millbrae General Plan policies establish LOS D as the minimum acceptable threshold for signalized and unsignalized intersections. The minimum LOS D operating standard is also consistent with other jurisdictions in San Mateo County. Based on this policy, the project's effect on intersection operations would be considered unacceptable if the project would:

- Cause an intersection operating acceptably (LOS D or better) without the project to operate at LOS E or F;
- Increase the average delay at a signalized intersection operating at an unacceptable level (LOS E or F) by five or more seconds;

Parking Requirements

The City of Millbrae's Zoning Ordinance Code 10.05.2100 stipulates that hotel uses are required to provide one parking space for every guest room.

Transit, Bicycle, and Pedestrian Facilities

The project's effect on transit, pedestrian, or bicycle facilities would be considered unacceptable if the project would:

- Conflict with any existing or approved pedestrian, transit, and/or bicycle facilities or services;
- Cause the transit ridership demand to increase to levels greater than available capacity;
- Reduce access to transit service or create unsafe access for transit passengers;

- Cause pedestrian, transit, and/or bicycle facilities to be frequently blocked by cars or other potential safety obstructions/hazards;
- Cause vehicles to cross pedestrian or bicycle facilities on a regular basis at driveway entrances lacking adequate sight distance or warning systems;
- Encourage pedestrians to cross roads in undesignated areas.

EXISTING TRANSPORTATION CONDITIONS

This section provides a description of the existing multi-modal transportation system.

ROADWAY FACILITIES

US Highway 101 (US 101) is an eight-lane freeway located adjacent to the project site. US 101 connects San Francisco with the Peninsula and the South Bay to the south and with the North Bay to the north via the Golden Gate Bridge. US 101 connects to I-280 north of Millbrae via I-380. Access to US 101 is provided by on and off ramps along Millbrae Avenue very near the project site.

El Camino Real (State Route 82) is a major north-south arterial located approximately one half mile west of the project site that extends from San Francisco to the north to San Jose to the south, providing alternative regional access to the project site. El Camino Real has six lanes, a median that provides left-turn bays at most intersections, and on-street parking through Millbrae near the project site.

Millbrae Avenue is a major east-west arterial that extends from Bayshore Highway to El Camino Real. West of El Camino Real, Millbrae Avenue is a local street until its terminus near Vallejo Drive and I-280. Millbrae Avenue connects residential areas west of Millbrae to El Camino Real and US 101. Millbrae Avenue crosses over and provides a regional connection to US 101 at an interchange adjacent to the project site. Millbrae Avenue varies in width, with four lanes and a median that provides left-turn pockets at major intersections near the project site. Millbrae Avenue provides the main access driveway for the project which allows right- and left-turn access in to the project site but right-turn out access only.

Old Bayshore Highway is a north-south arterial that extends from Millbrae Avenue adjacent to the project site to the Broadway interchange with US 101 to the south. Near the project site, Old Bayshore Highway has four lanes with a median for left-turn bays at intersections and key driveways. Old Bayshore Highway provides one major access driveway for the project site and two minor access points.

South McDonnell Road is a frontage road running parallel to US 101 from the intersection of Old Bayshore Highway and Millbrae Avenue adjacent to the project site to the San Francisco International Airport (SFO). South McDonnell Road provides direct access to several SFO parking lots and Transportation Network Company (TNC) (e.g. Uber/Lyft) staging lots. South McDonnell Road is generally two lanes with left-turn bays for major driveways.

Rollins Road is a north-south arterial that extends south from the station to Broadway in Burlingame, providing connections to US 101 and El Camino Real via Millbrae Avenue and Broadway for commercial land uses along the corridor. Near the station, Rollins Road has four lanes with on-street parking.

EXISTING SITE ACCESS AND CIRCULATION

The two existing hotels on the project site are currently served by two major driveways and two minor driveways. The major driveway on Millbrae Avenue is located approximately 250 feet west of the intersection with Old Bayshore Highway and serves as the major access point for the Aloft Hotel. The driveway is side-street stop-controlled where driveway traffic must yield to Millbrae Avenue through traffic. The Millbrae driveway has a turn pocket serving westbound left-turning vehicles entering the project site. Currently, vehicles leaving the site are restricted to making a right turn only. Vehicles destined for US 101 must then make a U-turn at the Old Bayshore intersection. The major driveway on Old Bayshore Highway is located approximately 400 feet south of the intersection with Millbrae Avenue and serves as the major access point for the Westin Hotel. The driveway is signalized with an actuated pedestrian phase to cross Old Bayshore Highway. Two minor driveways are located on Old Bayshore Highway further south from the main Bayshore driveway. They are limited to right-in right-out movements only and do not provide direct access to the front of either hotel. All driveways connect to a shared parking area for both hotels. Passenger loading was observed to occur in front of each hotel at the designated loading zones near the lobbies.

INTERSECTION OPERATIONS

Figure 2 displays the existing AM and PM peak hour traffic volumes, lane configurations, and traffic controls at the four study intersections. Table 3 displays the existing AM and PM peak hour delay and LOS at the four study intersections (refer to Appendix C for detailed calculations).

TABLE 3: INTERSECTION LOS – EXISTING CONDITIONS

Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS
1. Millbrae Avenue / Old Bayshore Highway / South McDonnell Road	Signal	15	B	29	C
2. Millbrae Avenue / US 101 NB Ramps	Signal	15	B	17	B
3. Millbrae Avenue / US 101 SB Ramps	Signal	25	C	25	C
4. Millbrae Avenue / Rollins Road	Signal	42	D	38	D

TABLE 3: INTERSECTION LOS – EXISTING CONDITIONS

Source: Fehr & Peers, 2019.
Notes:
1. For signalized intersections, delay (sec/veh) and LOS is reported for the overall intersection.

As seen in Table 3, all intersections currently operate acceptably at LOS D or better during the AM and PM peak hours. As noted during field observations and confirmed in the analysis simulation, there was some vehicle queuing that occurred during the peak hours at Rollins Road and at the freeway off-ramps, however most queues cleared each cycle and did not cause significant upstream bottlenecks. Freeway off-ramp queues did not extend past the gore points.

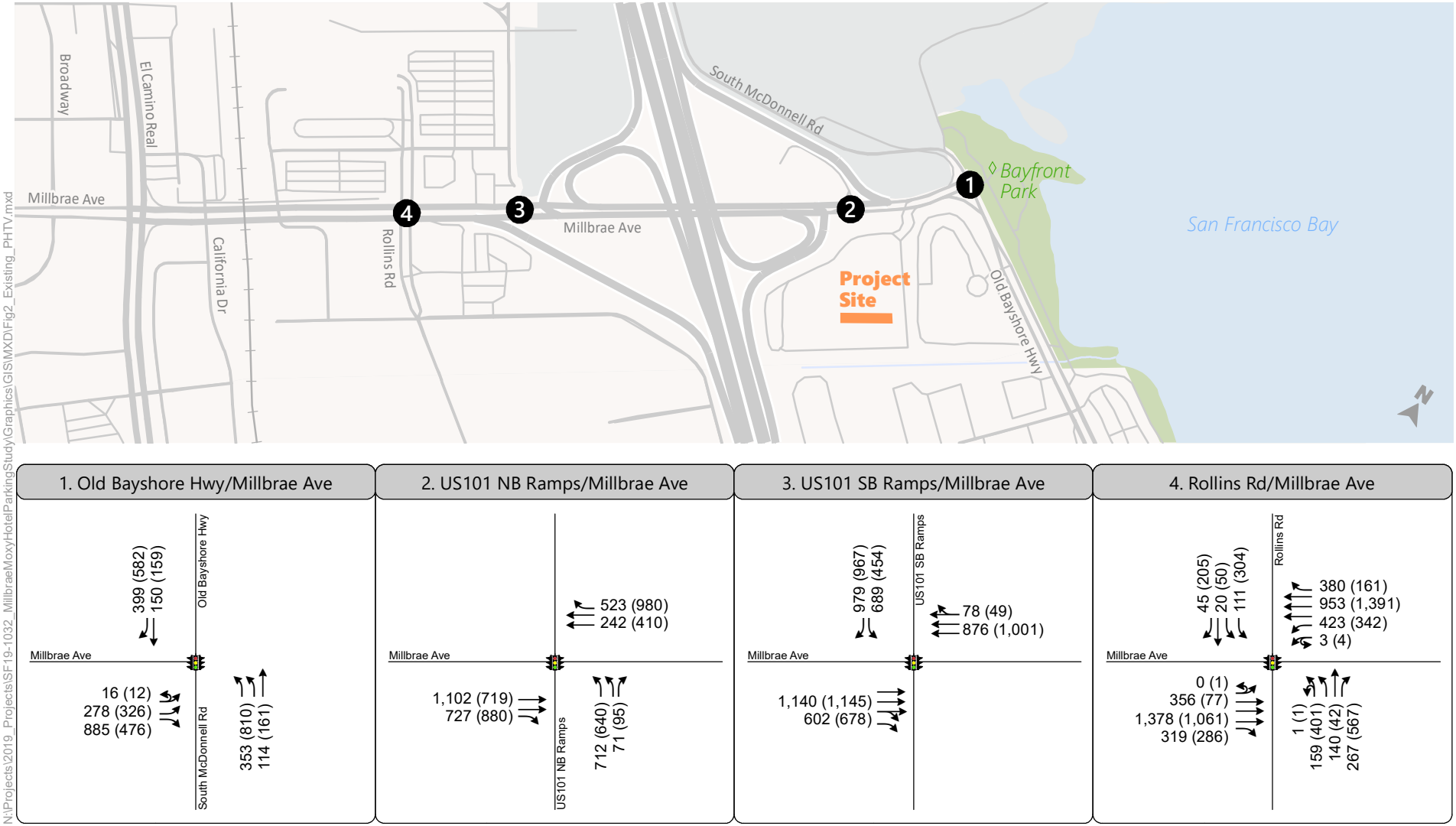


Figure 2

Existing Conditions
Peak Hour Intersection Turn Movement Volumes

PARKING

The project would be constructed within an existing parking lot that is shared by the Aloft and Westin hotels. The existing parking supply of the shared lot is 893 spaces.

The existing parking demand is documented in *Parking Study for the Proposed Millbrae Moxy Hotel* (Fehr & Peers, 2019), which is contained in Appendix B. As part of this study, parking occupancy data collected on Wednesday, June 6, 2018 found that guest vehicles occupied 545 spaces out of a total 893 parking spaces available. Additionally, Westin employees used 10 spaces and Aloft employees used four spaces. During this period, 640 of the 668 total hotel rooms were occupied, which equates to a room occupancy rate of 96 percent. This represents a guest parking demand rate of 0.85 spaces per occupied room, suggesting that while demand for rooms is high at the existing hotels, not every room utilizes a parking space. As noted above, the two existing hotels are in the process of expanding from 668 to 719 total rooms. Based on parking demand data collected in 2018, the expected on-site hotel guest parking demand for the two existing hotels with 100 percent hotel room occupancy at 719 rooms would be 611 spaces. This parking demand rate was also compared to parking occupancy data at other Moxy hotels provided by Starwood Capital Group. The data suggested that a 0.85 demand rate calculated from the 2018 data yields a conservative parking demand that is more representative of the peak demand rather than typical demand.

Since the parking spaces are not fully occupied, the hotels provide their surplus spaces for other uses. At both the Aloft and the Westin, Park 'N Fly shuttle customers may park in surplus spaces and leave their vehicles at the hotel as a form of long-term airport parking. Additionally, the Aloft sometimes leases additional unused spaces to a rental car company. The number of rental car spaces may fluctuate in the future depending on the lease terms Aloft sets with a rental car company. If parking demand for hotel guests were to increase, the hotels would scale back or eliminate the other uses for on-site spaces.

The existing parking supply of 893 spaces for the two hotels (668 guest rooms; 719 guest rooms with additions) meets the City of Millbrae's zoning requirements of one parking space for every guest room.

PEDESTRIAN FACILITIES

Direct pedestrian access to the project site is provided by Old Bayshore Highway and Millbrae Avenue; however, these busy roadways can be intimidating for pedestrians due to the narrow and poorly maintained sidewalks, lack of buffer from the fast-moving traffic, and the large crossing distances at intersections spaced far apart. The speed limit along Millbrae Avenue is 35 miles per hour in the study area, but field observations indicate that traffic coming from or heading to US 101 frequently exceeds the posted speed

limit. Some pedestrians with limited mobility may have trouble fully crossing nearby intersections within the designated green time and intersections lack median refuges for pedestrians to safely wait.

Bayfront Park includes walking pathways and the Bay Trail and is accessible to pedestrians by crossing at one of the signalized intersections on Old Bayshore Highway. Old Bayshore Highway and the Bay Trail provide direct pedestrian access to some retail and restaurant uses within one mile of the project site.

In addition to Old Bayshore Highway and Millbrae Avenue, US 101 serves as a barrier to convenient and comfortable pedestrian access between the project site and destinations to the west of US 101 such as retail, restaurants, and the Millbrae Multimodal Transit Station (Millbrae Station).

BICYCLING FACILITIES

Millbrae's temperate climate and flat terrain is conducive for bicycling. However, the lack of continuous bicycle facilities and the heavily trafficked auto-oriented streets in the project vicinity make bicycling challenging and uncomfortable, even for the most confident riders. Busy roadways that dominate the area, such as Millbrae Avenue, Rollins Road, and US 101, create significant barriers to bicycling.

Bikeway planning and design in the City of Millbrae generally relies on the guidelines and design standards established by Caltrans as documented in "Chapter 1000: Bikeway Planning and Design" of the Highway Design Manual (5th Edition, California Department of Transportation, January 2001). These standards provide for three (3) distinct types of bikeway facilities, which are described below.

- **Multi-Use Path (Class I)** are a completely separate right-of-way designated for the exclusive use of bicyclists and pedestrians with minimal vehicle and pedestrian cross-flow. Class I paths are for non-motorized use only.
- **Bike Lanes (Class II)** are a portion of roadway designated by striping, signage, and pavement markings for the preferential or exclusive use of bicyclists. Bike lanes are generally appropriate for major arterials and collector roadways. They are generally at least five (5) feet wide.
- **Bike Routes (Class III)** are streets designated for shared use with pedestrians or motor vehicles by signs or pavement markings. Shared lanes are appropriate for roads with low speeds and traffic volumes. They can also be used for short stretches along Class II bikeways where there is insufficient right of way for a separated bicycle lane.

Figure 3 provides a map of existing and proposed bicycle facilities in the immediate vicinity of the project.

The project is situated close to the Bay Trail, which runs along the Bay coastline and provides regional bicycle access. This paved, multiuse trail is located east of Old Bayshore Highway and is 10- to 12-feet wide, with two (2) feet of additional clear shoulder width on both sides and 14- to 16-feet clearance to the nearest

roadway. The Bay Trail ends at Millbrae Avenue and continues north as Class II bike lanes on South McDonnell Road. In addition to the Bay Trail, Old Bayshore Highway is designated as a Class III bike route.

Other than these two facilities, there is minimal bicycle infrastructure within the vicinity of the project. There are no designated bicycle facilities that connect the project site with areas west of US 101, including Millbrae Station. To access these areas, bicyclists must ride in the wide curb travel lanes with fast-moving cars.

Bicycle parking is also limited in the study area. Some short-term bicycle parking facilities are located at the front of the existing Westin hotel. Additionally, Millbrae Station has a mix of short and long-term bicycle parking facilities, however most of these facilities are located at the west entrance and appear to be largely unused. The east entrance has one bicycle rack for short-term parking. It is unclear from the proposed project's design plans if bicycle parking will be provided for guests or employees.

TRANSIT FACILITIES

The project study area is served by three major transit providers: BART, Caltrain, and the San Mateo County Transit District (SamTrans). BART provides regional rail service, Caltrain provides commuter rail service along the peninsula, and SamTrans provides local and regional bus service. Transit service (bus routes, major bus stops and the BART and Caltrain station) is shown on Figure 4.

SamTrans provides direct bus service to the project site via two local routes: Route 397 and Route 292. Route 292 is a north-south bus line that provides express regional transit service between Downtown San Francisco, Hillsdale, and the San Francisco International Airport. The route operates with 15-minute headways during peak periods. The route stops on Old Bayshore Highway a quarter mile southeast of the project site. Route 397 is a north-south bus line that provides express, late night regional transit service between Downtown San Francisco and Palo Alto primarily via El Camino Real. The route operates every night from 1:00 AM to 6:00 AM with one-hour headways. The route stops at the Millbrae Station. There is also a northbound stop located at the intersection of El Camino Real and Murchison Drive.

Millbrae Station is approximately a half mile west of the project site and is the only station providing direct intermodal connection between BART and Caltrain. Millbrae Station is the southern terminus of the BART Richmond-Millbrae Line and the SFO Airport-Millbrae-Antioch Line and provides fast and frequent service to many parts of the Bay Area, including downtown San Francisco, downtown Oakland, and the San Francisco International Airport. BART provides service via Millbrae Station from 4:00 AM to 12:00 AM on weekdays with typical headways (frequency of service) of 15 minutes during peak and mid-day hours. Caltrain provides service via Millbrae Station from 5:15 AM to 12:00 AM on weekdays with eight limited and Baby Bullet trains in the AM peak and one local, seven limited, and six Baby Bullet trains in the PM peak.

Figure 3

Existing Bicycle Facilities

Figure 4

Existing Transit Facilities

PROJECT TRAVEL DEMAND

This section analyzes the project's trip generation and distribution characteristics, as well as the project's parking generation.

TRIP GENERATION

This section analyzes the trip generation of the existing hotel uses and develops trip rates for the proposed project.

Existing Hotel Trip Generation

The existing trip generation rates of the Westin and Aloft hotels were calculated using the traffic data collected in October 2019 at the following project driveways:

- Project Driveway at Old Bayshore Highway (north)
- Project Driveway at Old Bayshore Highway (south)
- Project Driveway at Millbrae Avenue

For purposes of the trip generation analysis, this study uses the existing hotel uses presented in Table 1 to estimate the site's existing weekday AM and PM peak hour trip generation rates during the peak hours of adjacent street traffic. Table 4 presents the existing trip rate and trip generation for the site.

TABLE 4: EXISTING HOTEL TRIP GENERATION

Time Period	Hotel Rooms	Observed Traffic Volume			Observed Trip Generation Rate		
		Total	In	Out	Total	In	Out
AM Peak Hour (7:45-8:45)	719	297	146	151	0.41	49%	51%
PM Peak Hour (4:15-5:15)		253	113	140	0.35	45%	55%

Source: Fehr & Peers, 2019.

Notes:

1. Based on traffic counts collected in October 2019.
2. Trip generation rate = (observed traffic count) / (hotel rooms)

Calculated Project Trip Generation

Trip generation for new projects is typically calculated using the ITE *Trip Generation Manual*, 2017. ITE rates are based on national averages for similar land use types. However, ITE recommends using locally collected

trip generation data when available rather than using generic national averages included in the manual. Thus, the Project's trip generation is calculated using rates based on the existing hotels on the project site. Because the trip rate is derived from existing driveway counts, it accounts for all vehicle trips entering and exiting the site, including any trips made by TNCs, which typically generate both an inbound and outbound trip per visit. The existing driveway counts include any vehicle trips associated with the Park 'N Fly use that currently operate at the site. Although Park 'N Fly may not continue to operate after the proposed project is built, trips associated with this use were not removed, resulting in a more conservative analysis. Table 5 presents the AM and PM peak hour trip generation of the proposed project. The proposed project would generate 86 new AM peak hour trips and 73 new PM peak hour trips, which corresponds to an approximate 29 percent increase in overall trip generation of the site.

TABLE 5: PROJECT TRIP GENERATION ESTIMATE

Land Use	Trip Rates				Trips			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Total	In / Out	Total	In / Out	Total	In / Out	Total	In / Out
Moxy Hotel (209 rooms)	0.41	49% / 51%	0.35	45% / 55%	86	42 / 44	73	33 / 41

Source: Fehr & Peers, 2019.

Notes:

1. Based on traffic counts collected in October 2019.
2. Trip generation rate = (observed traffic count) / (hotel rooms)

TRIP DISTRIBUTION AND ASIGNMENT

Figure 5 displays the distribution of project-generated trips. These percentages are based on the project's expected travel characteristics and the existing turning movement volumes for trip patterns to and from the project site. A large percentage of project trips are expected to be coming to/from SFO and may access the airport either via US 101 or South McDonnell Road. Some trips are also expected to use US 101 to travel to/from other origins/destinations along the Peninsula. A small percentage of trips are expected to use El Camino Real to travel regionally, and some trips are expected to use Rollins Road to access the BART/Caltrain station. Since the Millbrae Avenue driveway provides more direct access to the project, a greater proportion of project trips are expected to use the Millbrae Avenue driveway than the Old Bayshore Highway driveways. Project vehicle trips presented in Table 5 were assigned to the roadway network based on the trip distribution shown on Figure 5. Project-generated vehicle trips were assigned to specific turning movements at the four study intersections and are presented in Figure 6.

PARKING DEMAND

The proposed project would not construct additional parking. Instead, the hotel would utilize existing parking spaces at the Aloft and Westin hotels while removing ten spaces to accommodate the building footprint. The total parking supply for the three hotels would therefore be reduced from 893 spaces to 883 spaces. As noted above, City code requirements only apply to the total number of hotel rooms; however, employee parking is accounted for in determining parking demand at the site.

Assuming Moxy Hotel guests park at a rate of 0.85 spaces per occupied room and that five additional spaces would be used for employee parking, then full hotel room occupancy would yield a parking demand of 789 spaces. The parking supply would be 864 spaces (883 spaces minus – 19 employee spaces), resulting in a surplus of 75 parking spaces. For more detail, refer to Appendix B.

The assumption that the project will generate parking demand at the same rate as the existing Aloft and Westin Hotels is conservative since the project markets heavily towards younger travelers who are more likely to arrive at the hotels by non-driving modes. Moxy Hotels offer modestly sized rooms that are more comfortable for solo travelers or couples as opposed to families or larger groups. The proposed project averages 200 square feet per room, while the existing Millbrae Aloft and Westin average 265 square feet and 320 square feet per room, respectively. Further, the Denver Moxy hotel parking survey showed a much lower parking rate per room compared to the existing Aloft and Westin hotels, as further explained in Appendix B.

Figure 5

Project Trip Distribution

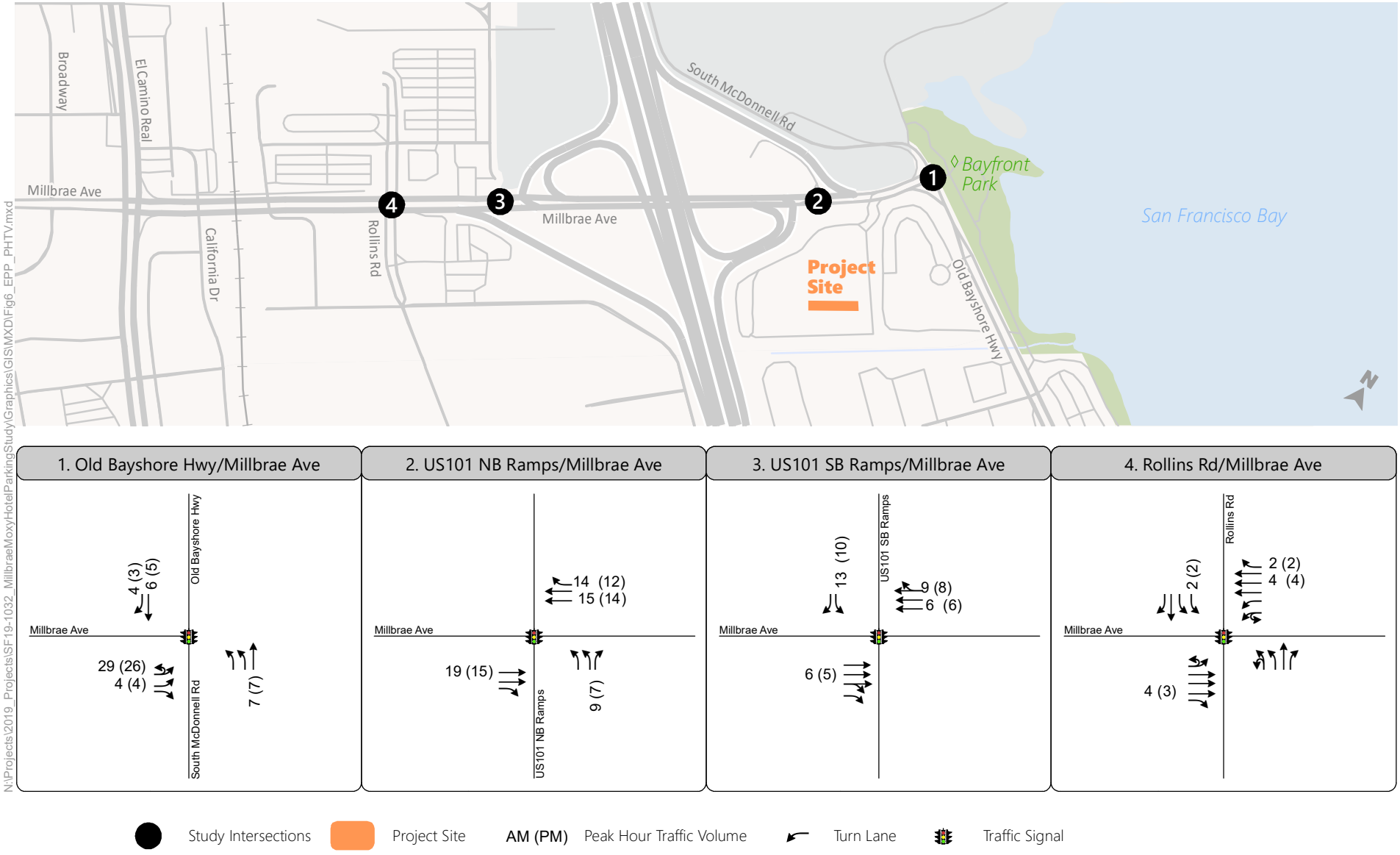


Figure 6

Project Trip Assignment

PROJECT EFFECTS & IMPROVEMENT MEASURES

PROJECT EFFECTS ON SITE ACCESS AND CIRCULATION

Access to the project site will remain largely unchanged with the addition of the proposed project; the site will continue to be served by two major driveways and two minor driveways. As mentioned previously, the major driveway on Millbrae Avenue is expected to carry the majority of project trips since it has more direct access to the project's main lobby. Vehicles using the Millbrae driveway will continue to have to make a right turn out of the driveway then a U-turn at the Old Bayshore intersection to access the US 101 ramps. All parking on the project site will continue to be shared between the three hotels. Passenger loading is expected to continue to occur in front of each hotel's lobby at the designated loading zones. The proposed project does not propose to drastically alter the overall circulation patterns at the project site and the existing circulation is expected to be adequate to handle the additional vehicle and passenger loading demand.

