Appendix L – Transportation Impact Analysis

620 Airport Boulevard

Final Transportation Impact Analysis

Prepared for:
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January 2023

SF21-1183

FEHR PEERS

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1. Project Description

This transportation impact analysis (TIA) evaluates potential transportation impacts associated with the 620 Airport Boulevard development located at 620 Airport Boulevard in Burlingame, California, herein referred to as the "Project". The Project would redevelop a 3.7 acre, predominately paved site, that is currently used as a short- and long-term parking facility for SFO. The Project site plan includes 483,380 square feet of building area for two (2) eight-story buildings and 867 parking stalls split across podium and below-grade parking. The proposed uses include Office / Research & Development (R&D).

The Project site is located south of Anza Lagoon along Airport Boulevard in the City of Burlingame's Bayfront employment district. The site is bound by Airport Boulevard to the south, Anza Lagoon to the north and west, and an existing hotel to the east. Primary vehicle access would enter two levels of below-grade parking, accessed from three driveways off Airport Boulevard. The central vehicular ingress/egress also provides a vehicular plaza-level drop-off as well as pedestrian access between buildings. Each driveway can serve an emergency vehicle access function.

Primary bicycle and pedestrian access would be provided via Airport Boulevard and the Bay Trail along the Anza Lagoon. This portion of the Bay Trail is within the project boundary. Existing sidewalks along Airport Boulevard connect to an existing Commute.org shuttle stop located approximately 200-feet east from the Project site along Airport Boulevard. The stop is served by Commute.org's Burlingame Point Shuttle which provides weekday peak commute period service to the Millbrae BART/Caltrain intermodal station.

The Project is subject to the City of Burlingame's Transportation Demand Management (TDM) ordinance, which applies to, among other project types, new non-residential projects larger than 10,000 square feet and requires that project sponsors incorporate measures and strategies to reduce vehicle trip generation rates 20% lower than the most recent edition of the Institute of Transportation Engineers (ITE) *Trip Generation Manual*. The ordinance requires that annual monitoring reports be submitted to the City of Burlingame that evaluates the TDM plan's effectiveness in meeting the trip reduction target.

The Project's TDM plan includes site enhancement strategies, on-site amenities, and programmatic and service strategies that encourage the use of alternative modes of travel. The measures will be monitored to ensure that they result in compliance with the 20% trip reduction target required by the ordinance; failure to reach this goal would result in the implementation of additional measures.

Figure 1 shows the Project location, nearby intersections, and the surrounding roadway system. **Figure 2** presents the Project site plan prepared by DGA Architects. All figures in the report can be found at the end of their respective sections.

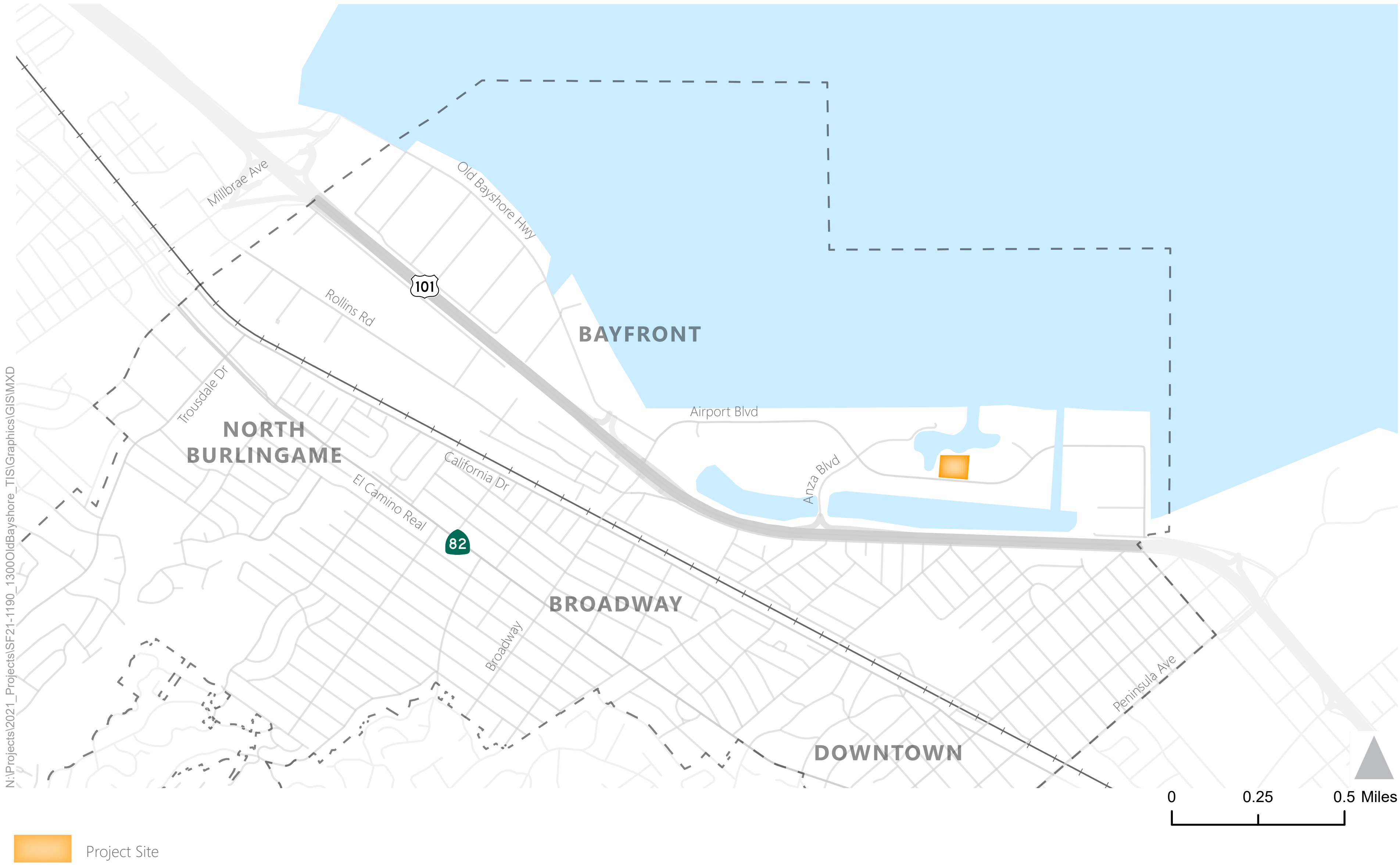