PROJECT EFFECTS ON INTERSECTION OPERATIONS

This section describes the project's effects on existing and future (2040) intersection operations.

Existing Plus Project Conditions

Figure 7 displays the AM and PM peak hour traffic volumes, lane configurations, and traffic controls at the four study intersections under Existing Plus Project conditions. Table 6 displays AM and PM peak hour delay and LOS at the four study intersections under Existing Plus Project conditions (refer to Appendix C for detailed calculations).

TABLE 6: INTERSECTION LOS – EXISTING PLUS PROJECT CONDITIONS						
Intersection	**Traffic Control**	**Peak Hour**	**Existing**		**Existing Plus Project**	
			Delay	**LOS**	**Delay**	**LOS**
1. Millbrae Avenue / Old Bayshore Highway / South McDonnell Road	Signal	AM	15	B	17	B
		PM	29	C	31	C
2. Millbrae Avenue / US 101 NB Ramps	Signal	AM	15	B	15	B
		PM	17	B	17	B
3. Millbrae Avenue / US 101 SB Ramps	Signal	AM	25	C	25	C
		PM	25	C	25	C
4. Millbrae Avenue / Rollins Road	Signal	AM	42	D	40[2]	D
		PM	38	D	40	D

Source: Fehr & Peers, 2019.

Notes:

1. For signalized intersections, delay (sec/veh) and LOS is reported for the overall intersection.
2. The average delay decreases at intersection 4 during the AM peak hour with the addition of project traffic. Although counterintuitive, this can be expected when project trips are added to movements that are operating with low delay and thus decrease the overall average delay at the intersection.

As seen in Table 6, all study intersections would continue to operate acceptably at LOS D or better under existing plus project conditions. Based on the simulation results, vehicle queuing at the study intersections did not appear to significantly worsen with the addition of project trips. Most queues were still able to clear in one cycle length and freeway off-ramp queues still did not extend past the gore points.

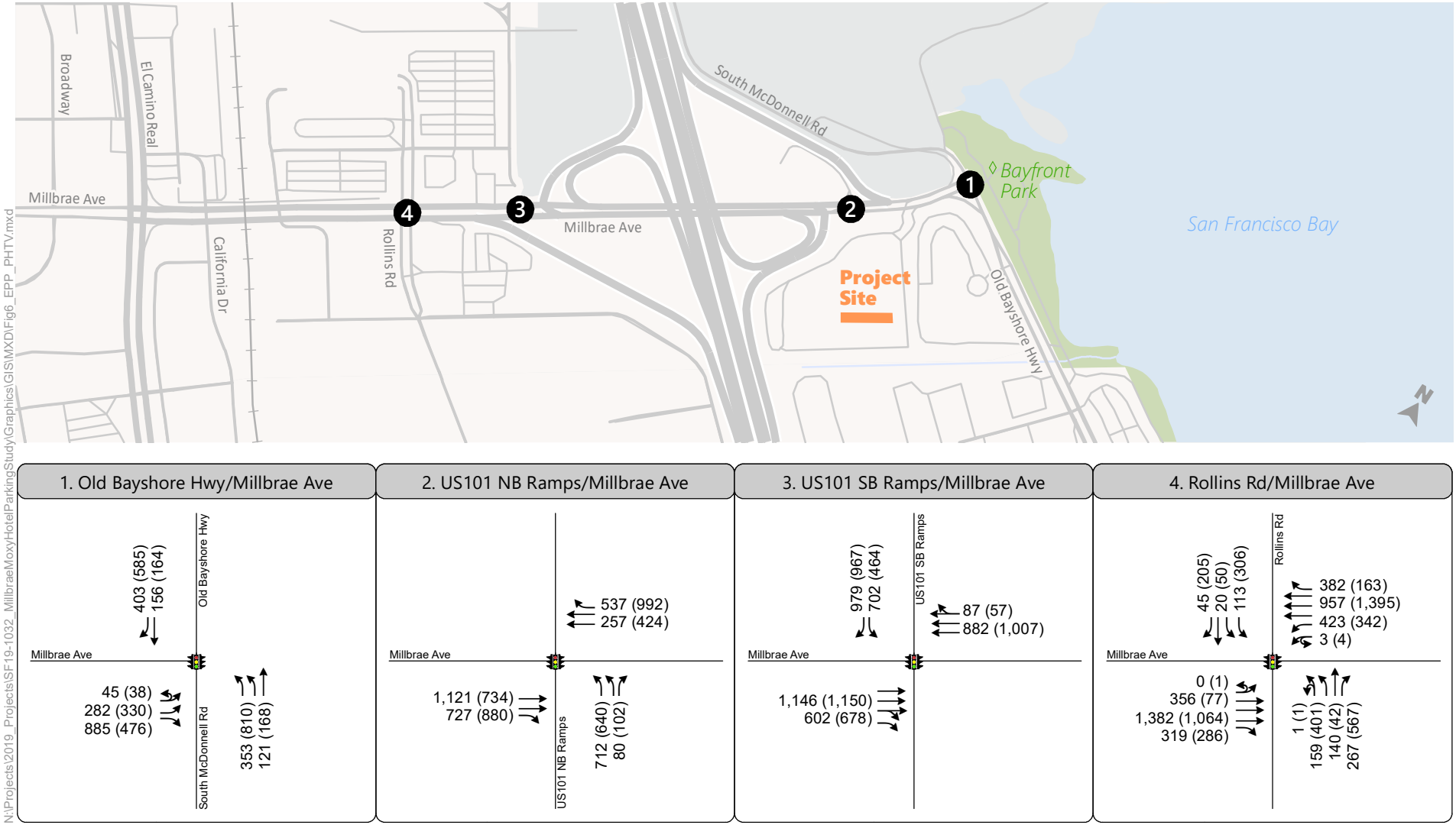


Figure 7

Existing Plus Project Conditions
Peak Hour Intersection Turn Movement Volumes

2040 Plus Project Conditions

Cumulative (2040) volume forecasts were developed based on outputs from the travel demand model developed by the Santa Clara Valley Transportation Authority and the San Mateo City/County Association of Governments (VTA C/CAG model). The model was originally developed for the Caltrain Electrification EIR and later modified for the California High Speed Rail analysis. For this cumulative scenario, forecasts were further refined to account for the Millbrae Station Area Specific Plan and updated existing volumes at study intersections. The 2040 intersection operations analysis assumes Association of Bay Area Governments (ABAG) land use projections and reasonably foreseeable transportation network improvements. These improvements include minor signal timings modifications at the study intersections to reflect changes in future volumes, as well as widening of Millbrae Avenue between Rollins Road and the US 101 SB ramps as identified in the *San Mateo Countywide Transportation Plan 2040*[1].

Figure 8 and Figure 9 display the AM and PM peak hour traffic volumes, lane configurations, and traffic controls at the four study intersections under 2040 No Project and 2040 Plus Project conditions, respectively. Table 7 displays AM and PM peak hour delay and LOS at the four study intersections under 2040 no project and 2040 plus project conditions (refer to Appendix C for detailed calculations).

TABLE 7: INTERSECTION LOS – 2040 PLUS PROJECT CONDITIONS

Intersection	Traffic Control	Peak Hour	2040 No Project		2040 Plus Project	
			Delay	LOS	Delay	LOS
1. Millbrae Avenue / Old Bayshore Highway / South McDonnell Road	Signal	AM	20	C	24	C
		PM	49	D	51	D
2. Millbrae Avenue / US 101 NB Ramps	Signal	AM	24	C	27	C
		PM	24	C	25	C
3. Millbrae Avenue / US 101 SB Ramps	Signal	AM	33	C	37	D
		PM	36	D	33	C
4. Millbrae Avenue / Rollins Road	Signal	AM	**66**	**E**	**68**	**E**
		PM	**65**	**E**	**69**	**E**

Source: Fehr & Peers, 2019.

Notes:

1. For signalized intersections, delay (sec/veh) and LOS is reported for the overall intersection.
2. Bold text indicates unacceptable operations.

[1] San Mateo Countywide Transportation Plan 2040: http://52.43.20.201/wp-content/uploads/2014/05/SMCTP-2040-FINAL_.pdf

As seen in Table 7, all study intersections except for the Millbrae Avenue/Rollins Road intersection operate at acceptable LOS D or better under 2040 No Project and 2040 Plus Project conditions. The Millbrae Avenue/Rollins Road intersection would operate at unacceptable LOS E under 2040 no project conditions and would continue to operate at unacceptable LOS E under 2040 plus project conditions. However, intersection delay would not increase by more than five seconds, and therefore the project's contribution to intersection delay would not be considerable. Under 2040 conditions, vehicle queuing throughout the study area gets slightly worse compared to existing conditions due to increased demand volumes and limited pocket lengths. Most queues, however, continue to clear each cycle and do not block adjacent intersections. The US 101 SB off-ramp queue worsens under 2040 conditions but still does not extend past the gore point. Vehicle queuing under 2040 Plus Project conditions did not appear to significantly worsen with the addition of project trips.

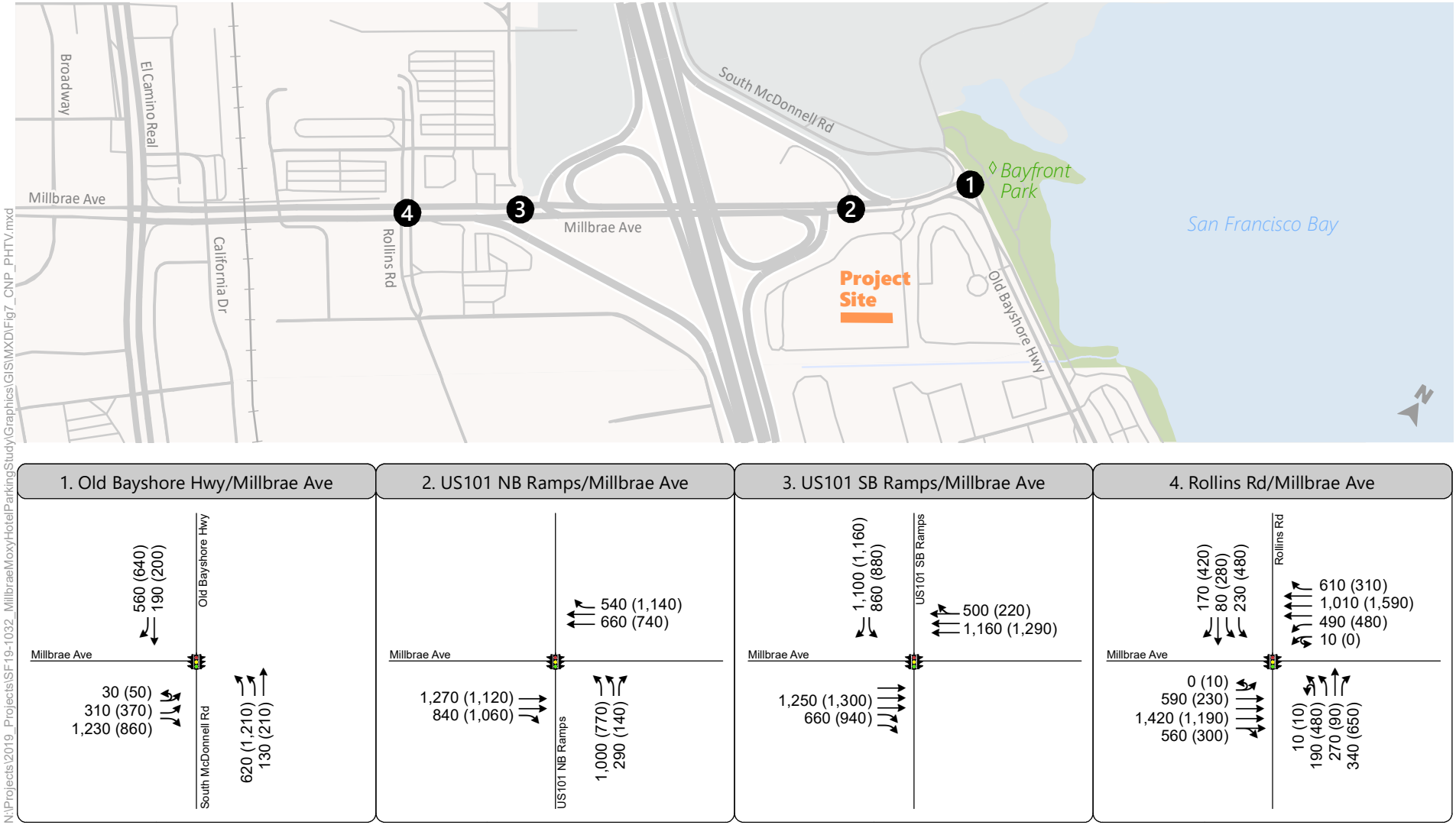


Figure 8

2040 Conditions
Peak Hour Intersection Turn Movement Volumes

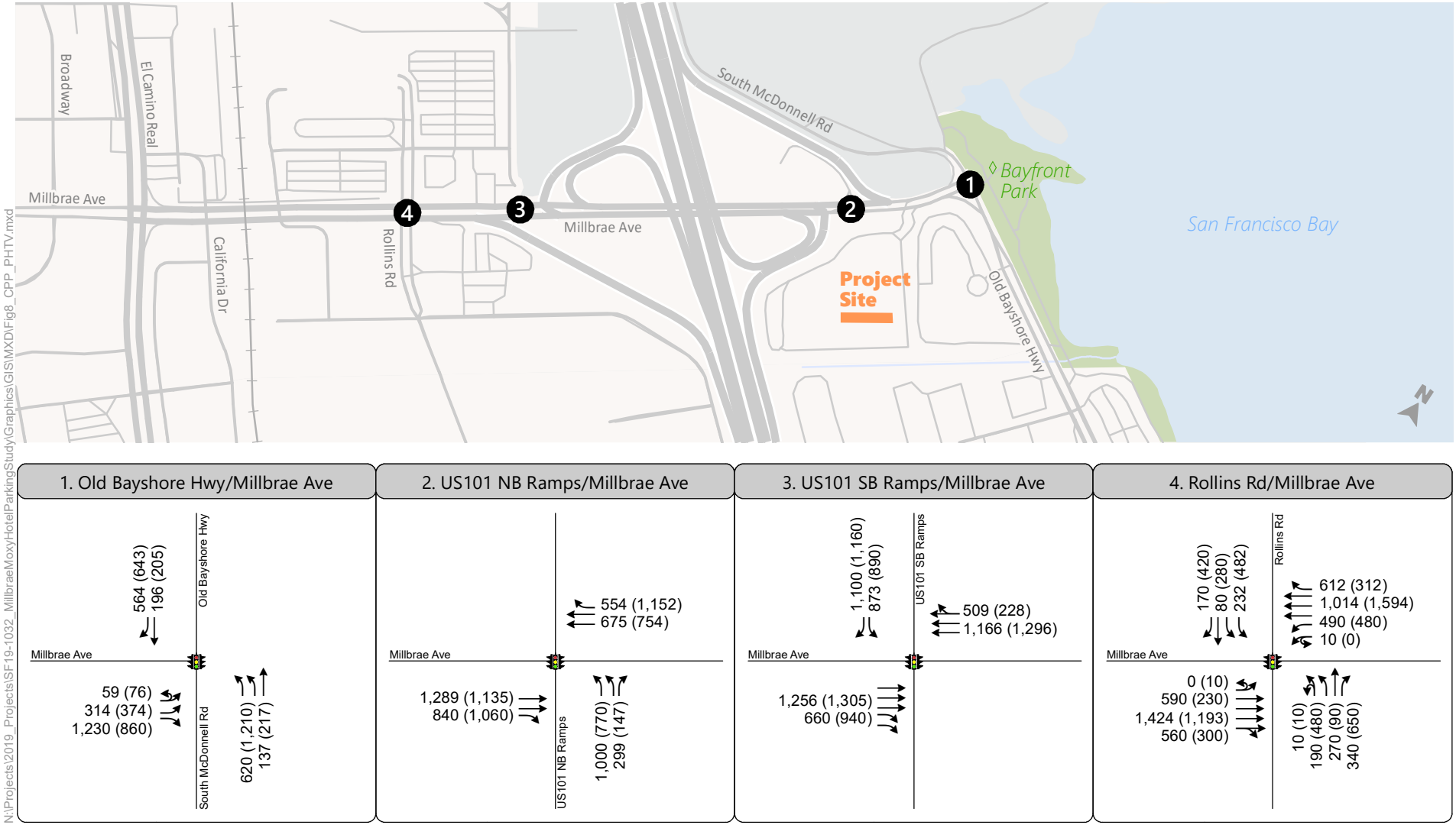


Figure 9

2040 Plus Project Conditions
Peak Hour Intersection Turn Movement Volumes

PROJECT EFFECTS ON ALTERNATIVE MODES OF TRAVEL

Given the project's land use context, the majority of project-generated trips would be made by automobile, and travel by alternative modes would represent a small proportion of the project's overall trip generation.

The project would add vehicle trips to the study area, but would not substantially alter existing pedestrian, bicycle or transit access. The project driveways are expected to adequately handle the additional vehicle trips generated by the proposed project. The project would not create any new conflicts with any existing or approved pedestrian, transit, and/or bicycle facilities or services. Project-generated walking or biking trips would be minimal and would be encouraged to cross roads at designated areas to access the existing and approved pedestrian or bicycling facilities, including the Bay Trail east of Old Bayshore Highway. The project would provide adequate driveway access such that it would not cause pedestrian, transit, and/or bicycle facilities to be frequently blocked by cars or other potential safety obstructions/hazards. Based on the project location, accessibility of transit, demographics of hotel guests, and size of the project, it is expected that relatively few people would use transit to access the site. The project would not cause the transit ridership demand to increase to levels greater than available capacity, nor would it reduce access to transit service or create unsafe access for transit passengers.

RECOMMENDED IMPROVEMENT MEASURES

Signal Timing Optimization

A majority of the project trips are expected to use the existing Millbrae Avenue driveway since it provides a more direct connection to the project within the hotel site. As a result, a high proportion of outbound project trips would utilize the eastbound u-turn and left turn lanes at the Millbrae Avenue/Old Bayshore Highway intersection to travel to the SFO Airport, the Millbrae Station, or US 101. Although our analysis concludes that the intersection would continue to operate acceptably with the project trips, intersection operations could be improved with minor signal timing optimization.

Transportation Demand Management (TDM)

The following strategies can be implemented to reduce the number of vehicle trips generated by the project and/or the parking demand at the project site.

Transportation Network Company Partnership

By partnering with a Transportation Network Company (TNC) provider (e.g. Lyft or Uber), the hotels could offer discount codes for guests to use on their rides. TNC trips that start or end at an SFO terminal incur a

surcharge of $5. For hotel guests arriving from the airport, a TNC discount would help provide both an efficient and cost-effective manner of accessing their hotel without needing to rent a vehicle or needing to park a vehicle on site.

Airport/BART Shuttle Service

Driving is often the preferred option for travelers who are averse to relying on a service that is unpredictable. Making hotel shuttle service to/from SFO and Bay Area Rapid Transit (BART) very frequent and advertising ease of use would help hotel guests understand that utilizing the shuttle may be a preferable option over renting a vehicle. In addition, the hotel shuttle can be promoted as an easy way to connect with BART train service into San Francisco. BART provides hotel guests with a transit option for accessing destinations in San Francisco and the greater Bay Area without needing to drive themselves.

Demand-Based Parking Pricing

Consumers are price-sensitive and often make decisions by evaluating the cost of various options. If parking a vehicle presents a large expense, then more price-sensitive travelers consider alternative mode options. Since the supply of parking at the hotels would be fixed, one way to ensure that the parking spaces will be available is to increase the price during high-demand times. If the hotel anticipates high parking demand based on higher than average room reservations or knowledge that a conference will be occurring nearby, the daily rate for parking could be increased from the current $30/day charge and then communicated to guests with reservations. By communicating the increased rate in advance, guests will have an opportunity to make informed decisions about their options for accessing the hotel.

In addition, room discounts could be offered for guests who do not drive and park a vehicle during their stay.

Marketing Campaign

The project can signal to patrons that driving to the hotel is not the only transportation option by providing informational materials on other modes. These materials can be disseminated over social media platforms to reach potential guests and help establish a brand identity as a hotel that most guests do not access by driving.

Preferential Parking for Vanpools or Carpools

The project can reserve convenient parking spaces for high-occupancy vehicles (HOVs) to encourage ridesharing. Preferential spaces could be striped and signed at a low cost. By implementing this strategy, there will be minimal enforcement costs. Complementary strategies such as a Guaranteed Ride Home program and a ridematching program will further encourage ridesharing.

Transportation System Management (TSM) Program Compliance

The project would participate in mitigating traffic problems by implementing TSM measures and encourage alternatives to travel by single-occupant vehicles that would reduce the number of automobile trips. As a result, the project would be in compliance with the goals and objectives identified in the City of Millbrae Municipal Code Chapter 4.85 Transportation System Management (TSM) Program.

CONCLUSION

The project as proposed will construct a new 209 room Moxy hotel on the existing site shared with two existing hotels – the Westin and the Aloft – near the SFO airport. Fehr & Peers collected 7-day roadway tube counts to determine the peak periods of traffic on the surrounding roadways and determined that the weekday AM (7-9 AM) and PM (4-6 PM) peak periods saw the most congestion under existing conditions. Fehr & Peers also collected driveway tube counts at the existing hotel driveways to derive trip generation rates for the proposed hotel. The project generated trips were then distributed to the roadway network and assigned to specific turning movements at study intersections to measure the change in intersection delay and LOS compared to without project conditions. The analysis found that the addition of project trips did not materially worsen intersection operations or vehicle queueing in the study area. Project added trips are also not expected to conflict with any pedestrian, bicycle, transit or other modes of transportation in the study area. The site driveways are expected to operate similarly to under existing conditions and are expected to handle the addition of project vehicle trips. Some improvement measures are recommended to further reduce the project's vehicle trip generation and parking demand, including signal timing optimization, and various TDM measures such as TNC partnerships, airport/BART shuttles, demand-based parking pricing, a marketing campaign, and preferred parking for vanpools and carpools.

APPENDIX A: DATA COLLECTION

Location: Millbrae Ave, B/W Old Bayshore Hwy & US-101 NB On Ramp
Date Range: 10/22/2019 - 10/28/2019
Site Code: 01

	Tuesday			Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Mid-Week Average		
	10/22/2019			10/23/2019			10/24/2019			10/25/2019			10/26/2019			10/27/2019			10/28/2019					
Time	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	480	645	1,125	376	530	906	358	427	785	599	611	1,210	448	657	1,105	346	411	757	759	923	1,682	405	534	939
1:00 AM	293	403	696	196	348	544	182	378	560	245	463	708	347	420	767	196	274	470	477	618	1,095	224	376	600
2:00 AM	227	200	427	143	119	262	148	113	261	190	143	333	168	142	310	144	120	264	179	197	376	173	144	317
3:00 AM	152	85	237	125	79	204	127	73	200	146	114	260	118	88	206	140	72	212	120	105	225	135	79	214
4:00 AM	253	134	387	223	94	317	241	117	358	228	94	322	155	105	260	129	99	228	215	88	303	239	115	354
5:00 AM	421	189	610	433	209	642	368	215	583	422	211	633	268	153	421	229	123	352	446	227	673	407	204	612
6:00 AM	603	354	957	645	409	1,054	597	370	967	590	323	913	389	288	677	298	233	531	550	309	859	615	378	993
7:00 AM	867	656	1,523	855	615	1,470	902	575	1,477	848	591	1,439	569	375	944	490	410	900	871	739	1,610	875	615	1,490
8:00 AM	1,120	840	1,960	**1,134**	784	1,918	**1,103**	774	1,877	**1,060**	712	1,772	580	528	1,108	530	561	1,091	1,150	907	2,057	1,119	799	1,918
9:00 AM	**1,207**	897	**2,104**	1,131	877	**2,008**	1,085	880	**1,965**	1,020	799	1,819	731	704	1,435	716	643	1,359	**1,319**	929	2,248	**1,141**	885	**2,026**
10:00 AM	1,074	937	2,011	1,031	867	1,898	1,023	850	1,873	985	887	1,872	**791**	661	1,452	765	715	1,480	1,247	1,058	**2,305**	1,043	885	1,927
11:00 AM	916	**1,021**	1,937	902	**925**	1,827	952	**914**	1,866	969	**1,014**	**1,983**	767	**917**	**1,684**	**822**	**844**	**1,666**	1,104	**1,096**	2,200	923	**953**	1,877
12:00 PM	983	1,193	**2,176**	958	1,041	1,999	**994**	1,073	2,067	**983**	1,071	2,054	811	889	1,700	841	817	1,658	1,097	1,075	2,172	978	1,102	2,081
1:00 PM	**1,052**	1,117	2,169	**1,060**	1,158	**2,218**	983	1,219	**2,202**	940	1,150	2,090	810	**946**	1,756	882	908	1,790	**1,126**	**1,104**	**2,230**	**1,032**	1,165	**2,196**
2:00 PM	940	**1,231**	2,171	896	1,112	2,008	928	1,183	2,111	903	1,244	2,147	**858**	906	**1,764**	899	1,018	1,917	965	991	1,956	921	1,175	2,097
3:00 PM	891	1,229	2,120	818	1,150	1,968	837	1,285	2,122	880	**1,403**	**2,283**	750	865	1,615	880	1,024	1,904	910	1,024	1,934	849	1,221	2,070
4:00 PM	845	1,167	2,012	819	1,259	2,078	874	1,219	2,093	913	1,311	2,224	748	833	1,581	763	862	1,625	804	887	1,691	846	1,215	2,061
5:00 PM	817	1,225	2,042	825	**1,291**	2,116	841	**1,349**	2,190	812	1,361	2,173	729	695	1,424	804	896	1,700	787	980	1,767	828	**1,288**	2,116
6:00 PM	818	1,166	1,984	838	1,173	2,011	873	1,270	2,143	821	1,121	1,942	751	704	1,455	**936**	936	1,872	813	875	1,688	843	1,203	2,046
7:00 PM	782	1,004	1,786	751	1,102	1,853	862	1,138	2,000	848	1,061	1,909	648	657	1,305	873	976	1,849	797	841	1,638	798	1,081	1,880
8:00 PM	863	1,039	1,902	869	1,098	1,967	913	1,195	2,108	846	1,134	1,980	657	685	1,342	849	1,094	1,943	801	853	1,654	882	1,111	1,992
9:00 PM	712	1,032	1,744	750	1,118	1,868	862	1,170	2,032	818	1,145	1,963	615	827	1,442	834	**1,236**	**2,070**	784	964	1,748	775	1,107	1,881
10:00 PM	711	842	1,553	850	1,002	1,852	738	984	1,722	766	1,062	1,828	562	637	1,199	847	1,126	1,973	736	842	1,578	766	943	1,709
11:00 PM	469	662	1,131	556	725	1,281	692	880	1,572	579	731	1,310	472	547	1,019	681	971	1,652	512	777	1,289	572	756	1,328
Total	17,496	19,268	36,764	17,184	19,085	36,269	17,483	19,651	37,134	17,411	19,756	37,167	13,742	14,229	27,971	14,894	16,369	31,263	18,569	18,409	36,978	17,388	19,335	36,722
Percent	48%	52%	-	47%	53%	-	47%	53%	-	47%	53%	-	49%	51%	-	48%	52%	-	50%	50%	-	47%	53%	-
AM Peak	09:00	11:00	09:00	08:00	11:00	09:00	08:00	11:00	09:00	08:00	11:00	11:00	10:00	11:00	11:00	11:00	11:00	11:00	09:00	11:00	10:00	09:00	11:00	09:00
Vol.	1,207	1,021	2,104	1,134	925	2,008	1,103	914	1,965	1,060	1,014	1,983	791	917	1,684	822	844	1,666	1,319	1,096	2,305	1,141	953	2,026
PM Peak	13:00	14:00	12:00	13:00	17:00	13:00	12:00	17:00	13:00	12:00	15:00	15:00	14:00	13:00	14:00	18:00	21:00	21:00	13:00	13:00	13:00	13:00	17:00	13:00
Vol.	1,052	1,231	2,176	1,060	1,291	2,218	994	1,349	2,202	983	1,403	2,283	858	946	1,764	936	1,236	2,070	1,126	1,104	2,230	1,032	1,288	2,196

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Hotel Driveway, S/O Millbrae Ave
Date Range: 10/22/2019 - 10/28/2019
Site Code: 03

	Tuesday			Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Mid-Week Average		
	10/22/2019			10/23/2019			10/24/2019			10/25/2019			10/26/2019			10/27/2019			10/28/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	17	9	26	17	9	26	12	7	19	25	12	37	19	11	30	13	16	29	23	9	32	15	8	24
1:00 AM	12	6	18	2	3	5	10	7	17	7	9	16	7	8	15	10	13	23	20	12	32	8	5	13
2:00 AM	11	10	21	4	3	7	2	5	7	7	6	13	3	3	6	8	11	19	7	7	14	6	6	12
3:00 AM	4	3	7	0	2	2	7	6	13	5	5	10	9	5	14	3	8	11	2	1	3	4	4	7
4:00 AM	4	9	13	5	12	17	11	13	24	16	13	29	3	8	11	6	9	15	10	13	23	7	11	18
5:00 AM	10	17	27	12	15	27	11	19	30	19	20	39	8	17	25	7	10	17	16	12	28	11	17	28
6:00 AM	18	27	45	19	25	44	16	18	34	21	19	40	10	17	27	14	20	34	26	28	54	18	23	41
7:00 AM	50	39	89	47	45	92	**49**	**44**	**93**	**34**	**32**	**66**	21	24	45	22	25	47	32	**42**	**74**	49	43	91
8:00 AM	**53**	**47**	**100**	**59**	**48**	**107**	48	40	88	26	**32**	58	**24**	18	42	33	15	48	37	30	67	**53**	**45**	**98**
9:00 AM	31	35	66	24	29	53	24	32	56	20	23	43	**24**	17	41	45	26	71	34	22	56	26	32	58
10:00 AM	29	14	43	27	22	49	31	31	62	25	25	50	23	**25**	**48**	**66**	**32**	**98**	32	19	51	29	22	51
11:00 AM	16	23	39	17	17	34	29	19	48	20	27	47	18	14	32	40	21	61	**41**	24	65	21	20	40
12:00 PM	21	19	40	20	21	41	12	11	23	20	10	30	23	17	40	36	17	53	42	19	61	18	17	35
1:00 PM	16	16	32	**41**	31	72	14	20	34	23	30	53	19	13	32	28	19	47	39	27	66	24	22	46
2:00 PM	24	27	51	24	20	44	20	31	51	15	24	39	15	16	31	31	35	66	18	24	42	23	26	49
3:00 PM	28	26	54	23	27	50	17	26	43	25	33	**58**	28	20	48	36	32	68	39	14	53	23	26	49
4:00 PM	36	38	74	31	33	64	25	27	52	24	23	47	19	16	35	33	**36**	**69**	**56**	20	**76**	31	33	63
5:00 PM	42	35	77	21	28	49	32	29	61	18	22	40	21	31	52	30	29	59	21	23	44	32	31	62
6:00 PM	**49**	36	85	40	35	**75**	**37**	33	**70**	23	16	39	**29**	28	57	28	34	62	38	26	64	**42**	35	**77**
7:00 PM	45	**49**	**94**	40	29	69	28	32	60	19	**38**	57	**29**	22	51	**38**	25	63	30	31	61	38	**37**	74
8:00 PM	46	38	84	36	**38**	74	25	30	55	18	27	45	28	**37**	**65**	23	34	57	33	**34**	67	36	35	71
9:00 PM	33	33	66	16	26	42	26	**36**	62	**27**	28	55	28	30	58	29	25	54	36	32	68	25	32	57
10:00 PM	28	28	56	34	27	61	25	27	52	21	28	49	22	25	47	30	13	43	34	24	58	29	27	56
11:00 PM	20	12	32	15	18	33	22	19	41	19	21	40	16	25	41	18	11	29	26	23	49	19	16	35
Total	643	596	1,239	574	563	1,137	533	562	1,095	477	523	1,000	446	447	893	627	516	1,143	692	516	1,208	583	574	1,157
Percent	52%	48%	-	50%	50%	-	49%	51%	-	48%	52%	-	50%	50%	-	55%	45%	-	57%	43%	-	50%	50%	-
AM Peak	08:00	08:00	08:00	08:00	08:00	08:00	07:00	07:00	07:00	07:00	07:00	07:00	08:00	10:00	10:00	10:00	10:00	10:00	11:00	07:00	07:00	08:00	08:00	08:00
Vol.	53	47	100	59	48	107	49	44	93	34	32	66	24	25	48	66	32	98	41	42	74	53	45	98
PM Peak	18:00	19:00	19:00	13:00	20:00	18:00	18:00	21:00	18:00	21:00	19:00	15:00	18:00	20:00	20:00	19:00	16:00	16:00	16:00	20:00	16:00	18:00	19:00	18:00
Vol.	49	49	94	41	38	75	37	36	70	27	38	58	29	37	65	38	36	69	56	34	76	42	37	77

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Old Bayshore Hwy, S/O Millbrae Ave
Date Range: 10/22/2019 - 10/28/2019
Site Code: 02

	Tuesday			Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Mid-Week Average		
	10/22/2019			10/23/2019			10/24/2019			10/25/2019			10/26/2019			10/27/2019			10/28/2019					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	124	83	207	118	104	222	143	85	228	171	141	312	203	131	334	155	123	278	177	140	317	128	91	219
1:00 AM	86	68	154	86	50	136	87	56	143	114	84	198	105	97	202	94	85	179	111	95	206	86	58	144
2:00 AM	56	112	168	50	88	138	53	98	151	65	121	186	60	101	161	48	92	140	46	85	131	53	99	152
3:00 AM	33	86	119	55	97	152	46	96	142	80	120	200	43	83	126	41	94	135	53	109	162	45	93	138
4:00 AM	62	137	199	69	140	209	78	155	233	81	153	234	62	91	153	65	93	158	68	130	198	70	144	214
5:00 AM	134	272	406	144	297	441	148	270	418	156	288	444	96	173	269	74	149	223	144	272	416	142	280	422
6:00 AM	223	426	649	239	446	685	235	426	661	217	423	640	130	213	343	117	172	289	222	400	622	232	433	665
7:00 AM	337	776	1,113	371	662	1,033	443	761	1,204	351	647	998	194	334	528	168	270	438	338	641	979	384	733	1,117
8:00 AM	412	**1,059**	**1,471**	444	**933**	**1,377**	462	**932**	1,394	424	**929**	**1,353**	265	379	644	261	335	596	397	**903**	1,300	439	**975**	**1,414**
9:00 AM	427	889	1,316	445	814	1,259	470	803	1,273	455	807	1,262	376	531	907	341	488	829	439	894	**1,333**	447	835	1,283
10:00 AM	481	636	1,117	465	654	1,119	508	718	1,226	514	756	1,270	404	**579**	983	364	425	789	503	714	1,217	485	669	1,154
11:00 AM	**559**	576	1,135	**598**	748	1,346	**626**	772	**1,398**	**597**	742	1,339	**499**	520	**1,019**	**411**	**526**	**937**	**558**	688	1,246	**594**	699	1,293
12:00 PM	683	651	1,334	737	753	1,490	769	781	1,550	736	**747**	1,483	483	517	1,000	475	**569**	1,044	669	708	1,377	730	728	1,458
1:00 PM	666	663	1,329	790	**833**	**1,623**	780	750	1,530	709	738	1,447	549	496	1,045	538	538	**1,076**	801	**733**	**1,534**	745	749	1,494
2:00 PM	799	**788**	**1,587**	777	769	1,546	810	**787**	1,597	780	722	**1,502**	**573**	**602**	**1,175**	**590**	475	1,065	745	703	1,448	795	**781**	1,577
3:00 PM	739	676	1,415	659	602	1,261	736	702	1,438	742	710	1,452	571	519	1,090	476	484	960	682	686	1,368	711	660	1,371
4:00 PM	878	684	1,562	**920**	694	1,614	821	738	1,559	**783**	668	1,451	432	465	897	443	415	858	735	569	1,304	873	705	1,578
5:00 PM	**904**	611	1,515	901	662	1,563	**996**	694	**1,690**	754	593	1,347	428	453	881	422	452	874	**888**	644	1,532	**934**	656	**1,589**
6:00 PM	677	536	1,213	718	528	1,246	827	574	1,401	598	533	1,131	423	520	943	456	528	984	661	516	1,177	741	546	1,287
7:00 PM	510	431	941	529	369	898	540	443	983	490	473	963	357	417	774	446	431	877	509	423	932	526	414	941
8:00 PM	568	413	981	517	371	888	522	420	942	543	402	945	365	348	713	434	344	778	522	375	897	536	401	937
9:00 PM	428	302	730	477	371	848	492	367	859	444	371	815	399	336	735	419	315	734	406	290	696	466	347	812
10:00 PM	332	221	553	348	243	591	365	244	609	389	280	669	330	257	587	333	273	606	313	240	553	348	236	584
11:00 PM	297	191	488	293	191	484	309	184	493	307	239	546	235	191	426	241	171	412	278	156	434	300	189	488
Total	10,415	11,287	21,702	10,750	11,419	22,169	11,266	11,856	23,122	10,500	11,687	22,187	7,582	8,353	15,935	7,412	7,847	15,259	10,265	11,114	21,379	10,810	11,521	22,331
Percent	48%	52%	-	48%	52%	-	49%	51%	-	47%	53%	-	48%	52%	-	49%	51%	-	48%	52%	-	48%	52%	-
AM Peak	11:00	08:00	08:00	11:00	08:00	08:00	11:00	08:00	11:00	11:00	08:00	08:00	11:00	10:00	11:00	11:00	11:00	11:00	11:00	08:00	09:00	11:00	08:00	08:00
Vol.	559	1,059	1,471	598	933	1,377	626	932	1,398	597	929	1,353	499	579	1,019	411	526	937	558	903	1,333	594	975	1,414
PM Peak	17:00	14:00	14:00	16:00	13:00	13:00	17:00	14:00	17:00	16:00	12:00	14:00	14:00	14:00	14:00	14:00	12:00	13:00	17:00	13:00	13:00	17:00	14:00	17:00
Vol.	904	788	1,587	920	833	1,623	996	787	1,690	783	747	1,502	573	602	1,175	590	569	1,076	888	733	1,534	934	781	1,589

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Hotel Driveway (N), W/O Old Bayshore Hwy
Date Range: 10/22/2019 - 10/28/2019
Site Code: 04

	Tuesday			Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Mid-Week Average		
	10/22/2019			10/23/2019			10/24/2019			10/25/2019			10/26/2019			10/27/2019			10/28/2019					
Time	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	9	15	24	6	8	14	8	8	16	6	15	21	8	21	29	11	23	34	14	17	31	8	10	18
1:00 AM	4	8	12	5	6	11	0	3	3	4	7	11	5	11	16	4	9	13	5	11	16	3	6	9
2:00 AM	7	8	15	3	1	4	2	6	8	1	4	5	2	4	6	7	8	15	4	4	8	4	5	9
3:00 AM	1	3	4	7	5	12	5	6	11	3	9	12	0	4	4	3	4	7	5	6	11	4	5	9
4:00 AM	4	3	7	7	7	14	12	8	20	7	7	14	6	8	14	3	6	9	7	5	12	8	6	14
5:00 AM	9	8	17	8	8	16	8	16	24	15	13	28	3	5	8	5	5	10	7	5	12	8	11	19
6:00 AM	18	27	45	21	20	41	22	23	45	20	19	39	10	8	18	9	15	24	18	13	31	20	23	44
7:00 AM	37	42	79	46	59	105	**75**	72	**147**	30	28	58	12	38	50	15	25	40	12	30	42	53	58	110
8:00 AM	**69**	**116**	**185**	**61**	**111**	**172**	59	**79**	138	25	48	73	21	54	75	19	26	45	39	76	115	**63**	**102**	**165**
9:00 AM	23	48	71	34	69	103	26	40	66	36	46	82	39	**76**	**115**	**42**	**47**	**89**	**41**	**122**	**163**	28	52	80
10:00 AM	25	57	82	35	64	99	43	59	102	35	55	90	23	63	86	41	40	81	39	66	105	34	60	94
11:00 AM	20	42	62	36	63	99	36	50	86	**43**	**62**	**105**	**41**	56	97	27	32	59	29	54	83	31	52	82
12:00 PM	21	38	59	41	58	99	33	57	90	**41**	61	102	12	25	37	21	35	56	36	54	90	32	51	83
1:00 PM	25	39	64	38	59	97	19	34	53	34	60	94	17	28	45	29	54	83	**67**	47	114	27	44	71
2:00 PM	53	66	119	49	72	121	38	55	93	32	51	83	39	61	100	29	43	72	33	47	80	47	64	111
3:00 PM	27	43	70	46	43	89	26	43	69	27	52	79	**96**	56	**152**	24	58	82	39	55	94	33	43	76
4:00 PM	55	83	138	**76**	82	**158**	44	64	108	40	**64**	**104**	16	34	50	25	58	83	46	47	93	**58**	76	135
5:00 PM	57	61	118	40	79	119	43	75	118	28	42	70	30	52	82	**35**	59	94	45	72	117	47	72	118
6:00 PM	**60**	92	152	47	63	110	45	59	104	25	45	70	28	58	86	31	64	95	52	69	121	51	71	122
7:00 PM	**60**	**94**	**154**	29	68	97	41	57	98	28	37	65	24	54	78	**35**	**68**	**103**	35	69	104	43	73	116
8:00 PM	57	91	148	46	83	129	**46**	**86**	**132**	34	53	87	30	**64**	94	**35**	61	96	64	**98**	**162**	50	**87**	**136**
9:00 PM	43	83	126	51	**99**	150	34	76	110	29	62	91	26	59	85	33	65	98	34	58	92	43	86	129
10:00 PM	22	49	71	19	46	65	23	49	72	17	44	61	24	50	74	24	47	71	23	42	65	21	48	69
11:00 PM	28	44	72	21	23	44	24	31	55	22	37	59	17	35	52	15	32	47	15	21	36	24	33	57
Total	734	1,160	1,894	772	1,196	1,968	712	1,056	1,768	582	921	1,503	529	924	1,453	522	884	1,406	709	1,088	1,797	739	1,137	1,877
Percent	39%	61%	-	39%	61%	-	40%	60%	-	39%	61%	-	36%	64%	-	37%	63%	-	39%	61%	-	39%	61%	-
AM Peak	08:00	08:00	08:00	08:00	08:00	08:00	07:00	08:00	07:00	11:00	11:00	11:00	11:00	09:00	09:00	09:00	09:00	09:00	09:00	09:00	09:00	08:00	08:00	08:00
Vol.	69	116	185	61	111	172	75	79	147	43	62	105	41	76	115	42	47	89	41	122	163	63	102	165
PM Peak	18:00	19:00	19:00	16:00	21:00	16:00	20:00	20:00	20:00	12:00	16:00	16:00	15:00	20:00	15:00	17:00	19:00	19:00	13:00	20:00	20:00	16:00	20:00	20:00
Vol.	60	94	154	76	99	158	46	86	132	41	64	104	96	64	152	35	68	103	67	98	162	58	87	136

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Hotel Driveway (S), W/O Old Bayshore Hwy
Date Range: 10/22/2019 - 10/28/2019
Site Code: 05

	Tuesday			Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Mid-Week Average		
	10/22/2019			10/23/2019			10/24/2019			10/25/2019			10/26/2019			10/27/2019			10/28/2019					
Time	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	2	0	2	0	0	0	2	0	2	0	0	0	2	0	2	2	0	2	4	4	8	1	0	1
1:00 AM	0	2	2	1	3	4	0	1	1	0	2	2	0	0	0	1	3	4	1	2	3	0	2	2
2:00 AM	1	1	2	1	5	6	1	3	4	2	3	5	2	3	5	0	2	2	0	0	0	1	3	4
3:00 AM	0	0	0	3	1	4	0	1	1	0	0	0	0	1	1	0	0	0	0	2	2	1	1	2
4:00 AM	0	5	5	0	7	7	1	7	8	0	10	10	0	9	9	1	7	8	1	8	9	0	6	7
5:00 AM	0	**21**	21	0	19	19	0	14	14	0	11	11	0	14	14	1	11	12	0	19	19	0	18	18
6:00 AM	0	12	12	4	18	22	1	12	13	4	12	16	0	10	10	0	7	7	1	20	**21**	2	14	16
7:00 AM	3	**21**	**24**	**7**	**23**	**30**	2	**27**	**29**	0	**22**	**22**	1	**21**	**22**	1	**23**	**24**	0	**21**	**21**	4	**24**	**28**
8:00 AM	4	8	12	3	11	14	2	12	14	2	12	14	2	3	5	**3**	4	7	2	10	12	3	10	13
9:00 AM	3	12	15	6	12	18	1	7	8	1	7	8	2	10	12	0	4	4	**6**	15	**21**	3	10	14
10:00 AM	**5**	11	16	6	9	15	5	12	17	5	5	10	**4**	10	14	2	3	5	**6**	15	**21**	**5**	11	16
11:00 AM	2	11	13	3	5	8	**6**	14	20	**6**	10	16	**4**	6	10	1	2	3	1	4	5	4	10	14
12:00 PM	6	5	11	5	8	13	3	6	9	2	4	6	1	5	6	3	8	11	1	8	9	5	6	11
1:00 PM	2	6	8	1	12	13	2	8	10	3	**13**	**16**	0	8	8	**6**	8	14	9	16	25	2	9	10
2:00 PM	3	12	15	2	**13**	15	1	**13**	14	3	**13**	**16**	**6**	**17**	**23**	**6**	8	14	9	**20**	**29**	2	**13**	**15**
3:00 PM	2	8	10	2	5	7	3	8	11	3	8	11	2	8	10	4	**11**	**15**	7	12	19	2	7	9
4:00 PM	4	**13**	17	0	4	4	1	8	9	4	11	15	4	4	8	5	9	14	4	6	10	2	8	10
5:00 PM	1	6	7	**7**	10	**17**	3	7	10	1	4	5	0	4	4	1	4	5	**10**	12	22	4	8	11
6:00 PM	**9**	9	**18**	4	7	11	**5**	7	12	0	4	4	5	6	11	3	3	6	1	5	6	**6**	8	14
7:00 PM	0	2	2	1	1	2	2	3	5	3	4	7	0	0	0	0	1	1	4	1	5	1	2	3
8:00 PM	5	5	10	4	5	9	2	2	4	**10**	6	**16**	4	4	8	4	3	7	2	2	4	4	4	8
9:00 PM	3	5	8	1	5	6	4	11	**15**	0	5	5	0	4	4	1	3	4	7	9	16	3	7	10
10:00 PM	2	7	9	5	4	9	3	2	5	2	5	7	2	3	5	1	3	4	2	2	4	3	4	8
11:00 PM	6	2	8	2	4	6	2	2	4	4	2	6	**6**	4	10	2	0	2	2	2	4	3	3	6
Total	63	184	247	68	191	259	52	187	239	55	173	228	47	154	201	48	127	175	80	215	295	61	187	248
Percent	26%	74%	-	26%	74%	-	22%	78%	-	24%	76%	-	23%	77%	-	27%	73%	-	27%	73%	-	25%	75%	-
AM Peak	10:00	05:00	07:00	07:00	07:00	07:00	11:00	07:00	07:00	11:00	07:00	07:00	10:00	07:00	07:00	08:00	07:00	07:00	09:00	07:00	06:00	10:00	07:00	07:00
Vol.	5	21	24	7	23	30	6	27	29	6	22	22	4	21	22	3	23	24	6	21	21	5	24	28
PM Peak	18:00	16:00	18:00	17:00	14:00	17:00	18:00	14:00	21:00	20:00	13:00	13:00	14:00	14:00	14:00	13:00	15:00	15:00	17:00	14:00	14:00	18:00	14:00	14:00
Vol.	9	13	18	7	13	17	5	13	15	10	13	16	6	17	23	6	11	15	10	20	29	6	13	15

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Hotel Driveway (Fire Lane), W/O Old Bayshore Hwy
Date Range: 10/22/2019 - 10/28/2019
Site Code: 06

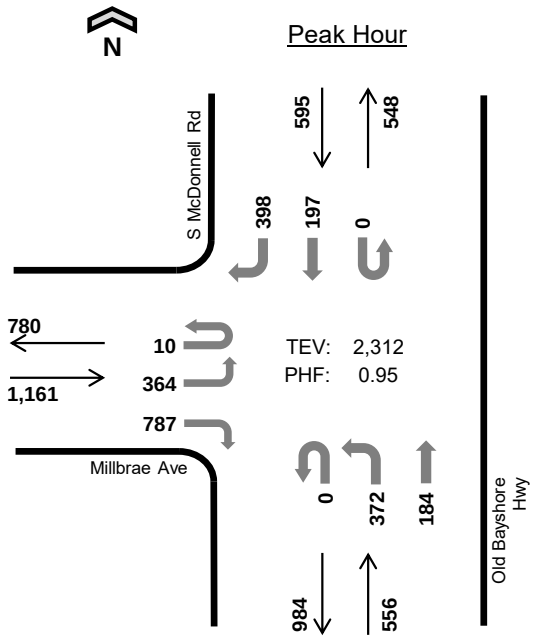
	Tuesday			Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Mid-Week Average		
	10/22/2019			10/23/2019			10/24/2019			10/25/2019			10/26/2019			10/27/2019			10/28/2019					
Time	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	3	0	3	3	0	3	2	0	2	4	0	4	3	0	3	4	0	4	1	0	1	3	0	3
1:00 AM	4	0	4	3	0	3	3	0	3	2	0	2	2	0	2	**5**	0	**5**	3	1	4	3	0	3
2:00 AM	0	0	0	1	0	1	1	0	1	2	0	2	1	0	1	1	0	1	0	0	0	1	0	1
3:00 AM	0	0	0	0	0	0	0	0	0	1	0	1	1	0	1	0	0	0	2	0	2	0	0	0
4:00 AM	0	0	0	1	0	1	1	0	1	0	0	0	0	0	0	0	0	0	2	**2**	4	1	0	1
5:00 AM	1	0	1	3	0	3	2	0	2	3	0	3	1	0	1	0	0	0	0	0	0	2	0	2
6:00 AM	6	1	**7**	3	0	3	5	0	5	**5**	1	**6**	4	0	4	3	0	3	5	0	5	5	0	5
7:00 AM	**7**	0	**7**	**6**	**2**	**8**	**8**	0	**8**	**5**	0	5	**5**	0	**5**	**5**	0	**5**	**7**	0	**7**	**7**	**1**	**8**
8:00 AM	3	0	3	1	0	1	1	0	1	4	0	4	1	0	1	1	0	1	3	0	3	2	0	2
9:00 AM	5	**2**	**7**	3	0	3	5	0	5	2	1	3	2	0	2	2	0	2	3	0	3	4	**1**	5
10:00 AM	4	0	4	4	0	4	7	0	7	3	**3**	**6**	4	0	4	2	0	2	6	0	6	5	0	5
11:00 AM	3	0	3	3	1	4	4	0	4	4	0	4	2	0	2	1	0	1	4	1	5	3	0	4
12:00 PM	3	0	3	5	**1**	6	4	0	4	4	0	4	3	0	3	1	0	1	2	0	2	4	**0**	4
1:00 PM	5	0	5	5	0	5	9	**1**	10	8	0	8	7	0	7	3	0	3	8	0	8	6	**0**	7
2:00 PM	11	0	11	**15**	0	15	9	0	9	11	1	12	**13**	0	**13**	9	0	9	**18**	0	**18**	12	0	12
3:00 PM	8	0	8	12	0	12	12	0	12	11	0	11	11	0	11	7	0	7	10	**1**	11	11	0	11
4:00 PM	12	0	12	7	**1**	8	14	0	14	**15**	0	**15**	8	0	8	3	0	3	10	0	10	11	**0**	11
5:00 PM	**13**	0	**13**	**15**	**1**	**16**	**16**	0	**16**	14	0	14	9	0	9	**10**	0	**10**	15	0	15	**15**	**0**	**15**
6:00 PM	6	0	6	5	**1**	6	3	0	3	2	0	2	6	**1**	7	8	0	8	5	0	5	5	**0**	5
7:00 PM	1	0	1	3	0	3	2	**1**	3	2	0	2	0	0	0	3	0	3	1	0	1	2	**0**	2
8:00 PM	0	**1**	1	1	0	1	2	0	2	1	**2**	3	0	0	0	0	**1**	1	0	0	0	1	**0**	1
9:00 PM	3	0	3	2	0	2	1	**1**	2	2	1	3	1	0	1	1	0	1	1	0	1	2	**0**	2
10:00 PM	5	0	5	8	0	8	5	0	5	3	0	3	2	0	2	4	0	4	5	0	5	6	0	6
11:00 PM	9	0	9	10	0	10	8	0	8	10	0	10	7	0	7	6	0	6	11	0	11	9	0	9
Total	112	4	116	119	7	126	124	3	127	118	9	127	93	1	94	79	1	80	122	5	127	118	5	123
Percent	97%	3%	-	94%	6%	-	98%	2%	-	93%	7%	-	99%	1%	-	99%	1%	-	96%	4%	-	96%	4%	-
AM Peak	07:00	09:00	06:00	07:00	07:00	07:00	07:00	-	07:00	06:00	10:00	06:00	07:00	-	07:00	01:00	-	01:00	07:00	04:00	07:00	07:00	07:00	07:00
Vol.	7	2	7	6	2	8	8	-	8	5	3	6	5	-	5	5	-	5	7	2	7	7	1	8
PM Peak	17:00	20:00	17:00	14:00	12:00	17:00	17:00	13:00	17:00	16:00	20:00	16:00	14:00	18:00	14:00	17:00	20:00	17:00	14:00	15:00	14:00	17:00	12:00	17:00
Vol.	13	1	13	15	1	16	16	1	16	15	2	15	13	1	13	10	1	10	18	1	18	15	0	15

1. Mid-week average includes data between Tuesday and Thursday.

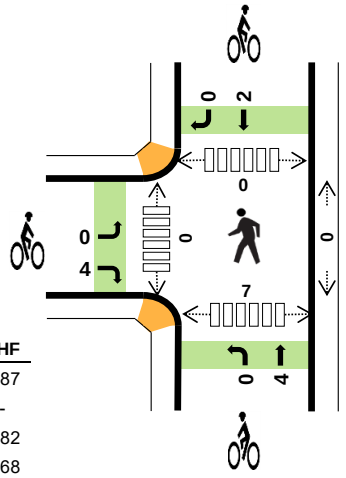
Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Old Bayshore Hwy
Millbrae Ave

Peak Hour



Date: 11-07-2019
Count Period: 8:00 AM to 10:00 AM
Peak Hour: 8:45 AM to 9:45 AM



	HV %:	PHF
EB	5.8%	0.87
WB	-	-
NB	7.4%	0.82
SB	6.9%	0.68
TOTAL	6.4%	0.95

Two-Hour Count Summaries

Interval Start	Millbrae Ave Eastbound				n/a Westbound				Old Bayshore Hwy Northbound				S McDonnell Rd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
8:00 AM	4	76	0	201	0	0	0	0	0	81	33	0	0	0	44	121	560	0
8:15 AM	5	57	0	206	0	0	0	0	0	92	22	0	1	0	33	110	526	0
8:30 AM	4	65	0	225	0	0	0	0	0	77	33	0	0	0	45	77	526	0
8:45 AM	**3**	**80**	**0**	**250**	**0**	**0**	**0**	**0**	**0**	**93**	**26**	**0**	**0**	**0**	**27**	**72**	**551**	2,163
9:00 AM	**4**	**86**	**0**	**221**	**0**	**0**	**0**	**0**	**0**	**81**	**38**	**0**	**0**	**0**	**49**	**87**	**566**	2,169
9:15 AM	**0**	**89**	**0**	**188**	**0**	**0**	**0**	**0**	**0**	**97**	**73**	**0**	**0**	**0**	**60**	**81**	**588**	2,231
9:30 AM	**3**	**109**	**0**	**128**	**0**	**0**	**0**	**0**	**0**	**101**	**47**	**0**	**0**	**0**	**61**	**158**	**607**	**2,312**
9:45 AM	4	99	0	171	0	0	0	0	0	69	28	0	0	0	47	128	546	2,307
Count Total	27	661	0	1,590	0	0	0	0	0	691	300	0	1	0	366	834	4,470	0
Peak Hour All	**10**	**364**	**0**	**787**	**0**	**0**	**0**	**0**	**0**	**372**	**184**	**0**	**0**	**0**	**197**	**398**	**2,312**	**0**
Peak Hour HV	**0**	**27**	**0**	**40**	**0**	**0**	**0**	**0**	**0**	**32**	**9**	**0**	**0**	**0**	**9**	**32**	**149**	**0**
Peak Hour HV%	**0%**	**7%**	**-**	**5%**	**-**	**-**	**-**	**-**	**-**	**9%**	**5%**	**-**	**-**	**-**	**5%**	**8%**	**6%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
8:00 AM	13	0	9	12	*34*	0	0	0	1	*1*	1	0	0	0	*1*
8:15 AM	19	0	9	9	*37*	2	0	4	0	*6*	2	0	0	2	*4*
8:30 AM	15	0	8	11	*34*	0	0	2	3	*5*	0	0	0	1	*1*
8:45 AM	**18**	**0**	**12**	**6**	***36***	**2**	**0**	**1**	**0**	***3***	**0**	**0**	**0**	**1**	*1*
9:00 AM	**11**	**0**	**9**	**10**	***30***	**0**	**0**	**2**	**2**	***4***	**0**	**0**	**0**	**3**	*3*
9:15 AM	**21**	**0**	**12**	**13**	***46***	**2**	**0**	**1**	**0**	***3***	**0**	**0**	**0**	**0**	*0*
9:30 AM	**17**	**0**	**8**	**12**	***37***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**3**	***3***
9:45 AM	17	0	8	4	*29*	1	0	0	1	*2*	0	0	0	1	*1*
Count Total	131	0	75	77	*283*	7	0	10	7	*24*	3	0	0	11	*14*
Peak Hr	**67**	**0**	**41**	**41**	***149***	**4**	**0**	**4**	**2**	***10***	**0**	**0**	**0**	**7**	***7***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Millbrae Ave				n/a				Old Bayshore Hwy				S McDonnell Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
8:00 AM	0	6	0	7	0	0	0	0	0	5	4	0	0	0	2	10	34	0
8:15 AM	0	10	0	9	0	0	0	0	0	4	5	0	0	0	1	8	37	0
8:30 AM	0	6	0	9	0	0	0	0	0	4	4	0	0	0	4	7	34	0
8:45 AM	**0**	**6**	**0**	**12**	**0**	**0**	**0**	**0**	**0**	**10**	**2**	**0**	**0**	**0**	**0**	**6**	**36**	141
9:00 AM	**0**	**3**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**7**	**2**	**0**	**0**	**0**	**3**	**7**	**30**	137
9:15 AM	**0**	**11**	**0**	**10**	**0**	**0**	**0**	**0**	**0**	**8**	**4**	**0**	**0**	**0**	**2**	**11**	**46**	146
9:30 AM	**0**	**7**	**0**	**10**	**0**	**0**	**0**	**0**	**0**	**7**	**1**	**0**	**0**	**0**	**4**	**8**	**37**	**149**
9:45 AM	0	9	0	8	0	0	0	0	0	4	4	0	0	0	0	4	29	142
Count Total	0	58	0	73	0	0	0	0	0	49	26	0	0	0	16	61	283	0
Peak Hour	**0**	**27**	**0**	**40**	**0**	**0**	**0**	**0**	**0**	**32**	**9**	**0**	**0**	**0**	**9**	**32**	**149**	**0**

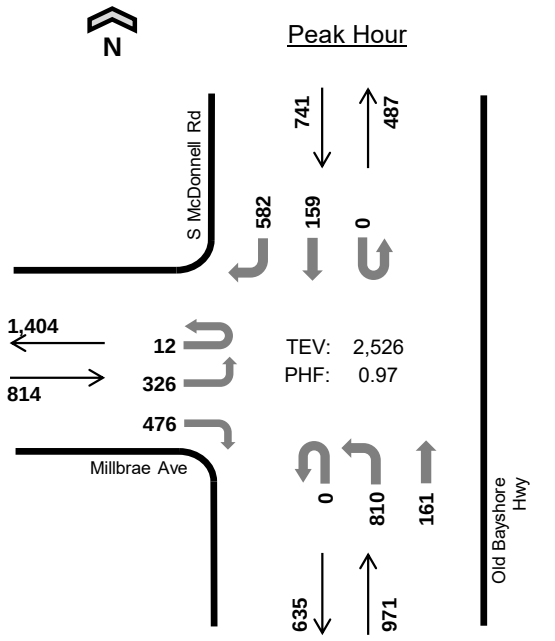
Two-Hour Count Summaries - Bikes

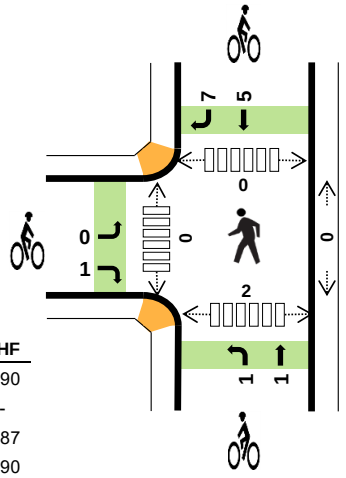
Interval Start	Millbrae Ave			n/a			Old Bayshore Hwy			S McDonnell Rd			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
8:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0
8:15 AM	1	0	1	0	0	0	0	4	0	0	0	0	6	0
8:30 AM	0	0	0	0	0	0	0	2	0	0	3	0	5	0
8:45 AM	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**3**	15
9:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**2**	**0**	**4**	18
9:15 AM	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**3**	15
9:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**10**
9:45 AM	0	0	1	0	0	0	0	0	0	0	1	0	2	9
Count Total	1	0	6	0	0	0	0	10	0	0	7	0	24	0
Peak Hour	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**2**	**0**	**10**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Old Bayshore Hwy
Millbrae Ave

Date: 11-07-2019
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM





	HV %:	PHF
EB	4.1%	0.90
WB	-	-
NB	2.6%	0.87
SB	1.9%	0.90
TOTAL	2.9%	0.97

Two-Hour Count Summaries

Interval Start		Millbrae Ave Eastbound				n/a Westbound				Old Bayshore Hwy Northbound				S McDonnell Rd Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	99	0	128	0	0	0	0	0	142	25	0	0	0	29	119	542	0
4:15 PM		7	93	0	121	0	0	0	0	0	143	30	0	0	0	26	121	541	0
4:30 PM		**4**	**93**	**0**	**130**	**0**	**0**	**0**	**0**	**0**	**185**	**34**	**0**	**0**	**0**	**44**	**128**	**618**	0
4:45 PM		**2**	**92**	**0**	**130**	**0**	**0**	**0**	**0**	**0**	**182**	**33**	**0**	**0**	**0**	**37**	**168**	**644**	2,345
5:00 PM		**1**	**79**	**0**	**112**	**0**	**0**	**0**	**0**	**0**	**214**	**65**	**0**	**0**	**0**	**53**	**128**	**652**	2,455
5:15 PM		**5**	**62**	**0**	**104**	**0**	**0**	**0**	**0**	**0**	**229**	**29**	**0**	**0**	**0**	**25**	**158**	**612**	**2,526**
5:30 PM		2	70	0	104	0	0	0	0	0	164	30	0	0	0	22	141	533	2,441
5:45 PM		1	96	0	130	0	0	0	0	0	152	21	0	1	0	20	156	577	2,374
Count Total		22	684	0	959	0	0	0	0	0	1,411	267	0	1	0	256	1,119	4,719	0
Peak Hour	**All**	**12**	**326**	**0**	**476**	**0**	**0**	**0**	**0**	**0**	**810**	**161**	**0**	**0**	**0**	**159**	**582**	**2,526**	**0**
	HV	**0**	**14**	**0**	**19**	**0**	**0**	**0**	**0**	**0**	**16**	**9**	**0**	**0**	**0**	**10**	**4**	**72**	**0**
	HV%	**0%**	**4%**	**-**	**4%**	**-**	**-**	**-**	**-**	**-**	**2%**	**6%**	**-**	**-**	**-**	**6%**	**1%**	**3%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:00 PM	7	0	8	5	*20*	0	0	0	2	*2*	0	0	0	0	*0*
4:15 PM	10	0	5	3	*18*	0	0	1	1	*2*	2	0	0	0	*2*
4:30 PM	**8**	**0**	**6**	**5**	***19***	**1**	**0**	**1**	**8**	***10***	**0**	**0**	**0**	**1**	*1*
4:45 PM	**6**	**0**	**4**	**2**	***12***	**0**	**0**	**0**	**3**	***3***	**0**	**0**	**0**	**0**	*0*
5:00 PM	**11**	**0**	**8**	**0**	***19***	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**1**	*1*
5:15 PM	**8**	**0**	**7**	**7**	***22***	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**0**	***0***
5:30 PM	6	0	3	6	*15*	0	0	3	4	*7*	0	0	0	1	*1*
5:45 PM	3	0	3	1	*7*	1	0	2	4	*7*	1	0	0	0	*1*
Count Total	59	0	44	29	*132*	2	0	8	23	*33*	3	0	0	3	*6*
Peak Hr	**33**	**0**	**25**	**14**	***72***	**1**	**0**	**2**	**12**	***15***	**0**	**0**	**0**	**2**	***2***

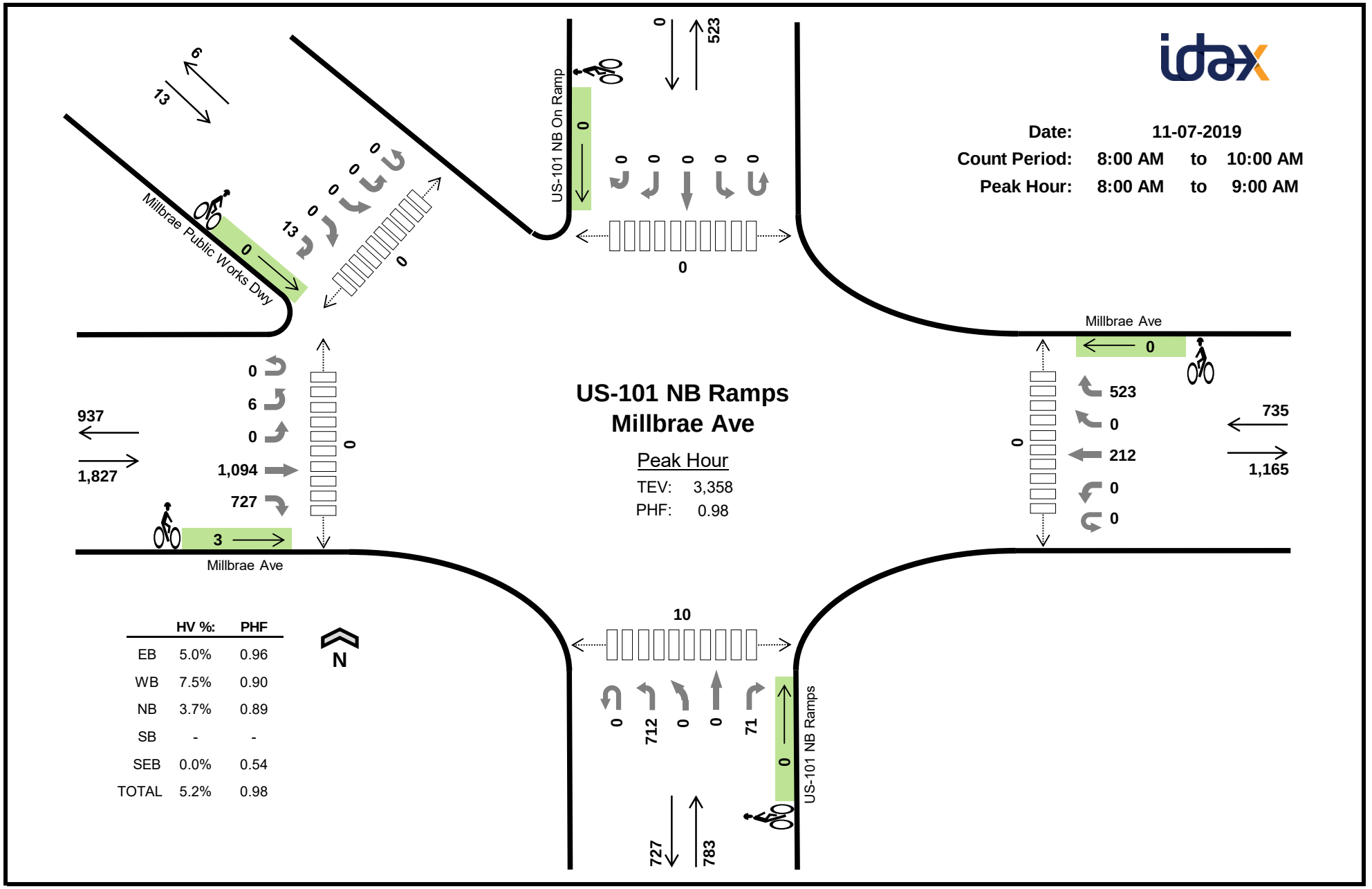
Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Millbrae Ave				n/a				Old Bayshore Hwy				S McDonnell Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	1	0	6	0	0	0	0	0	3	5	0	0	0	3	2	20	0
4:15 PM	0	6	0	4	0	0	0	0	0	3	2	0	0	0	1	2	18	0
4:30 PM	**0**	**2**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**3**	**2**	**19**	0
4:45 PM	**0**	**3**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**3**	**1**	**0**	**0**	**0**	**1**	**1**	**12**	69
5:00 PM	**0**	**4**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**4**	**4**	**0**	**0**	**0**	**0**	**0**	**19**	68
5:15 PM	**0**	**5**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**3**	**4**	**0**	**0**	**0**	**6**	**1**	**22**	**72**
5:30 PM	0	2	0	4	0	0	0	0	0	2	1	0	0	0	2	4	15	68
5:45 PM	0	2	0	1	0	0	0	0	0	2	1	0	0	0	1	0	7	63
Count Total	0	25	0	34	0	0	0	0	0	26	18	0	0	0	17	12	132	0
Peak Hour	**0**	**14**	**0**	**19**	**0**	**0**	**0**	**0**	**0**	**16**	**9**	**0**	**0**	**0**	**10**	**4**	**72**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	Millbrae Ave			n/a			Old Bayshore Hwy			S McDonnell Rd			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	2	2	0
4:15 PM	0	0	0	0	0	0	1	0	0	0	0	1	2	0
4:30 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**7**	**10**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**3**	17
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	16
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**15**
5:30 PM	0	0	0	0	0	0	2	1	0	0	4	0	7	12
5:45 PM	0	0	1	0	0	0	1	1	0	0	4	0	7	16
Count Total	0	0	2	0	0	0	5	3	0	0	13	10	33	0
Peak Hour	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**5**	**7**	**15**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.


US-101 NB Ramps
Millbrae Ave
Peak Hour
TEV: 3,358
PHF: 0.98
Date: 11-07-2019
Count Period: 8:00 AM to 10:00 AM
Peak Hour: 8:00 AM to 9:00 AM
Millbrae Public Works Dwy
US-101 NB On Ramp
Millbrae Ave
Millbrae Ave
US-101 NB Ramps
937
1,827
735
1,165
523
212
1,094
727
712
71
783
N
HV %: PHF
EB 5.0% 0.96
WB 7.5% 0.90
NB 3.7% 0.89
SB - -
SEB 0.0% 0.54
TOTAL 5.2% 0.98

Two-Hour Count Summaries

Interval Start	Millbrae Ave Eastbound					Millbrae Ave Westbound					US-101 NB Ramps Northbound					US-101 NB On Ramp Southbound					Millbrae Public Works Dwy Southeastbound					15-min Total	Rolling One Hour
	UT	HL	LT	TH	RT	UT	LT	TH	BR	RT	UT	LT	BL	TH	RT	UT	LT	TH	RT	HR	UT	HL	BL	BR	HR		
8:00 AM	**0**	**0**	**0**	**252**	**206**	**0**	**0**	**64**	**0**	**140**	**0**	**176**	**0**	**0**	**14**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**853**	0
8:15 AM	**0**	**3**	**0**	**253**	**181**	**0**	**0**	**42**	**0**	**159**	**0**	**200**	**0**	**0**	**21**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**861**	0
8:30 AM	**0**	**3**	**0**	**269**	**182**	**0**	**0**	**47**	**0**	**116**	**0**	**172**	**0**	**0**	**19**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**814**	0
8:45 AM	**0**	**0**	**0**	**320**	**158**	**0**	**0**	**59**	**0**	**108**	**0**	**164**	**0**	**0**	**17**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**830**	**3,358**
9:00 AM	1	0	0	285	165	0	0	31	0	135	0	137	0	0	23	0	0	0	0	0	0	0	0	0	0	777	3,282
9:15 AM	3	0	0	253	148	0	0	57	0	118	0	133	0	0	31	0	0	0	0	0	0	0	0	0	2	745	3,166
9:30 AM	0	2	0	194	191	0	0	63	0	188	0	133	0	0	38	0	0	0	0	0	0	0	0	0	0	809	3,161
9:45 AM	2	2	0	226	183	0	0	52	0	151	0	156	0	0	35	0	0	0	0	0	0	0	0	0	1	808	3,139
Count Total	6	10	0	2,052	1,414	0	0	415	0	1,115	0	1,271	0	0	198	0	0	0	0	0	0	0	0	0	16	6,497	0
Peak Hour All	**0**	**6**	**0**	**1,094**	**727**	**0**	**0**	**212**	**0**	**523**	**0**	**712**	**0**	**0**	**71**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**13**	**3,358**	**0**
Peak Hour HV	**0**	**0**	**0**	**57**	**35**	**0**	**0**	**24**	**0**	**31**	**0**	**20**	**0**	**0**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**176**	**0**
Peak Hour HV%	**-**	**0%**	**-**	**5%**	**5%**	**-**	**-**	**11%**	**-**	**6%**	**-**	**3%**	**-**	**-**	**13%**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0%**	**5%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

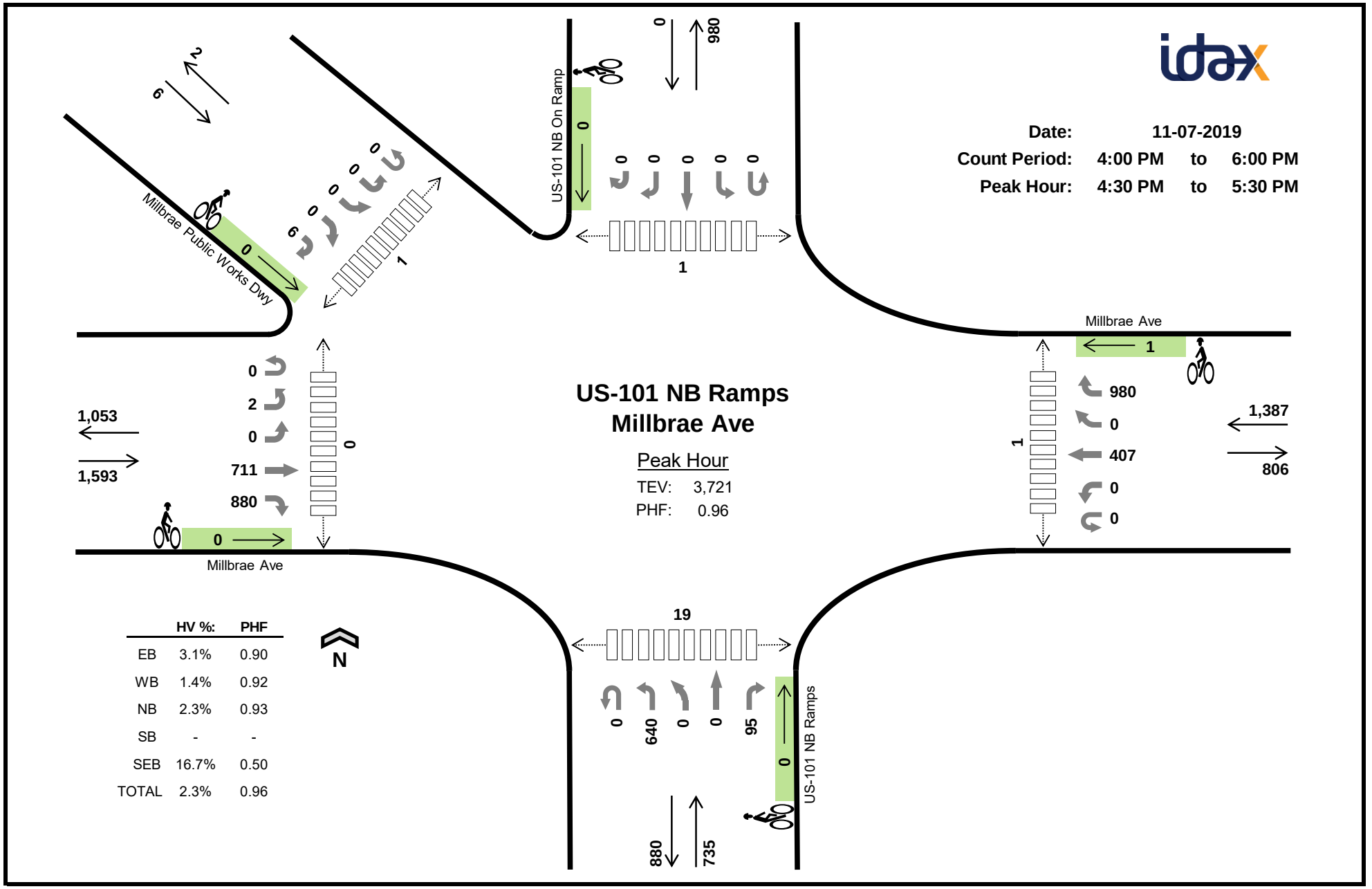
Interval Start	Heavy Vehicle Totals						Bicycles						Pedestrians (Crossing Leg)					
	EB	WB	NB	SB	SEB	Total	EB	WB	NB	SB	SEB	Total	East	West	North	South	Northwest	Total
8:00 AM	**19**	**14**	**12**	**0**	**0**	***45***	**0**	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	**0**	***0***
8:15 AM	**25**	**12**	**5**	**0**	**0**	***42***	**2**	**0**	**0**	**0**	**0**	***2***	**0**	**0**	**0**	**2**	**0**	***2***
8:30 AM	**22**	**12**	**7**	**0**	**0**	***41***	**0**	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**2**	**0**	***2***
8:45 AM	**26**	**17**	**5**	**0**	**0**	***48***	**1**	**0**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**6**	**0**	***6***
9:00 AM	16	13	8	0	0	*37*	1	0	0	0	0	*1*	0	0	0	9	0	*9*
9:15 AM	21	18	12	0	0	*51*	1	0	0	0	0	*1*	0	0	0	0	0	*0*
9:30 AM	27	15	9	0	0	*51*	0	0	0	0	0	*0*	0	0	0	2	0	*2*
9:45 AM	25	9	8	0	0	*42*	0	0	0	0	0	*0*	0	0	0	3	0	*3*
Count Total	181	110	66	0	0	*357*	5	0	0	0	0	*5*	0	0	0	24	0	*24*
Peak Hr	**92**	**55**	**29**	**0**	**0**	***176***	**3**	**0**	**0**	**0**	**0**	***3***	**0**	**0**	**0**	**10**	**0**	*10*

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Millbrae Ave					Millbrae Ave					US-101 NB Ramps					US-101 NB On Ramp					n/a					15-min Total	Rolling One Hour
	Eastbound					Westbound					Northbound					Southbound					Southeastbound						
	UT	HL	LT	TH	RT	UT	LT	TH	BR	RT	UT	LT	BL	TH	RT	UT	LT	TH	RT	HR	UT	HL	BL	BR	HR		
8:00 AM	**0**	**0**	**0**	**12**	**7**	**0**	**0**	**9**	**0**	**5**	**0**	**10**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**45**	0
8:15 AM	**0**	**0**	**0**	**16**	**9**	**0**	**0**	**3**	**0**	**9**	**0**	**2**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**42**	0
8:30 AM	**0**	**0**	**0**	**12**	**10**	**0**	**0**	**6**	**0**	**6**	**0**	**4**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**41**	0
8:45 AM	**0**	**0**	**0**	**17**	**9**	**0**	**0**	**6**	**0**	**11**	**0**	**4**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**48**	**176**
9:00 AM	0	0	0	9	7	0	0	4	0	9	0	6	0	0	2	0	0	0	0	0	0	0	0	0	0	37	168
9:15 AM	0	0	0	16	5	0	0	10	0	8	0	7	0	0	5	0	0	0	0	0	0	0	0	0	0	51	177
9:30 AM	0	0	0	13	14	0	0	5	0	10	0	6	0	0	3	0	0	0	0	0	0	0	0	0	0	51	187
9:45 AM	0	0	0	16	9	0	0	4	0	5	0	6	0	0	2	0	0	0	0	0	0	0	0	0	0	42	181
Count Total	0	0	0	111	70	0	0	47	0	63	0	45	0	0	21	0	0	0	0	0	0	0	0	0	0	357	0
Peak Hour	**0**	**0**	**0**	**57**	**35**	**0**	**0**	**24**	**0**	**31**	**0**	**20**	**0**	**0**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	176	**0**

Two-Hour Count Summaries - Bikes

Interval Start	Millbrae Ave					Millbrae Ave					US-101 NB Ramps					US-101 NB On Ramp					n/a					15-min Total	Rolling One Hour
	Eastbound					Westbound					Northbound					Southbound					Southeastbound						
	UT	HL	LT	TH	RT	UT	LT	TH	BR	RT	UT	LT	BL	TH	RT	UT	LT	TH	RT	HR	UT	HL	BL	BR	HR		
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:15 AM	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	0
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:45 AM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**3**
9:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4
9:15 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Count Total	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0
Peak Hour	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	3	**0**


Date: 11-07-2019
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM
US-101 NB Ramps
Millbrae Ave
Peak Hour
TEV: 3,721
PHF: 0.96
US-101 NB On Ramp
Millbrae Public Works Dwy
Millbrae Ave
Millbrae Ave
US-101 NB Ramps
1,053
1,593
1,387
806
HV %: PHF
EB 3.1% 0.90
WB 1.4% 0.92
NB 2.3% 0.93
SB - -
SEB 16.7% 0.50
TOTAL 2.3% 0.96
N

Two-Hour Count Summaries

Interval Start		Millbrae Ave Eastbound					Millbrae Ave Westbound					US-101 NB Ramps Northbound					US-101 NB On Ramp Southbound					Millbrae Public Works Dwy Southeastbound					15-min Total	Rolling One Hour
		UT	HL	LT	TH	RT	UT	LT	TH	BR	RT	UT	LT	BL	TH	RT	UT	LT	TH	RT	HR	UT	HL	BL	BR	HR		
4:00 PM		0	0	0	210	192	0	0	61	0	195	0	149	0	0	19	0	0	0	0	0	0	0	0	0	1	827	0
4:15 PM		0	0	0	197	160	0	0	88	0	186	0	142	0	0	21	0	0	0	0	0	0	0	0	0	0	794	0
4:30 PM		**0**	**1**	**0**	**191**	**251**	**0**	**0**	**80**	**0**	**244**	**0**	**170**	**0**	**0**	**27**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**964**	0
4:45 PM		**0**	**0**	**0**	**199**	**187**	**0**	**0**	**97**	**0**	**250**	**0**	**147**	**0**	**0**	**23**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**904**	3,489
5:00 PM		**0**	**1**	**0**	**178**	**218**	**0**	**0**	**105**	**0**	**234**	**0**	**170**	**0**	**0**	**25**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**934**	3,596
5:15 PM		**0**	**0**	**0**	**143**	**224**	**0**	**0**	**125**	**0**	**252**	**0**	**153**	**0**	**0**	**20**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**919**	**3,721**
5:30 PM		0	0	0	155	161	0	0	92	0	212	0	172	0	0	26	0	0	0	0	0	0	0	0	0	1	819	3,576
5:45 PM		2	0	0	192	155	0	0	81	0	218	0	152	0	0	29	0	0	0	0	0	0	0	0	0	0	829	3,501
Count Total		2	2	0	1,465	1,548	0	0	729	0	1,791	0	1,255	0	0	190	0	0	0	0	0	0	0	0	0	8	6,990	0
Peak Hour	**All**	**0**	**2**	**0**	**711**	**880**	**0**	**0**	**407**	**0**	**980**	**0**	**640**	**0**	**0**	**95**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**3,721**	**0**
	HV	**0**	**1**	**0**	**24**	**24**	**0**	**0**	**6**	**0**	**14**	**0**	**8**	**0**	**0**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**87**	**0**
	HV%	**-**	**50%**	**-**	**3%**	**3%**	**-**	**-**	**1%**	**-**	**1%**	**-**	**1%**	**-**	**-**	**9%**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**17%**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals						Bicycles						Pedestrians (Crossing Leg)					
	EB	WB	NB	SB	SEB	Total	EB	WB	NB	SB	SEB	Total	East	West	North	South	Northwest	Total
4:00 PM	14	5	1	0	0	*20*	0	2	0	0	0	*2*	0	0	0	2	0	*2*
4:15 PM	14	5	5	0	0	*24*	0	3	0	0	0	*3*	0	0	0	1	0	*1*
4:30 PM	**14**	**8**	**1**	**0**	**0**	***23***	**0**	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**0**	**6**	**0**	***7***
4:45 PM	**12**	**4**	**4**	**0**	**0**	***20***	**0**	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**5**	**1**	***7***
5:00 PM	**15**	**4**	**7**	**0**	**0**	***26***	**0**	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**6**	**0**	***6***
5:15 PM	**8**	**4**	**5**	**0**	**1**	***18***	**0**	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**2**	**0**	***2***
5:30 PM	8	6	4	0	0	*18*	0	3	0	0	0	*3*	0	0	0	11	0	*11*
5:45 PM	13	2	5	0	0	*20*	0	1	0	0	0	*1*	0	0	0	2	0	*2*
Count Total	98	38	32	0	1	*169*	0	10	0	0	0	*10*	1	0	1	35	1	*38*
Peak Hr	**49**	**20**	**17**	**0**	**1**	***87***	**0**	**1**	**0**	**0**	**0**	***1***	**1**	**0**	**1**	**19**	**1**	*22*

Two-Hour Count Summaries - Heavy Vehicles

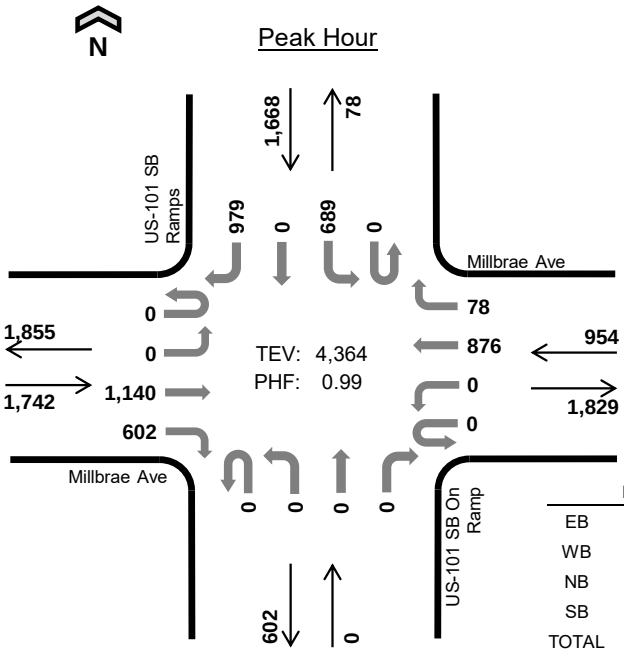
Interval Start	Millbrae Ave					Millbrae Ave					US-101 NB Ramps					US-101 NB On Ramp					n/a					15-min Total	Rolling One Hour
	Eastbound					Westbound					Northbound					Southbound					Southeastbound						
	UT	HL	LT	TH	RT	UT	LT	TH	BR	RT	UT	LT	BL	TH	RT	UT	LT	TH	RT	HR	UT	HL	BL	BR	HR		
4:00 PM	0	0	0	7	7	0	0	3	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	20	0
4:15 PM	0	0	0	7	7	0	0	3	0	2	0	2	0	0	3	0	0	0	0	0	0	0	0	0	0	24	0
4:30 PM	**0**	**0**	**0**	**8**	**6**	**0**	**0**	**3**	**0**	**5**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**23**	0
4:45 PM	**0**	**0**	**0**	**5**	**7**	**0**	**0**	**1**	**0**	**3**	**0**	**3**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**20**	87
5:00 PM	**0**	**1**	**0**	**7**	**7**	**0**	**0**	**1**	**0**	**3**	**0**	**3**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**26**	93
5:15 PM	**0**	**0**	**0**	**4**	**4**	**0**	**0**	**1**	**0**	**3**	**0**	**1**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**18**	**87**
5:30 PM	0	0	0	6	2	0	0	4	0	2	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	18	82
5:45 PM	0	0	0	3	10	0	0	0	0	2	0	4	0	0	1	0	0	0	0	0	0	0	0	0	0	20	82
Count Total	0	1	0	47	50	0	0	16	0	22	0	19	0	0	13	0	0	0	0	0	0	0	0	0	1	169	0
Peak Hour	**0**	**1**	**0**	**24**	**24**	**0**	**0**	**6**	**0**	**14**	**0**	**8**	**0**	**0**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	87	**0**

Two-Hour Count Summaries - Bikes

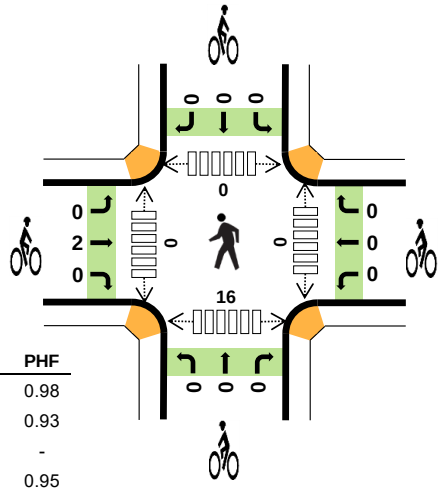
Interval Start	Millbrae Ave					Millbrae Ave					US-101 NB Ramps					US-101 NB On Ramp					n/a					15-min Total	Rolling One Hour
	Eastbound					Westbound					Northbound					Southbound					Southeastbound						
	UT	HL	LT	TH	RT	UT	LT	TH	BR	RT	UT	LT	BL	TH	RT	UT	LT	TH	RT	HR	UT	HL	BL	BR	HR		
4:00 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
4:15 PM	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	5
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	4
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
5:30 PM	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	4
5:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5
Count Total	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1	**0**

US-101 SB Ramps
Millbrae Ave

Date: 11-07-2019
Count Period: 8:00 AM to 10:00 AM
Peak Hour: 8:00 AM to 9:00 AM



	HV %:	PHF
EB	4.6%	0.98
WB	4.7%	0.93
NB	-	-
SB	4.7%	0.95
TOTAL	4.7%	0.99



Two-Hour Count Summaries

Interval Start	Millbrae Ave Eastbound				Millbrae Ave Westbound				US-101 SB On Ramp Northbound				US-101 SB Ramps Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
8:00 AM	**0**	**0**	**297**	**147**	**0**	**0**	**232**	**24**	**0**	**0**	**0**	**0**	**0**	**150**	**0**	**251**	**1,101**	0
8:15 AM	**0**	**0**	**261**	**172**	**0**	**0**	**221**	**15**	**0**	**0**	**0**	**0**	**0**	**180**	**0**	**243**	**1,092**	0
8:30 AM	**0**	**0**	**295**	**145**	**0**	**0**	**215**	**24**	**0**	**0**	**0**	**0**	**0**	**159**	**0**	**244**	**1,082**	0
8:45 AM	**0**	**0**	**287**	**138**	**0**	**0**	**208**	**15**	**0**	**0**	**0**	**0**	**0**	**200**	**0**	**241**	**1,089**	**4,364**
9:00 AM	0	0	234	141	0	0	155	11	0	0	0	0	0	197	0	247	985	4,248
9:15 AM	0	0	220	177	0	0	192	9	0	0	0	0	0	166	0	250	1,014	4,170
9:30 AM	0	0	235	151	0	0	185	13	0	0	0	0	0	148	0	257	989	4,077
9:45 AM	0	0	240	166	0	0	197	14	0	0	0	0	0	185	0	249	1,051	4,039
Count Total	0	0	2,069	1,237	0	0	1,605	125	0	0	0	0	0	1,385	0	1,982	8,403	0
Peak Hour All	**0**	**0**	**1,140**	**602**	**0**	**0**	**876**	**78**	**0**	**0**	**0**	**0**	**0**	**689**	**0**	**979**	**4,364**	**0**
Peak Hour HV	**0**	**0**	**50**	**30**	**0**	**0**	**39**	**6**	**0**	**0**	**0**	**0**	**0**	**41**	**0**	**38**	**204**	**0**
Peak Hour HV%	**-**	**-**	**4%**	**5%**	**-**	**-**	**4%**	**8%**	**-**	**-**	**-**	**-**	**-**	**6%**	**-**	**4%**	**5%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
8:00 AM	**19**	**18**	**0**	**16**	***53***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**3**	*3*
8:15 AM	**22**	**6**	**0**	**23**	***51***	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**4**	*4*
8:30 AM	**20**	**12**	**0**	**22**	***54***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**4**	*4*
8:45 AM	**19**	**9**	**0**	**18**	***46***	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**5**	***5***
9:00 AM	20	10	0	17	*47*	1	0	0	0	*1*	0	0	0	10	*10*
9:15 AM	23	17	0	18	*58*	1	0	0	0	*1*	0	0	0	5	*5*
9:30 AM	26	10	0	23	*59*	0	0	0	0	*0*	0	0	0	1	*1*
9:45 AM	16	10	0	33	*59*	1	0	0	0	*1*	0	0	0	7	*7*
Count Total	165	92	0	170	*427*	5	0	0	0	*5*	0	0	0	39	*39*
Peak Hour	**80**	**45**	**0**	**79**	***204***	**2**	**0**	**0**	**0**	***2***	**0**	**0**	**0**	**16**	***16***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Millbrae Ave Eastbound				Millbrae Ave Westbound				US-101 SB On Ramp Northbound				US-101 SB Ramps Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
8:00 AM	**0**	**0**	**11**	**8**	**0**	**0**	**13**	**5**	**0**	**0**	**0**	**0**	**0**	**7**	**0**	**9**	**53**	0
8:15 AM	**0**	**0**	**14**	**8**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**12**	**0**	**11**	**51**	0
8:30 AM	**0**	**0**	**11**	**9**	**0**	**0**	**11**	**1**	**0**	**0**	**0**	**0**	**0**	**10**	**0**	**12**	**54**	0
8:45 AM	**0**	**0**	**14**	**5**	**0**	**0**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**12**	**0**	**6**	**46**	**204**
9:00 AM	0	0	11	9	0	0	9	1	0	0	0	0	0	6	0	11	47	198
9:15 AM	0	0	11	12	0	0	14	3	0	0	0	0	0	9	0	9	58	205
9:30 AM	0	0	18	8	0	0	8	2	0	0	0	0	0	11	0	12	59	210
9:45 AM	0	0	9	7	0	0	8	2	0	0	0	0	0	15	0	18	59	223
Count Total	0	0	99	66	0	0	78	14	0	0	0	0	0	82	0	88	427	0
Peak Hour	**0**	**0**	**50**	**30**	**0**	**0**	**39**	**6**	**0**	**0**	**0**	**0**	**0**	**41**	**0**	**38**	**204**	**0**

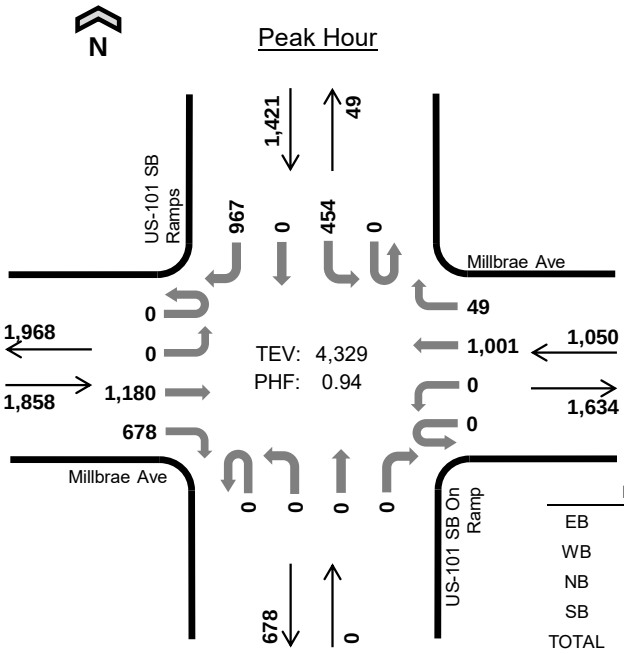
Two-Hour Count Summaries - Bikes

Interval Start	Millbrae Ave Eastbound			Millbrae Ave Westbound			US-101 SB On Ramp Northbound			US-101 SB Ramps Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:15 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	0
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:45 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**
9:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	1	3
9:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	1	3
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
9:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	1	3
Count Total	0	5	0	0	0	0	0	0	0	0	0	0	5	0
Peak Hour	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**

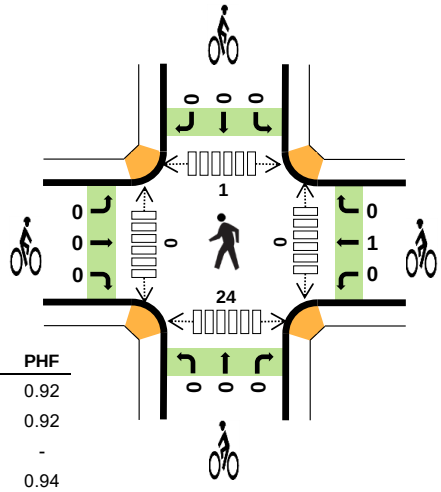
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

US-101 SB Ramps
Millbrae Ave

Date: 11-07-2019
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM



	HV %:	PHF
EB	2.6%	0.92
WB	1.4%	0.92
NB	-	-
SB	2.5%	0.94
TOTAL	2.3%	0.94



Two-Hour Count Summaries

Interval Start		Millbrae Ave Eastbound				Millbrae Ave Westbound				US-101 SB On Ramp Northbound				US-101 SB Ramps Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	0	280	171	0	0	200	20	0	0	0	0	0	144	0	235	1,050	0
4:15 PM		0	0	214	144	0	0	212	20	0	0	0	0	0	145	0	253	988	0
4:30 PM		**0**	**0**	**346**	**161**	**0**	**0**	**253**	**5**	**0**	**0**	**0**	**0**	**0**	**121**	**0**	**207**	**1,093**	0
4:45 PM		**0**	**0**	**256**	**176**	**0**	**0**	**221**	**14**	**0**	**0**	**0**	**0**	**0**	**133**	**0**	**245**	**1,045**	4,176
5:00 PM		**0**	**0**	**302**	**190**	**0**	**0**	**271**	**15**	**0**	**0**	**0**	**0**	**0**	**113**	**0**	**262**	**1,153**	4,279
5:15 PM		**0**	**0**	**276**	**151**	**0**	**0**	**256**	**15**	**0**	**0**	**0**	**0**	**0**	**87**	**0**	**253**	**1,038**	**4,329**
5:30 PM		0	0	220	160	0	0	255	11	0	0	0	0	0	95	0	240	981	4,217
5:45 PM		0	0	240	185	0	0	248	7	0	0	0	0	0	104	0	256	1,040	4,212
Count Total		0	0	2,134	1,338	0	0	1,916	107	0	0	0	0	0	942	0	1,951	8,388	0
Peak Hour	**All**	**0**	**0**	**1,180**	**678**	**0**	**0**	**1,001**	**49**	**0**	**0**	**0**	**0**	**0**	**454**	**0**	**967**	**4,329**	**0**
	HV	**0**	**0**	**34**	**14**	**0**	**0**	**13**	**2**	**0**	**0**	**0**	**0**	**0**	**15**	**0**	**21**	**99**	**0**
	HV%	**-**	**-**	**3%**	**2%**	**-**	**-**	**1%**	**4%**	**-**	**-**	**-**	**-**	**-**	**3%**	**-**	**2%**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	13	4	0	11	*28*	0	2	0	0	*2*	0	0	1	3	*4*
4:15 PM	16	6	0	15	*37*	0	3	0	0	*3*	0	0	0	1	*1*
4:30 PM	**15**	**3**	**0**	**10**	***28***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**7**	*7*
4:45 PM	**13**	**4**	**0**	**10**	***27***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**9**	*10*
5:00 PM	**12**	**3**	**0**	**7**	***22***	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**0**	**6**	*6*
5:15 PM	**8**	**5**	**0**	**9**	***22***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**2**	***2***
5:30 PM	7	5	0	8	*20*	0	3	0	0	*3*	0	0	0	9	*9*
5:45 PM	13	6	0	7	*26*	0	1	0	0	*1*	0	0	0	4	*4*
Count Total	97	36	0	77	*210*	0	10	0	0	*10*	0	0	2	41	*43*
Peak Hour	**48**	**15**	**0**	**36**	***99***	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**1**	**24**	***25***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Millbrae Ave Eastbound				Millbrae Ave Westbound				US-101 SB On Ramp Northbound				US-101 SB Ramps Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	9	4	0	0	3	1	0	0	0	0	0	5	0	6	28	0
4:15 PM	0	0	11	5	0	0	5	1	0	0	0	0	0	4	0	11	37	0
4:30 PM	**0**	**0**	**9**	**6**	**0**	**0**	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**5**	**28**	0
4:45 PM	**0**	**0**	**10**	**3**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**7**	**27**	120
5:00 PM	**0**	**0**	**9**	**3**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**3**	**22**	114
5:15 PM	**0**	**0**	**6**	**2**	**0**	**0**	**4**	**1**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**6**	**22**	**99**
5:30 PM	0	0	6	1	0	0	5	0	0	0	0	0	0	2	0	6	20	91
5:45 PM	0	0	10	3	0	0	6	0	0	0	0	0	0	3	0	4	26	90
Count Total	0	0	70	27	0	0	32	4	0	0	0	0	0	29	0	48	210	0
Peak Hour	**0**	**0**	**34**	**14**	**0**	**0**	**13**	**2**	**0**	**0**	**0**	**0**	**0**	**15**	**0**	**21**	**99**	**0**

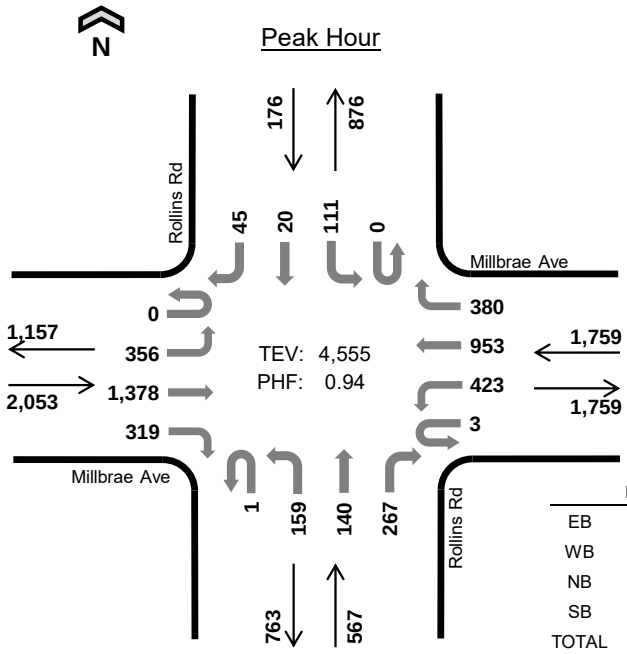
Two-Hour Count Summaries - Bikes

Interval Start	Millbrae Ave Eastbound			Millbrae Ave Westbound			US-101 SB On Ramp Northbound			US-101 SB Ramps Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	2	0	0	0	0	0	0	0	2	0
4:15 PM	0	0	0	0	3	0	0	0	0	0	0	0	3	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	5
5:00 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	4
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
5:30 PM	0	0	0	0	3	0	0	0	0	0	0	0	3	4
5:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	5
Count Total	0	0	0	0	10	0	0	0	0	0	0	0	10	0
Peak Hour	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**

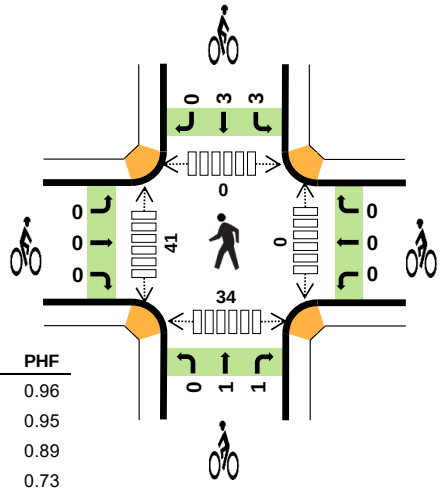
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Rollins Rd
Millbrae Ave

Date: 11-07-2019
Count Period: 8:00 AM to 10:00 AM
Peak Hour: 8:00 AM to 9:00 AM



	HV %:	PHF
EB	1.7%	0.96
WB	3.9%	0.95
NB	6.9%	0.89
SB	17.0%	0.73
TOTAL	3.8%	0.94



Two-Hour Count Summaries

Interval Start	Millbrae Ave Eastbound				Millbrae Ave Westbound				Rollins Rd Northbound				Rollins Rd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
8:00 AM	**0**	**121**	**349**	**66**	**1**	**105**	**253**	**103**	**0**	**42**	**50**	**67**	**0**	**36**	**5**	**19**	**1,217**	0
8:15 AM	**0**	**86**	**332**	**85**	**0**	**96**	**230**	**95**	**1**	**39**	**39**	**75**	**0**	**31**	**8**	**5**	**1,122**	0
8:30 AM	**0**	**89**	**368**	**68**	**1**	**112**	**243**	**99**	**0**	**34**	**26**	**57**	**0**	**20**	**3**	**10**	**1,130**	0
8:45 AM	**0**	**60**	**329**	**100**	**1**	**110**	**227**	**83**	**0**	**44**	**25**	**68**	**0**	**24**	**4**	**11**	**1,086**	**4,555**
9:00 AM	0	40	273	69	3	117	217	52	0	29	18	97	0	16	6	13	950	4,288
9:15 AM	0	29	300	60	0	100	244	53	0	42	8	70	0	29	6	10	951	4,117
9:30 AM	0	27	261	47	2	106	214	55	0	39	15	98	0	38	5	9	916	3,903
9:45 AM	0	23	263	76	0	108	294	45	0	44	6	107	0	27	7	3	1,003	3,820
Count Total	0	475	2,475	571	8	854	1,922	585	1	313	187	639	0	221	44	80	8,375	0
Peak Hour All	**0**	**356**	**1,378**	**319**	**3**	**423**	**953**	**380**	**1**	**159**	**140**	**267**	**0**	**111**	**20**	**45**	**4,555**	**0**
Peak Hour HV	**0**	**0**	**28**	**7**	**0**	**15**	**32**	**22**	**0**	**8**	**7**	**24**	**0**	**23**	**4**	**3**	**173**	**0**
Peak Hour HV%	**-**	**0%**	**2%**	**2%**	**0%**	**4%**	**3%**	**6%**	**0%**	**5%**	**5%**	**9%**	**-**	**21%**	**20%**	**7%**	**4%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
8:00 AM	**5**	**20**	**9**	**10**	***44***	**0**	**0**	**1**	**0**	***1***	**0**	**22**	**0**	**15**	*37*
8:15 AM	**11**	**12**	**13**	**8**	***44***	**0**	**0**	**1**	**2**	***3***	**0**	**7**	**0**	**5**	*12*
8:30 AM	**8**	**23**	**10**	**7**	***48***	**0**	**0**	**0**	**1**	***1***	**0**	**6**	**0**	**9**	*15*
8:45 AM	**11**	**14**	**7**	**5**	***37***	**0**	**0**	**0**	**3**	***3***	**0**	**6**	**0**	**5**	***11***
9:00 AM	11	21	8	6	*46*	0	0	0	2	*2*	0	2	0	7	*9*
9:15 AM	12	24	11	5	*52*	0	0	0	1	*1*	2	11	0	10	*23*
9:30 AM	13	17	10	6	*46*	0	0	0	0	*0*	1	7	1	7	*16*
9:45 AM	10	24	11	7	*52*	0	0	0	1	*1*	0	5	0	7	*12*
Count Total	81	155	79	54	*369*	0	0	2	10	*12*	3	66	1	65	*135*
Peak Hour	**35**	**69**	**39**	**30**	***173***	**0**	**0**	**2**	**6**	***8***	**0**	**41**	**0**	**34**	***75***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Millbrae Ave Eastbound				Millbrae Ave Westbound				Rollins Rd Northbound				Rollins Rd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
8:00 AM	**0**	**0**	**3**	**2**	**0**	**2**	**11**	**7**	**0**	**2**	**1**	**6**	**0**	**10**	**0**	**0**	**44**	0
8:15 AM	**0**	**0**	**9**	**2**	**0**	**3**	**2**	**7**	**0**	**5**	**2**	**6**	**0**	**4**	**2**	**2**	**44**	0
8:30 AM	**0**	**0**	**7**	**1**	**0**	**8**	**12**	**3**	**0**	**0**	**3**	**7**	**0**	**6**	**0**	**1**	**48**	0
8:45 AM	**0**	**0**	**9**	**2**	**0**	**2**	**7**	**5**	**0**	**1**	**1**	**5**	**0**	**3**	**2**	**0**	**37**	**173**
9:00 AM	0	0	8	3	0	7	12	2	0	1	0	7	0	5	1	0	46	175
9:15 AM	0	0	9	3	0	14	6	4	0	1	1	9	0	4	1	0	52	183
9:30 AM	0	1	11	1	0	3	6	8	0	3	0	7	0	6	0	0	46	181
9:45 AM	0	0	8	2	0	6	14	4	0	2	0	9	0	4	3	0	52	196
Count Total	0	1	64	16	0	45	70	40	0	15	8	56	0	42	9	3	369	0
Peak Hour	**0**	**0**	**28**	**7**	**0**	**15**	**32**	**22**	**0**	**8**	**7**	**24**	**0**	**23**	**4**	**3**	**173**	**0**

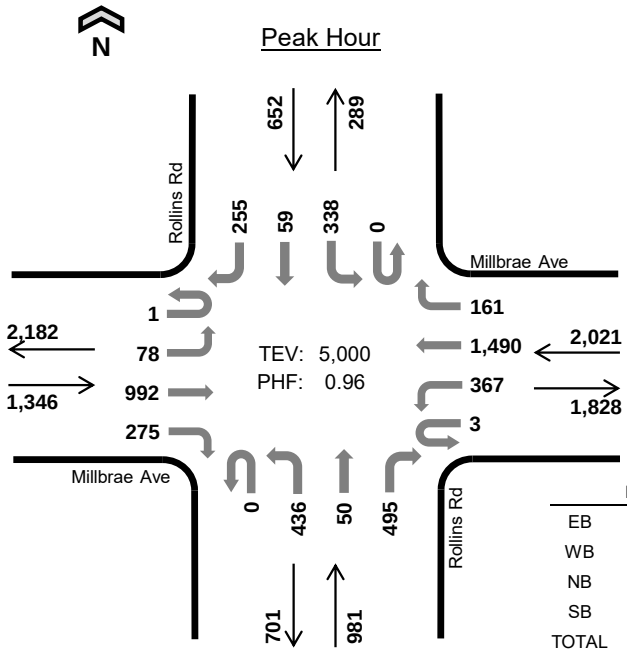
Two-Hour Count Summaries - Bikes

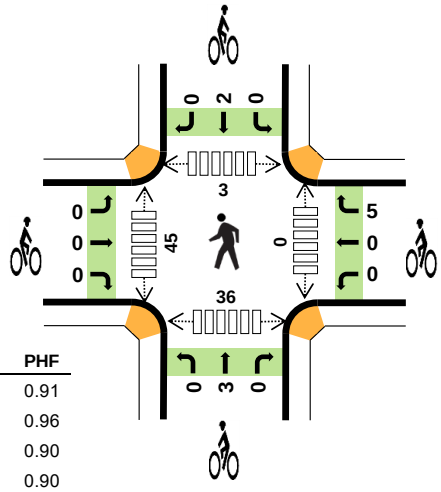
Interval Start	Millbrae Ave Eastbound			Millbrae Ave Westbound			Rollins Rd Northbound			Rollins Rd Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	0
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**0**	**3**	0
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	0
8:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**0**	**3**	**8**
9:00 AM	0	0	0	0	0	0	0	0	0	1	1	0	2	9
9:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	1	7
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	6
9:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	4
Count Total	0	0	0	0	0	0	0	1	1	5	5	0	12	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**3**	**3**	**0**	**8**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Rollins Rd
Millbrae Ave

Date: 11-07-2019
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM





	HV %:	PHF
EB	1.6%	0.91
WB	2.0%	0.96
NB	1.4%	0.90
SB	3.1%	0.90
TOTAL	1.9%	0.96

Two-Hour Count Summaries

Interval Start		Millbrae Ave Eastbound				Millbrae Ave Westbound				Rollins Rd Northbound				Rollins Rd Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	9	270	70	2	76	291	36	0	84	6	120	0	54	9	21	1,048	0
4:15 PM		0	13	234	79	3	106	303	31	0	62	7	104	0	39	11	27	1,019	0
4:30 PM		0	17	271	67	2	76	312	43	0	97	10	160	0	78	10	38	1,181	0
4:45 PM		0	13	246	75	1	86	336	37	1	80	9	134	0	76	15	48	1,157	4,405
5:00 PM		**0**	**23**	**289**	**59**	**1**	**109**	**378**	**34**	**0**	**117**	**13**	**141**	**0**	**76**	**14**	**53**	**1,307**	4,664
5:15 PM		**1**	**24**	**255**	**85**	**0**	**71**	**365**	**47**	**0**	**107**	**10**	**132**	**0**	**74**	**11**	**66**	**1,248**	4,893
5:30 PM		**0**	**16**	**183**	**66**	**1**	**86**	**360**	**42**	**0**	**105**	**14**	**115**	**0**	**98**	**22**	**61**	**1,169**	4,881
5:45 PM		**0**	**15**	**265**	**65**	**1**	**101**	**387**	**38**	**0**	**107**	**13**	**107**	**0**	**90**	**12**	**75**	**1,276**	**5,000**
Count Total		1	130	2,013	566	11	711	2,732	308	1	759	82	1,013	0	585	104	389	9,405	0
Peak Hour	**All**	**1**	**78**	**992**	**275**	**3**	**367**	**1,490**	**161**	**0**	**436**	**50**	**495**	**0**	**338**	**59**	**255**	**5,000**	**0**
	HV	**0**	**1**	**15**	**5**	**0**	**9**	**14**	**17**	**0**	**1**	**5**	**8**	**0**	**15**	**5**	**0**	**95**	**0**
	HV%	**0%**	**1%**	**2%**	**2%**	**0%**	**2%**	**1%**	**11%**	**-**	**0%**	**10%**	**2%**	**-**	**4%**	**8%**	**0%**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	5	9	9	6	*29*	0	2	1	0	*3*	0	12	0	4	*16*
4:15 PM	8	14	6	5	*33*	0	2	0	3	*5*	0	6	0	5	*11*
4:30 PM	7	7	7	6	*27*	0	0	0	0	*0*	2	12	0	15	*29*
4:45 PM	5	10	7	7	*29*	0	0	2	0	*2*	0	12	0	8	*20*
5:00 PM	**8**	**9**	**1**	**3**	***21***	**0**	**1**	**1**	**0**	***2***	**0**	**11**	**1**	**10**	*22*
5:15 PM	**2**	**10**	**5**	**7**	***24***	**0**	**0**	**1**	**2**	***3***	**0**	**9**	**0**	**7**	*16*
5:30 PM	**7**	**10**	**4**	**2**	***23***	**0**	**3**	**1**	**0**	***4***	**0**	**15**	**0**	**14**	*29*
5:45 PM	**4**	**11**	**4**	**8**	***27***	**0**	**1**	**0**	**0**	***1***	**0**	**10**	**2**	**5**	***17***
Count Total	46	80	43	44	*213*	0	9	6	5	*20*	2	87	3	68	*160*
Peak Hour	**21**	**40**	**14**	**20**	***95***	**0**	**5**	**3**	**2**	***10***	**0**	**45**	**3**	**36**	***84***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Millbrae Ave Eastbound				Millbrae Ave Westbound				Rollins Rd Northbound				Rollins Rd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	5	0	0	4	2	3	0	2	1	6	0	5	1	0	29	0
4:15 PM	0	0	6	2	0	5	4	5	0	0	1	5	0	3	2	0	33	0
4:30 PM	0	0	7	0	0	3	0	4	0	2	1	4	0	4	2	0	27	0
4:45 PM	0	1	2	2	0	3	4	3	0	0	1	6	0	5	2	0	29	118
5:00 PM	**0**	**0**	**7**	**1**	**0**	**3**	**3**	**3**	**0**	**0**	**0**	**1**	**0**	**2**	**1**	**0**	**21**	110
5:15 PM	**0**	**0**	**1**	**1**	**0**	**0**	**4**	**6**	**0**	**1**	**2**	**2**	**0**	**5**	**2**	**0**	**24**	101
5:30 PM	**0**	**1**	**3**	**3**	**0**	**5**	**3**	**2**	**0**	**0**	**1**	**3**	**0**	**1**	**1**	**0**	**23**	97
5:45 PM	**0**	**0**	**4**	**0**	**0**	**1**	**4**	**6**	**0**	**0**	**2**	**2**	**0**	**7**	**1**	**0**	**27**	**95**
Count Total	0	2	35	9	0	24	24	32	0	5	9	29	0	32	12	0	213	0
Peak Hour	**0**	**1**	**15**	**5**	**0**	**9**	**14**	**17**	**0**	**1**	**5**	**8**	**0**	**15**	**5**	**0**	**95**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	Millbrae Ave Eastbound			Millbrae Ave Westbound			Rollins Rd Northbound			Rollins Rd Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	1	1	0	1	0	0	0	0	3	0
4:15 PM	0	0	0	0	0	2	0	0	0	0	3	0	5	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	1	1	0	0	0	0	2	10
5:00 PM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	9
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**3**	7
5:30 PM	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**1**	**0**	**0**	**0**	**0**	**4**	11
5:45 PM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**10**
Count Total	0	0	0	0	1	8	1	5	0	0	5	0	20	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**3**	**0**	**0**	**2**	**0**	**10**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

APPENDIX B: ***PARKING STUDY FOR THE PROPOSED MILLBRAE MOXY HOTEL*** **(FEHR & PEERS, 2019)**

FEHR PEERS

MEMORANDUM

Date: May 23, 2019
To: Kevin Tazalla, Starwood Capital Group
From: Mike Hawkins, PE and Krystian Boreyko, Fehr & Peers
Subject: Parking Study for the Proposed Millbrae Moxy Hotel

SF19-1032

The following technical memorandum presents the results of an analysis that was performed to assess the parking demand and availability for a proposed Moxy Hotel (the project) located in Millbrae, California. The project site currently contains two hotels – the Aloft San Francisco Airport and the Westin San Francisco Airport – and a shared surface parking lot that serves both hotels. The proposed project would add a third hotel to the site and would not increase the parking supply.

The analysis included a review of the existing parking supply and a comparison of parking demand data collected at the two hotels and an existing Moxy Hotel in Denver, Colorado. The parking demand data were used to develop a parking generation rate to estimate the parking demand for the project. The results were used to assess whether the parking supply could accommodate the added demand generated by the project. This technical memorandum also presents strategies to manage the parking demand at the project site, if needed.

After analyzing the parking demand at three hotels, including an existing Moxy Hotel, and assessing different parking demand scenarios for the proposed Moxy Hotel, it was determined that the existing parking supply at the project site is sufficient to meet the parking demand with the new hotel.

Existing Hotel Uses on Project Site

The proposed Moxy Hotel will be located at 401 East Millbrae Avenue, adjacent to US-101 and near the San Francisco International Airport (SFO) in the City of Millbrae, California. The site currently contains two hotels, the Aloft San Francisco Airport and the Westin San Francisco Airport. The project site is made up of two parcels that total approximately 618,000 square feet (341,881 square

feet for the Aloft site and 276,119 square feet for the Westin site). **Table 1** shows the number of guest rooms at the existing hotels along with the existing parking supply.

Table 1: Existing Hotel Guest Rooms and Parking Supply

Hotel	Guest Rooms[1]	Parking Supply (spaces)[2]
Westin	397	402
Aloft	271	491
TOTAL	***668***	***893***

Source: Starwood Capital Group, 2019
Notes:
1. Renovations currently under construction will increase the total number of rooms at the Westin and the Aloft to 421 and 298, respectively
2. Total parking supply is shared between the two existing hotels

The City of Millbrae's Zoning Ordinance Code 10.05.2100 stipulates that hotel uses are required to provide one parking space for every guest room. The combined parking supply of the two hotels is 893 parking spaces for 668 guest rooms (719 guest rooms with pending additions), which meets Millbrae Zoning requirements. All parking is shared by the two hotels. Of the 893 available spaces, approximately 10 spaces are used by Westin employees and four spaces are used by Aloft employees, based on observations.

Since the parking spaces are not fully occupied, the hotels provide their surplus spaces for other uses. At both the Aloft and the Westin, Park 'N Fly shuttle customers may park in surplus spaces and leave their vehicles at the hotel as a form of long-term airport parking. Additionally, the Aloft sometimes leases additional unused spaces to a rental car company. The number of rental car spaces may fluctuate in the future depending on the lease terms Aloft sets with a rental car company. If parking demand for hotel guests were to increase, the hotels would scale back or eliminate the other uses for on-site spaces.

Proposed Project

The proposed Moxy Hotel includes 209 rooms over six stories and approximately 70,000 gross square feet.

The proposed Moxy Hotel would not include added parking. Instead, the hotel will utilize existing parking spaces at the Aloft and Westin hotels while removing ten spaces to accommodate the building footprint; the total parking supply for the three hotels would be 883 spaces. It is assumed an additional five spaces would be used for employee parking, for a total of 19 employee parking spaces. As noted above, City code requirements only apply to the total number of hotel rooms; however, employee parking is accounted for in determining parking demand at the site. Factoring employee parking, total parking supply available for hotel guests would be 864 spaces.

Parking Demand

The following section describes the demand for parking for the existing hotels on the project site and at a Moxy Hotel in Denver, Colorado. The Denver Moxy Hotel was surveyed to help inform the parking demand rate for the proposed Millbrae Moxy Hotel.

Existing Demand at the Aloft and Westin Hotels

Parking occupancy data was collected at the Westin and Aloft from 9:30 pm to 10:30 pm on Wednesday, June 6, 2018. Data collection occurred during the evening hour when most hotel guests with vehicles would be in their rooms. In addition, weeknight data was collected because hotel room occupancy rates are higher at this location on weeknights vs. weekends per trend data provided by Starwood Capital Group for the Aloft and Westin Hotels. **Table 2** shows the total parking supply and numbers of occupied spaces. On the survey day, 640 of the 668 total rooms were occupied, for a room occupancy rate of 96 percent. At the peak parking demand time, guest vehicles occupied 545 spaces (229 + 316). This represents a guest parking demand rate of 0.85 spaces per occupied room, suggesting that while demand is high at the existing hotels, not every room utilizes a parking space. To represent a conservative worst-case parking scenario, **Table 3** shows that the expected on-site hotel guest parking demand for the two existing hotels with 100 percent hotel room occupancy would be 568 spaces.

In addition to the June 6, 2018 data, Starwood Capital Group provided monthly aggregated parking data for 2018. Monthly occupancy rates for the combined parking facility at the Aloft and Westin Hotels range from an average of 56% to 63%. The average monthly demand rate suggests that demand for hotel parking was unusually high on June 6, 2018 and that using the 0.85 demand rate calculated from the June 6, 2018 data yields a conservative parking demand rate that is more representative of the peak demand rather than typical demand.

Table 2: Surveyed Parking Usage at Existing Hotels (96% Room Occupancy)

Westin - Parking Space Users	Parking Capacity	Occupied Spaces[1]	Available Spaces	Percent Occupied
Hotel Guests	366	229	137	63%
Park 'N Fly	26	26	0	100%
Employees	10	10	0	100%
Total	**402**	**265**	**137**	**66%**
Aloft - Parking Space Users				
Hotel Guests	357	316	41	89%
Park 'N Fly	95	95	0	100%
Employees	4	4	0	100%
Rental Car	35	35	0	100%
Total	**491**	**450**	**41**	**92%**
Total Capacity and Demand	***893***	***715***	***178***	***79%***

Source: ACE Parking Management, CHS Consulting Group, 2018
Notes:
1. Observed during June 2018 data collection

Table 3: Demand for Hotel Guest Parking with 100% Room Occupancy

Hotel	Parking Demand (Existing)	Hotel Guest Parking Demand Rate	Parking Demand (100% Room Occupancy)
Westin	229	***0.85***[1]	338
Aloft	316		230
TOTAL	***545***		***568***

Source: Fehr & Peers, 2019
Notes:
1. The demand rate varies for each hotel but since parking supply is pooled, the average demand rate is applied to determine aggregate demand.

Existing Demand at Denver Moxy

The Moxy Hotel in Denver was surveyed to help understand the level of parking demand for Moxy Hotels' clientele. Aggregated weeknight and weekend room occupancy and parking data from the Denver Moxy from the most recent 12 months (March 2018 – March 2019) was used to inform the analysis. While the proposed site is near a large international airport, the Denver hotel site is located in a more suburban area where a higher rate of driving trips can be expected. The Moxy Hotel in Denver is otherwise comparable to the proposed Millbrae Moxy in design and concept.

As shown in **Tables 4 and 5** below, the average parking demand rate for guests is 0.14 spaces per occupied room on a weeknight and 0.41 spaces per occupied room on a weekend night. Both parking demand rates are much lower than the 0.85 rate observed at the existing Millbrae Aloft and Westin. While the Denver Moxy location has a higher parking demand on weekends, the Millbrae location is expected to have a higher demand on weekdays based on trends observed at the Aloft and Westin hotels.

Table 4: Denver Moxy Weeknight Parking Demand

Parking Space Users	Parking Capacity	Occupied Spaces	Available Spaces	Occupied Rooms	Guest Parking Demand Rate per Occupied Room
Hotel Guests	73	15	58	108	0.14
Employees	5	5	0	N/A	N/A
Total	**78**	**20**	**58**	**108**	**0.14**

Source: Starwood Capital Group, 2019

Table 5: Denver Moxy Weekend Parking Demand

Parking Space Users	Parking Capacity	Occupied Spaces	Available Spaces	Occupied Rooms	Guest Parking Demand Rate per Occupied room
Hotel Guests	73	30	43	74	0.41
Employees	5	5	0	N/A	N/A
Total	**78**	**35**	**43**	**74**	**0.41**

Source: Starwood Capital Group, 2019

Demand for Proposed Project

The anticipated demand for hotel guest parking spaces for the project was conservatively assessed based on the observed parking rate at the existing hotels on the site, which is higher than the rates at the Moxy Hotel in Denver. Calculations account for the additional 24 Westin rooms and 27 Aloft rooms that are currently under construction. This analysis also conservatively considers parking demand if every room at all three hotels is occupied.

Assuming Moxy Hotel guests park at 0.85 spaces per occupied room and that 19 spaces are dedicated to hotel employees, then full hotel room occupancy would yield a parking demand of 789 spaces. The parking supply would be 864 spaces (883 – 19 employee spaces), resulting in a surplus of 75 parking spaces (**Table 6**).

Table 6: Parking Demand for Proposed Moxy Hotel

Hotel	Hotel Rooms	Parking Supply[1]	Guest Spaces Demand Rate	Occupied Spaces
Westin	421	864	0.85	358
Aloft	298			253
Moxy (max)	209			178
TOTAL	**928**	**864**		**789**
			Surplus Spaces:	***75***[2]

Source: Fehr & Peers, 2019
Notes:
1. Construction of the Project removes 10 existing parking spaces; Parking supply excludes 19 spaces for employee parking
2. Analysis assumes no rental car or Park 'N Fly usage

The assumption that the proposed Moxy Hotel will generate parking demand at the same rate as the existing Aloft and Westin Hotels is conservative given that Moxy Hotels market heavily towards younger travelers who are more likely to arrive at the hotels by non-driving modes. Moxy Hotels offer modestly sized rooms that are more comfortable for solo travelers or couples as opposed to families or larger groups. The proposed Moxy Hotel averages 200 square feet per room, while the existing Millbrae Aloft and Westin average 265 square feet and 320 square feet per room, respectively. Families or larger groups are more likely to travel by vehicle to a hotel since a multi-occupant vehicle can be easier and more cost effective compared to paying multiple transit fares or surcharges for larger taxi/rideshare vehicles.

Parking Management Strategies

Although the parking demand for the proposed Moxy Hotel is expected to be accommodated by the existing parking on-site supply, the following strategies can be put in place if parking demand at the Millbrae Moxy Hotel becomes higher than anticipated. The proposed strategies are designed to help reduce the amount of people accessing the hotel via personal vehicles, and thus reduce demand for parking.

Transportation Demand Management

Transportation Demand Management (TDM) programs can offer travelers options for making trips without driving and parking a vehicle. The following strategies could be implemented by the Moxy Hotel or by the three hotels jointly to help reduce the number of guests parking a vehicle.

Transportation Network Company Partnership

By partnering with a Transportation Network Company (TNC) provider (e.g. Lyft or Uber), the hotels could offer discount codes for guests to use on their rides. TNC trips that start or end at an SFO terminal incur a surcharge of $5. For hotel guests arriving from the airport, a TNC discount would help provide both an efficient and cost-effective manner of accessing their hotel without needing to rent a vehicle and could also offset the TNC airport surcharge.

Airport/BART Shuttle Service

Driving is often the preferred option for travelers who are averse to relying on a service that is unpredictable. Making hotel shuttle service to/from SFO and Bay Area Rapid Transit (BART) very frequent and advertising ease of use would help hotel guests understand that utilizing the shuttle may be a preferable option over renting a vehicle. In addition, the hotel shuttle can be promoted as an easy way to connect with BART train service into San Francisco. BART provides hotel guests with a transit option for accessing destinations in San Francisco and the greater Bay Area without needing to drive themselves.

Demand-Based Parking Pricing

Consumers are price-sensitive and often make decisions by evaluating the cost of various options. If parking a vehicle presents a large expense, then more price-sensitive travelers consider alternative mode options. Since the supply of parking at the hotels would be fixed, one way to ensure that the

parking spaces will be available is to increase the price during high-demand times. If the hotel anticipates high parking demand based on higher than average room reservations or knowledge that a conference will be occurring nearby, the daily rate for parking could be increased from the current $30/day charge and then communicated to guests with reservations. By communicating the increased rate in advance, guests will have an opportunity to make informed decisions about their options for accessing the hotel.

In addition, room discounts could be offered for guests who do not park a vehicle during their stay.

Marketing Campaign

The Moxy Hotel can signal to patrons that driving to the hotel is not the only transportation option by providing informational materials on other modes. These materials can be disseminated over social media platforms to reach potential guests and help establish a brand identity as a hotel that most guests do not access by driving.

Valet Parking Service

If demand for hotel guest parking is found to be consistently high, the hotels could begin to offer a valet parking service. Valet attendants would be able to store vehicles in a more space-efficient manner and increase parking supply by storing some vehicles in the parking aisles.

Limit Park 'N Fly Usage

The project site currently fills underutilized parking spaces with Park 'N Fly customers. If the parking demand for hotel guests increases, the number of spaces available to Park 'N Fly customers could be decreased. However, eliminating Park 'N Fly usage altogether would likely not be necessary.

Conclusion

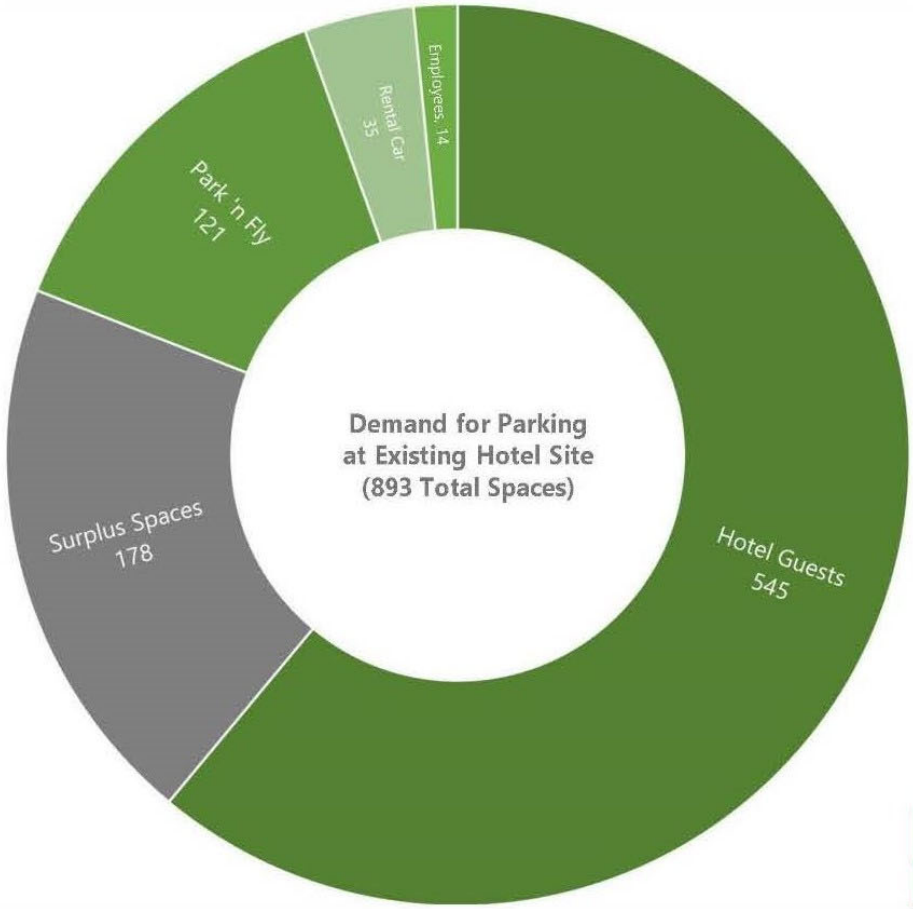
This technical memorandum presented the current parking demand at the proposed Millbrae Moxy Hotel site based on data collected at the existing Aloft and Westin Hotels. It has also calculated the expected parking demand for the entire site after the Moxy Hotel is built. Based on the conservative assumptions that all three hotels will be at 100 percent occupancy at the same time that the Moxy Hotel will generate parking demand at the same rate as the two existing more traditional hotels, and that the parking demand is based on the peak parking demand rather than the average demand, we found that the project site would have a sufficient supply of parking to accommodate

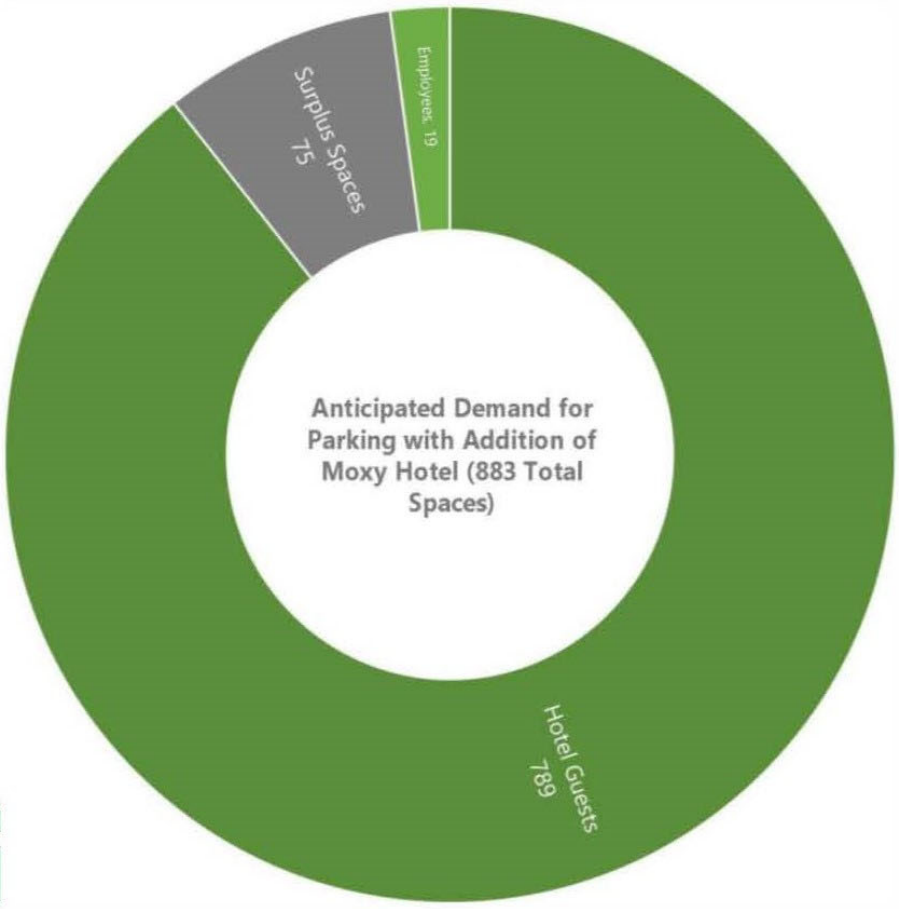
demand from the new hotel. The following illustration summarizes the change in parking demand anticipated from the Moxy Hotel. No added parking is needed at the project site.

If any of the three underlying assumptions prove to be overly conservative, an even larger surplus of available parking could result. If the parking demand is found to be higher than expected, the hotel(s) could put in place transportation demand management strategies like Uber/Lyft partnerships, improving airport/BART shuttle service, and putting in place dynamic pricing for parking according to demand levels.

FEHR PEERS

Existing vs. Anticipated Parking Demand at Proposed Moxy Hotel Site





APPENDIX C: TECHNICAL CALCULATIONS

Intersection 1 **Old Bayshore Highway/Millbrae Avenue** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	353	342	96.9%	27.4	2.5	C
	Through	114	124	108.9%	3.6	1.1	A
	Right Turn						
	Subtotal	467	466	99.9%	21.1	2.3	C
SB	Left Turn						
	Through	150	150	100.1%	14.4	2.8	B
	Right Turn	399	421	105.5%	5.1	1.8	A
	Subtotal	549	571	104.0%	7.6	1.8	A
EB	Left Turn	294	292	99.4%	36.0	5.9	D
	Through						
	Right Turn	885	850	96.0%	9.7	1.4	A
	Subtotal	1,179	1,142	96.9%	16.4	1.6	B
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		2,195	2,179	99.3%	15.1	0.8	B

Intersection 2 **US 101 NB Ramps/Millbrae Avenue** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	712	701	98.5%	25.0	1.8	C
	Through						
	Right Turn	71	77	108.2%	18.2	3.8	B
	Subtotal	783	778	99.4%	24.3	1.7	C
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	1,102	1,056	95.8%	13.8	0.9	B
	Right Turn	727	656	90.3%	14.2	1.3	B
	Subtotal	1,829	1,712	93.6%	14.0	0.7	B
WB	Left Turn						
	Through	242	248	102.3%	14.1	2.9	B
	Right Turn	523	526	100.5%	6.9	0.5	A
	Subtotal	765	773	101.1%	9.2	1.1	A
Total		3,377	3,263	96.6%	15.3	0.7	B

Intersection 3 **US 101 SB Ramps/Millbrae Avenue** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	689	687	99.7%	17.4	1.7	B
	Through						
	Right Turn	979	973	99.4%	19.2	2.2	B
	Subtotal	1,668	1,660	99.5%	18.5	1.9	B
EB	Left Turn						
	Through	1,140	1,043	91.5%	39.2	5.1	D
	Right Turn	602	539	89.6%	7.8	1.4	A
	Subtotal	1,742	1,582	90.8%	28.5	4.2	C
WB	Left Turn						
	Through	876	828	94.5%	31.0	5.2	C
	Right Turn	78	82	105.0%	17.6	8.1	B
	Subtotal	954	909	95.3%	29.8	5.4	C
Total		4,364	4,151	95.1%	24.9	1.6	C

Intersection 4 **Rollins Road/Millbrae Avenue** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	160	158	98.7%	70.9	8.8	E
	Through	140	132	94.2%	80.9	15.6	F
	Right Turn	267	265	99.1%	28.3	9.0	C
	Subtotal	567	554	97.8%	52.9	9.7	D
SB	Left Turn	111	109	97.9%	44.7	5.0	D
	Through	20	18	89.2%	42.3	17.6	D
	Right Turn	45	48	106.1%	9.2	4.4	A
	Subtotal	176	174	99.0%	35.0	4.5	D
EB	Left Turn	356	317	88.9%	75.3	18.2	E
	Through	1,378	1,218	88.4%	41.5	5.3	D
	Right Turn	319	293	91.7%	37.5	9.3	D
	Subtotal	2,053	1,827	89.0%	46.8	5.8	D
WB	Left Turn	426	430	101.0%	61.6	13.3	E
	Through	953	918	96.4%	30.3	4.8	C
	Right Turn	380	364	95.9%	14.8	2.1	B
	Subtotal	1,759	1,713	97.4%	35.0	5.7	C
Total		4,555	4,269	93.7%	42.3	4.2	D

Intersection 1 **Old Bayshore Highway/Millbrae Avenue** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	810	764	94.3%	28.9	2.4	C
	Through	161	165	102.3%	4.6	1.4	A
	Right Turn						
	Subtotal	971	929	95.6%	24.6	2.2	C
SB	Left Turn						
	Through	159	157	98.8%	47.6	24.5	D
	Right Turn	582	583	100.2%	41.9	25.7	D
	Subtotal	741	740	99.9%	43.2	25.3	D
EB	Left Turn	338	325	96.2%	46.2	5.2	D
	Through						
	Right Turn	476	469	98.5%	4.1	0.5	A
	Subtotal	814	794	97.6%	21.3	2.6	C
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		2,526	2,463	97.5%	29.0	7.4	C

Intersection 2 **US 101 NB Ramps/Millbrae Avenue** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	640	608	95.0%	23.5	2.2	C
	Through						
	Right Turn	95	107	112.8%	13.7	2.2	B
	Subtotal	735	715	97.3%	22.0	2.1	C
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	719	702	97.6%	15.7	2.4	B
	Right Turn	880	800	90.9%	18.2	1.8	B
	Subtotal	1,599	1,502	93.9%	17.0	1.5	B
WB	Left Turn						
	Through	410	406	99.0%	19.1	1.8	B
	Right Turn	980	967	98.7%	11.1	0.5	B
	Subtotal	1,390	1,373	98.8%	13.5	0.7	B
Total		3,724	3,590	96.4%	16.7	0.8	B

Intersection 3 **US 101 SB Ramps/Millbrae Avenue** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	454	444	97.8%	22.5	2.8	C
	Through						
	Right Turn	967	958	99.1%	21.1	2.8	C
	Subtotal	1,421	1,402	98.7%	21.6	2.6	C
EB	Left Turn						
	Through	1,145	1,085	94.8%	35.5	3.7	D
	Right Turn	678	610	90.0%	7.3	0.7	A
	Subtotal	1,823	1,695	93.0%	25.4	3.1	C
WB	Left Turn						
	Through	1,001	968	96.7%	28.7	3.0	C
	Right Turn	49	46	94.8%	16.1	5.6	B
	Subtotal	1,050	1,015	96.7%	28.1	2.9	C
Total		4,294	4,113	95.8%	24.8	1.7	C

Intersection 4 **Rollins Road/Millbrae Avenue** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	402	409	101.6%	63.5	2.4	E
	Through	42	46	108.8%	48.7	11.0	D
	Right Turn	567	563	99.2%	28.1	6.3	C
	Subtotal	1,011	1,017	100.6%	43.3	4.1	D
SB	Left Turn	304	278	91.3%	53.0	4.0	D
	Through	50	47	93.7%	45.0	14.3	D
	Right Turn	205	197	95.9%	26.1	4.1	C
	Subtotal	559	521	93.2%	42.6	3.6	D
EB	Left Turn	78	73	94.0%	67.5	10.4	E
	Through	1,061	971	91.5%	44.9	8.7	D
	Right Turn	286	251	87.8%	34.1	8.6	C
	Subtotal	1,425	1,296	90.9%	44.1	8.2	D
WB	Left Turn	346	309	89.2%	55.2	8.6	E
	Through	1,391	1,389	99.9%	27.8	2.5	C
	Right Turn	161	156	96.8%	7.0	1.1	A
	Subtotal	1,898	1,854	97.7%	30.6	3.4	C
Total		4,893	4,687	95.8%	38.4	3.3	D

SimTraffic Post-Processor **Millbrae Moxy Hotel**
Average Results from 10 Runs **Existing Plus Project**
Volume and Delay by Movement **AM Peak Hour**

Intersection 1 **Old Bayshore Highway/Millbrae Avenue** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	353	333	94.2%	28.2	2.2	C
	Through	121	118	97.4%	2.9	1.1	A
	Right Turn						
	Subtotal	474	450	95.0%	21.6	2.2	C
SB	Left Turn						
	Through	156	161	103.1%	17.3	2.5	B
	Right Turn	403	404	100.3%	6.0	1.2	A
	Subtotal	559	565	101.1%	9.1	0.9	A
EB	Left Turn	327	323	98.6%	40.2	4.7	D
	Through						
	Right Turn	885	862	97.4%	10.8	2.7	B
	Subtotal	1,212	1,185	97.7%	18.9	2.8	B
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		2,245	2,200	98.0%	16.9	1.7	B

Intersection 2 **US 101 NB Ramps/Millbrae Avenue** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	712	693	97.3%	24.0	1.6	C
	Through						
	Right Turn	80	89	111.4%	19.7	3.9	B
	Subtotal	792	782	98.8%	23.5	1.8	C
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	1,121	1,069	95.4%	15.1	1.9	B
	Right Turn	727	654	89.9%	13.0	1.0	B
	Subtotal	1,848	1,723	93.2%	14.4	1.0	B
WB	Left Turn						
	Through	257	255	99.1%	13.5	1.6	B
	Right Turn	537	512	95.3%	6.7	0.4	A
	Subtotal	794	766	96.5%	8.9	0.7	A
Total		3,434	3,271	95.3%	15.3	0.9	B

Intersection 3 **US 101 SB Ramps/Millbrae Avenue** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	702	680	96.9%	17.9	2.0	B
	Through						
	Right Turn	979	947	96.8%	18.9	2.4	B
	Subtotal	1,681	1,628	96.8%	18.5	2.0	B
EB	Left Turn						
	Through	1,146	1,065	92.9%	39.0	2.9	D
	Right Turn	602	537	89.2%	7.9	0.7	A
	Subtotal	1,748	1,602	91.7%	28.6	2.1	C
WB	Left Turn						
	Through	882	833	94.4%	31.2	5.8	C
	Right Turn	87	85	97.5%	16.6	6.5	B
	Subtotal	969	918	94.7%	29.9	5.8	C
Total		4,398	4,148	94.3%	24.9	2.0	C

Intersection 4 **Rollins Road/Millbrae Avenue** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	160	147	91.7%	66.0	9.1	E
	Through	140	143	102.3%	71.9	10.2	E
	Right Turn	267	263	98.5%	23.4	3.9	C
	Subtotal	567	553	97.5%	47.5	5.6	D
SB	Left Turn	113	106	93.5%	50.1	8.4	D
	Through	20	22	109.4%	49.0	15.3	D
	Right Turn	45	43	95.6%	10.1	3.8	B
	Subtotal	178	170	95.8%	40.1	7.4	D
EB	Left Turn	356	301	84.7%	65.4	8.6	E
	Through	1,382	1,263	91.4%	41.6	7.2	D
	Right Turn	319	295	92.6%	37.1	9.5	D
	Subtotal	2,057	1,860	90.4%	44.7	7.0	D
WB	Left Turn	426	436	102.3%	57.8	7.2	E
	Through	957	926	96.7%	29.9	3.9	C
	Right Turn	382	364	95.2%	14.2	3.6	B
	Subtotal	1,765	1,725	97.8%	33.7	3.7	C
Total		4,567	4,309	94.3%	40.4	4.0	D

SimTraffic Post-Processor **Millbrae Moxy Hotel**
Average Results from 10 Runs **Existing Plus Project**
Volume and Delay by Movement **PM Peak Hour**

Intersection 1 **Old Bayshore Highway/Millbrae Avenue** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	810	791	97.7%	26.5	3.9	C
	Through	168	172	102.4%	4.2	1.5	A
	Right Turn						
	Subtotal	978	963	98.5%	22.5	3.2	C
SB	Left Turn						
	Through	164	155	94.6%	57.0	16.0	E
	Right Turn	585	563	96.3%	48.2	22.1	D
	Subtotal	749	718	95.9%	50.2	20.5	D
EB	Left Turn	368	358	97.1%	49.1	4.1	D
	Through						
	Right Turn	476	463	97.3%	4.3	0.6	A
	Subtotal	844	821	97.2%	23.8	2.1	C
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		2,571	2,503	97.3%	30.8	5.9	C

Intersection 2 **US 101 NB Ramps/Millbrae Avenue** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	640	613	95.8%	25.6	2.8	C
	Through						
	Right Turn	102	96	93.7%	15.1	2.7	B
	Subtotal	742	709	95.5%	24.2	2.5	C
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	734	718	97.8%	15.0	3.2	B
	Right Turn	880	793	90.1%	17.3	1.1	B
	Subtotal	1,614	1,511	93.6%	16.3	1.6	B
WB	Left Turn						
	Through	424	403	95.1%	18.7	3.3	B
	Right Turn	992	985	99.3%	11.1	0.7	B
	Subtotal	1,416	1,388	98.0%	13.3	1.3	B
Total		3,772	3,608	95.6%	16.6	0.8	B

Intersection 3 **US 101 SB Ramps/Millbrae Avenue** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Percent	Total Delay (sec/veh) Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	464	448	96.6%	24.3	2.5	C
	Through						
	Right Turn	967	962	99.5%	22.2	2.8	C
	Subtotal	1,431	1,410	98.5%	22.9	2.3	C
EB	Left Turn						
	Through	1,150	1,085	94.3%	35.9	4.1	D
	Right Turn	678	637	94.0%	7.8	0.6	A
	Subtotal	1,828	1,722	94.2%	25.5	3.2	C
WB	Left Turn						
	Through	1,007	974	96.7%	26.9	2.2	C
	Right Turn	57	47	82.2%	13.5	6.0	B
	Subtotal	1,064	1,021	95.9%	26.3	2.3	C
Total		4,323	4,153	96.1%	24.8	2.2	C

Intersection 4 **Rollins Road/Millbrae Avenue** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Percent	Total Delay (sec/veh) Average	Std. Dev.	LOS
NB	Left Turn	402	385	95.8%	65.5	8.6	E
	Through	42	40	95.1%	64.8	17.6	E
	Right Turn	567	557	98.3%	34.8	17.3	C
	Subtotal	1,011	982	97.2%	48.3	12.7	D
SB	Left Turn	306	286	93.4%	53.5	5.6	D
	Through	50	55	109.1%	54.5	13.2	D
	Right Turn	205	210	102.6%	26.3	5.3	C
	Subtotal	561	551	98.2%	43.1	2.7	D
EB	Left Turn	78	65	83.2%	73.1	16.7	E
	Through	1,064	1,001	94.1%	45.9	9.3	D
	Right Turn	286	258	90.2%	37.7	9.1	D
	Subtotal	1,428	1,324	92.7%	45.6	9.0	D
WB	Left Turn	346	331	95.6%	55.5	17.0	E
	Through	1,395	1,374	98.5%	27.7	2.9	C
	Right Turn	163	149	91.6%	6.1	0.6	A
	Subtotal	1,904	1,854	97.4%	30.8	4.5	C
Total		4,904	4,711	96.1%	40.1	4.9	D

SimTraffic Post-Processor **Millbrae Moxy Hotel**
Average Results from 10 Runs **2040 No Project**
Volume and Delay by Movement **AM Peak Hour**

Intersection 1 **Old Bayshore Highway/Millbrae Avenue** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	620	565	91.2%	27.2	2.6	C
	Through	130	125	96.0%	4.2	1.2	A
	Right Turn						
	Subtotal	750	690	92.0%	23.0	2.4	C
SB	Left Turn						
	Through	190	179	94.2%	28.0	4.6	C
	Right Turn	560	546	97.6%	18.9	7.5	B
	Subtotal	750	725	96.7%	21.1	6.5	C
EB	Left Turn	340	300	88.3%	37.8	4.6	D
	Through						
	Right Turn	1,230	1,115	90.7%	13.5	1.5	B
	Subtotal	1,570	1,415	90.2%	18.7	1.9	B
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		3,070	2,831	92.2%	20.4	2.3	C

Intersection 2 **US 101 NB Ramps/Millbrae Avenue** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	1,000	967	96.7%	33.4	6.4	C
	Through						
	Right Turn	290	278	95.7%	31.7	6.7	C
	Subtotal	1,290	1,245	96.5%	33.0	6.4	C
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	1,270	1,152	90.7%	23.0	4.1	C
	Right Turn	840	672	80.0%	14.1	1.5	B
	Subtotal	2,110	1,823	86.4%	19.8	2.6	B
WB	Left Turn						
	Through	660	589	89.2%	27.1	7.7	C
	Right Turn	540	506	93.7%	12.8	4.5	B
	Subtotal	1,200	1,095	91.2%	20.5	6.6	C
Total		4,600	4,163	90.5%	24.0	2.8	C

Intersection 3 **US 101 SB Ramps/Millbrae Avenue** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	860	834	96.9%	26.0	2.4	C
	Through						
	Right Turn	1,100	1,041	94.6%	29.1	3.1	C
	Subtotal	1,960	1,875	95.6%	27.7	2.7	C
EB	Left Turn						
	Through	1,250	994	79.5%	33.6	2.9	C
	Right Turn	660	513	77.7%	6.1	0.5	A
	Subtotal	1,910	1,507	78.9%	24.2	2.3	C
WB	Left Turn						
	Through	1,160	1,082	93.3%	47.5	18.2	D
	Right Turn	500	405	80.9%	47.5	32.2	D
	Subtotal	1,660	1,487	89.6%	47.2	21.8	D
Total		5,530	4,869	88.0%	32.7	6.3	C

Intersection 4 **Rollins Road/Millbrae Avenue** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	200	192	96.2%	156.9	19.6	F
	Through	270	206	76.2%	194.6	29.0	F
	Right Turn	340	220	64.6%	150.0	25.0	F
	Subtotal	810	618	76.3%	167.1	24.4	F
SB	Left Turn	230	214	92.8%	49.8	4.3	D
	Through	80	73	91.7%	46.2	10.4	D
	Right Turn	170	166	97.8%	13.7	5.3	B
	Subtotal	480	453	94.4%	36.1	3.0	D
EB	Left Turn	590	436	73.9%	104.7	39.8	F
	Through	1,420	1,132	79.7%	46.2	9.7	D
	Right Turn	560	452	80.8%	51.5	13.4	D
	Subtotal	2,570	2,021	78.6%	60.2	16.2	E
WB	Left Turn	500	466	93.2%	57.8	5.4	E
	Through	1,010	941	93.1%	48.4	4.4	D
	Right Turn	610	553	90.7%	38.9	10.4	D
	Subtotal	2,120	1,960	92.4%	48.0	4.9	D
Total		5,980	5,052	84.5%	66.3	7.7	E

SimTraffic Post-Processor **Millbrae Moxy Hotel**
Average Results from 10 Runs **2040 No Project**
Volume and Delay by Movement **PM Peak Hour**

Intersection 1 **Old Bayshore Highway/Millbrae Avenue** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	1,210	1,149	95.0%	39.2	6.1	D
	Through	210	202	96.0%	13.7	4.7	B
	Right Turn						
	Subtotal	1,420	1,351	95.1%	35.4	5.9	D
SB	Left Turn						
	Through	200	137	68.5%	129.7	10.8	F
	Right Turn	640	434	67.7%	143.4	9.8	F
	Subtotal	840	571	67.9%	140.3	9.7	F
EB	Left Turn	420	367	87.4%	46.3	10.0	D
	Through						
	Right Turn	860	762	88.6%	6.0	0.5	A
	Subtotal	1,280	1,129	88.2%	19.2	3.8	B
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		3,540	3,050	86.2%	49.0	3.5	D

Intersection 2 **US 101 NB Ramps/Millbrae Avenue** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	770	766	99.4%	26.8	1.3	C
	Through						
	Right Turn	140	142	101.5%	22.9	2.9	C
	Subtotal	910	908	99.8%	26.2	1.2	C
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	1,120	998	89.1%	29.2	6.2	C
	Right Turn	1,060	871	82.2%	23.0	3.6	C
	Subtotal	2,180	1,869	85.7%	26.3	4.8	C
WB	Left Turn						
	Through	740	637	86.1%	26.9	3.4	C
	Right Turn	1,140	973	85.4%	15.0	0.6	B
	Subtotal	1,880	1,611	85.7%	19.7	1.5	B
Total		4,970	4,388	88.3%	23.9	2.4	C

Intersection 3 **US 101 SB Ramps/Millbrae Avenue** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	880	759	86.2%	37.1	2.9	D
	Through						
	Right Turn	1,160	1,050	90.5%	38.2	2.9	D
	Subtotal	2,040	1,809	88.7%	37.7	2.6	D
EB	Left Turn						
	Through	1,300	1,161	89.3%	33.2	1.5	C
	Right Turn	940	810	86.2%	4.9	0.3	A
	Subtotal	2,240	1,971	88.0%	21.6	1.2	C
WB	Left Turn						
	Through	1,290	1,208	93.6%	53.2	17.6	D
	Right Turn	220	167	76.1%	47.7	24.0	D
	Subtotal	1,510	1,375	91.1%	52.6	18.3	D
Total		5,790	5,156	89.0%	35.5	4.7	D

Intersection 4 **Rollins Road/Millbrae Avenue** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	490	444	90.6%	82.7	13.2	F
	Through	90	85	94.7%	82.7	21.0	F
	Right Turn	650	586	90.2%	62.0	13.5	E
	Subtotal	1,230	1,116	90.7%	71.9	13.2	E
SB	Left Turn	480	402	83.7%	106.5	21.8	F
	Through	280	222	79.4%	114.4	20.8	F
	Right Turn	420	330	78.6%	87.5	13.4	F
	Subtotal	1,180	954	80.9%	101.9	18.4	F
EB	Left Turn	240	207	86.1%	84.8	21.9	F
	Through	1,190	1,045	87.8%	45.5	8.7	D
	Right Turn	300	253	84.4%	49.1	11.7	D
	Subtotal	1,730	1,505	87.0%	51.5	8.9	D
WB	Left Turn	480	421	87.7%	74.3	12.0	E
	Through	1,590	1,386	87.2%	57.2	9.1	E
	Right Turn	310	288	92.8%	18.9	5.1	B
	Subtotal	2,380	2,094	88.0%	55.5	8.7	E
Total		6,520	5,669	86.9%	65.1	4.7	E

SimTraffic Post-Processor **Millbrae Moxy Hotel**
Average Results from 10 Runs **2040 Plus Project**
Volume and Delay by Movement **AM Peak Hour**

Intersection 1 **Old Bayshore Highway/Millbrae Avenue** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	620	543	87.5%	40.8	31.6	D
	Through	137	111	81.3%	7.8	9.9	A
	Right Turn						
	Subtotal	757	654	86.4%	34.7	25.8	C
SB	Left Turn						
	Through	196	183	93.3%	31.5	20.2	C
	Right Turn	564	510	90.5%	23.4	19.3	C
	Subtotal	760	693	91.2%	25.6	19.3	C
EB	Left Turn	373	321	86.2%	38.8	4.8	D
	Through						
	Right Turn	1,230	1,135	92.3%	13.3	1.3	B
	Subtotal	1,603	1,457	90.9%	18.9	1.6	B
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		3,120	2,804	89.9%	23.7	9.1	C

Intersection 2 **US 101 NB Ramps/Millbrae Avenue** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	1,000	968	96.8%	36.3	4.9	D
	Through						
	Right Turn	299	296	99.0%	34.8	4.4	C
	Subtotal	1,299	1,265	97.3%	35.9	4.7	D
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	1,289	1,149	89.2%	23.4	4.1	C
	Right Turn	840	651	77.5%	13.9	1.4	B
	Subtotal	2,129	1,801	84.6%	20.0	2.6	B
WB	Left Turn						
	Through	675	598	88.6%	35.8	22.8	D
	Right Turn	554	478	86.3%	17.6	12.2	B
	Subtotal	1,229	1,076	87.6%	27.8	18.4	C
Total		4,657	4,141	88.9%	26.6	5.4	C

Intersection 3 **US 101 SB Ramps/Millbrae Avenue** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	873	815	93.3%	26.6	2.3	C
	Through						
	Right Turn	1,100	1,076	97.8%	29.9	3.5	C
	Subtotal	1,973	1,890	95.8%	28.5	2.9	C
EB	Left Turn						
	Through	1,256	993	79.0%	33.9	3.4	C
	Right Turn	660	499	75.6%	6.0	0.8	A
	Subtotal	1,916	1,491	77.8%	24.5	2.5	C
WB	Left Turn						
	Through	1,166	1,064	91.3%	58.3	19.4	E
	Right Turn	509	399	78.4%	68.2	31.1	E
	Subtotal	1,675	1,463	87.3%	60.8	22.2	E
Total		5,564	4,845	87.1%	37.0	6.4	D

Intersection 4 **Rollins Road/Millbrae Avenue** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	200	178	88.9%	169.3	31.5	F
	Through	270	200	74.1%	209.3	39.1	F
	Right Turn	340	228	67.0%	165.4	37.1	F
	Subtotal	810	606	74.8%	181.1	36.1	F
SB	Left Turn	232	206	88.7%	49.4	5.2	D
	Through	80	81	100.8%	48.2	11.1	D
	Right Turn	170	188	110.7%	14.6	2.7	B
	Subtotal	482	475	98.5%	35.3	4.2	D
EB	Left Turn	590	440	74.6%	123.2	34.6	F
	Through	1,424	1,127	79.1%	47.0	8.4	D
	Right Turn	560	443	79.1%	47.3	15.7	D
	Subtotal	2,574	2,010	78.1%	63.8	11.3	E
WB	Left Turn	500	476	95.2%	56.1	5.0	E
	Through	1,014	978	96.5%	48.1	2.6	D
	Right Turn	612	546	89.2%	31.9	4.5	C
	Subtotal	2,126	1,999	94.0%	45.6	3.1	D
Total		5,992	5,090	84.9%	67.6	3.8	E

SimTraffic Post-Processor **Millbrae Moxy Hotel**
Average Results from 10 Runs **2040 Plus Project**
Volume and Delay by Movement **PM Peak Hour**

Intersection 1 **Old Bayshore Highway/Millbrae Avenue** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	1,210	1,145	94.6%	42.3	7.2	D
	Through	217	215	98.9%	15.7	5.5	B
	Right Turn						
	Subtotal	1,427	1,359	95.3%	38.1	7.2	D
SB	Left Turn						
	Through	205	124	60.7%	138.5	22.0	F
	Right Turn	643	422	65.6%	149.4	24.7	F
	Subtotal	848	546	64.4%	146.9	23.8	F
EB	Left Turn	450	391	86.9%	49.7	6.5	D
	Through						
	Right Turn	860	753	87.6%	5.9	0.5	A
	Subtotal	1,310	1,144	87.4%	20.9	2.5	C
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		3,585	3,050	85.1%	50.9	4.8	D

Intersection 2 **US 101 NB Ramps/Millbrae Avenue** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	770	758	98.5%	28.5	2.5	C
	Through						
	Right Turn	147	131	89.3%	25.5	4.9	C
	Subtotal	917	890	97.0%	28.1	2.5	C
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	1,135	1,031	90.8%	30.8	5.8	C
	Right Turn	1,060	842	79.5%	22.5	3.9	C
	Subtotal	2,195	1,874	85.4%	27.1	4.4	C
WB	Left Turn						
	Through	754	651	86.4%	28.1	4.1	C
	Right Turn	1,152	974	84.6%	15.4	1.3	B
	Subtotal	1,906	1,625	85.3%	20.5	2.3	C
Total		5,018	4,389	87.5%	24.9	2.4	C

Intersection 3 **US 101 SB Ramps/Millbrae Avenue** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	890	790	88.8%	38.6	3.3	D
	Through						
	Right Turn	1,160	1,015	87.5%	39.4	2.8	D
	Subtotal	2,050	1,805	88.0%	39.0	2.8	D
EB	Left Turn						
	Through	1,305	1,124	86.1%	32.1	1.9	C
	Right Turn	940	827	88.0%	4.7	0.3	A
	Subtotal	2,245	1,951	86.9%	20.5	2.0	C
WB	Left Turn						
	Through	1,296	1,199	92.5%	44.8	13.7	D
	Right Turn	228	180	79.0%	37.4	19.0	D
	Subtotal	1,524	1,379	90.5%	43.9	14.1	D
Total		5,819	5,135	88.2%	33.4	4.3	C

Intersection 4 **Rollins Road/Millbrae Avenue** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	490	453	92.5%	84.5	11.7	F
	Through	90	76	84.9%	89.0	23.6	F
	Right Turn	650	558	85.8%	65.6	16.9	E
	Subtotal	1,230	1,087	88.4%	75.2	14.8	E
SB	Left Turn	482	401	83.1%	103.9	22.7	F
	Through	280	222	79.1%	111.7	22.1	F
	Right Turn	420	350	83.3%	85.7	18.3	F
	Subtotal	1,182	972	82.2%	99.1	20.7	F
EB	Left Turn	240	208	86.6%	117.8	42.0	F
	Through	1,193	1,068	89.5%	46.9	9.7	D
	Right Turn	300	242	80.8%	53.9	9.3	D
	Subtotal	1,733	1,518	87.6%	57.9	9.4	E
WB	Left Turn	480	387	80.6%	74.1	8.6	E
	Through	1,594	1,339	84.0%	61.7	8.3	E
	Right Turn	312	254	81.4%	19.7	4.3	B
	Subtotal	2,386	1,980	83.0%	58.9	7.1	E
Total		6,531	5,557	85.1%	68.5	3.8	E

FEHR PEERS

MEMORANDUM

Date: April 7, 2020
To: Sam Fielding and Roscoe Mata, City of Millbrae
Cc: Darcy Kremin, Rincon Associates
From: Mike Hawkins, PE, Fehr & Peers
Subject: Trip Generation Rates for the Proposed Millbrae Moxy Hotel

SF19-1032

The following technical memorandum summarizes vehicle trip generation rates for the proposed Moxy Hotel (the project) located in Millbrae, California. The project site is currently occupied by two hotels – the Aloft San Francisco Airport and the Westin San Francisco Airport – and a shared surface parking lot that serves both hotels. The proposed Moxy would be added to the project site such that the existing two hotels would continue to operate, and the three hotels would share one surface parking lot. This memorandum summarizes the key differences between the three hotels on site, includes descriptions of various trip generation rates for hotel land uses, and provides a comparison of vehicle trips generated by the project using each of the trip generation rates.

Hotel Descriptions

The existing Westin and Aloft include several supporting facilities such as a full-service restaurant and extensive meeting facilities. The proposed Moxy will not include such facilities. Descriptions of each of the three hotels are provided below:

Existing Westin: 421 rooms; full-service restaurant, 11 different event rooms, with a total of approximately 13,000 square feet of meeting/event space, including a space with capacity for up to 650 guests.

Existing Aloft: 298 rooms; hotel bar with snack menu (including live music events); 1 event room with 600 square feet and capacity for up to 50 guests.

Proposed Moxy: 209 rooms; no restaurant; lobby bar; no designated event space.

Trip Generation

Trip generation for new projects is typically calculated using the ITE *Trip Generation Manual* (10th Edition, 2017). ITE rates are based on national averages for similar land use types. However, ITE recommends using locally collected trip generation data when available and appropriate rather than using generic national averages included in the manual.

Site-Specific Rates

Since the project site is currently occupied by two existing hotels, Fehr & Peers collected driveways counts at existing driveways to calculate a site-specific trip generation rate for the existing hotels. Driveway counts are inclusive of all vehicle trips entering and exiting the site, including TNCs and vehicle trips associated with the Park 'N Fly that currently operates at the site. **Table 1** presents the trip rate and trip generation for the existing hotels on site.

TABLE 1: EXISTING HOTEL TRIP GENERATION

Time Period	Hotel Rooms	Observed Traffic Volume[1]			Observed Trip Generation Rate[2]		
		Total	In	Out	Total	In	Out
AM Peak Hour (7:45-8:45)	719	297	146	151	0.41	49%	51%
PM Peak Hour (4:15-5:15)		253	113	140	0.35	45%	55%
Daily (Weekday)		3,899	--	--	5.42	--	--

Source: Fehr & Peers, 2019.

Notes:

1. Based on average weekday (Monday – Thursday) traffic counts collected at existing site driveways in October 2019.
2. Trip generation rate = (observed traffic count) / (hotel rooms)

However, as noted above, the project differs substantially from the existing on-site hotels in that it does not include any restaurant or event space.

ITE Trip Generation Rates

The ITE *Trip Generation Manual* includes descriptions for each land use that it provides trip generation rates for. The descriptions for Land Use 310 Hotel and Land Use 312 Business Hotel are included below:

Land Use 310 – Hotel. *Description: A hotel is a place of lodging that provides sleeping accommodations and supporting facilities such as restaurants, cocktail lounges, meeting and banquet rooms or convention facilities, limited recreational facilities (pool, fitness room), and/or other retail and service shops. All suites hotel (Land Use 311), business hotel (Land Use 312), motel (Land Use 320), and resort hotel (Land Use 330) are related uses.*

Land Use 312 – Business Hotel. *Description: A business hotel is a place of lodging aimed toward the business traveler but also accommodates a growing number of recreational travelers. These hotels provide sleeping accommodations and other limited facilities, such as a breakfast buffet bar and afternoon beverage bar (no lunch or dinner is served and limited meeting facilities are provided). Each unit is a large single room. Business hotels provide very few or none of the supporting facilities provided at hotels or suite hotels and are usually smaller in size. Hotel (Land Use 310), all suites hotel (Land Use 311), motel (Land Use 320), and resort hotel (Land Use 330) are related uses.*

Trip Generation Comparison

Table 2 summarizes the potential trip generating potential of the proposed 209-room Moxy hotel using three different trip generation rates – ITE Hotel, ITE Business Hotel, and Custom Site-Specific based on existing driveway counts.

TABLE 2: PROPOSED MOXY HOTEL TRIP GENERATION COMPARISON

Trip Generation Rate	Hotel Rooms	Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
ITE – Hotel[1]	209	1,933	58	41	99	67	64	131
ITE – Business Hotel[1]		840	34	48	82	37	30	67
Site-Specific[2]		1,133	42	44	86	33	41	73

Source: Fehr & Peers, 2020.

Notes:

1. Base on ITE *Trip Generation 10th Edition* for land uses 310 and 312.
2. Based on traffic counts collected in October 2019.

As shown in Table 2, the ITE – Hotel rate results in the highest vehicle trip generation, while the ITE – Business Hotel rate results in the lowest vehicle trip generation for the project. Based on the hotel descriptions above, the existing Aloft and Westin would be expected to generate trips more similar to the ITE – Hotel rate but actually generate fewer trips due to site-specific conditions (such as

proximity to SFO, proximity to regional transit, availability of restaurants nearby, guest demographics, guests' propensity to rent a car, and other aspects that are difficult to quantify). Further, based on the hotel descriptions above, the proposed Moxy would be expected to generate trips at a lower rate than the existing hotels due to the lack of restaurant and event facilities. Therefore, it would be reasonable to use the ITE – Business Hotel rates for purposes of calculating project trip generation.

Conclusion

Based on the hotel descriptions and the ITE land use descriptions, the existing hotels located on the project site are expected to generate vehicle trips at a rate similar to the ITE – Hotel rate, but when surveyed actually generated trips at a lower rate. Considering that the types of facilities offered by the existing hotels are not entirely representative of the facilities that will be offered by the proposed Moxy, the project is expected to generate trips at a lower rate than the existing site-specific rate, and the ITE – Business Hotel trip generation rate may be appropriate.

The Transportation Study prepared by Fehr & Peers and dated December 2019 used the site-specific trip generation rate to calculate expected project trip generation for the purposes of analyzes the project's effect on the transportation network. That represents a conservative analysis compared to using the ITE – Business Hotel trip rate. The study found no adverse effects to transportation during the peak periods and the conclusions of the report remain valid.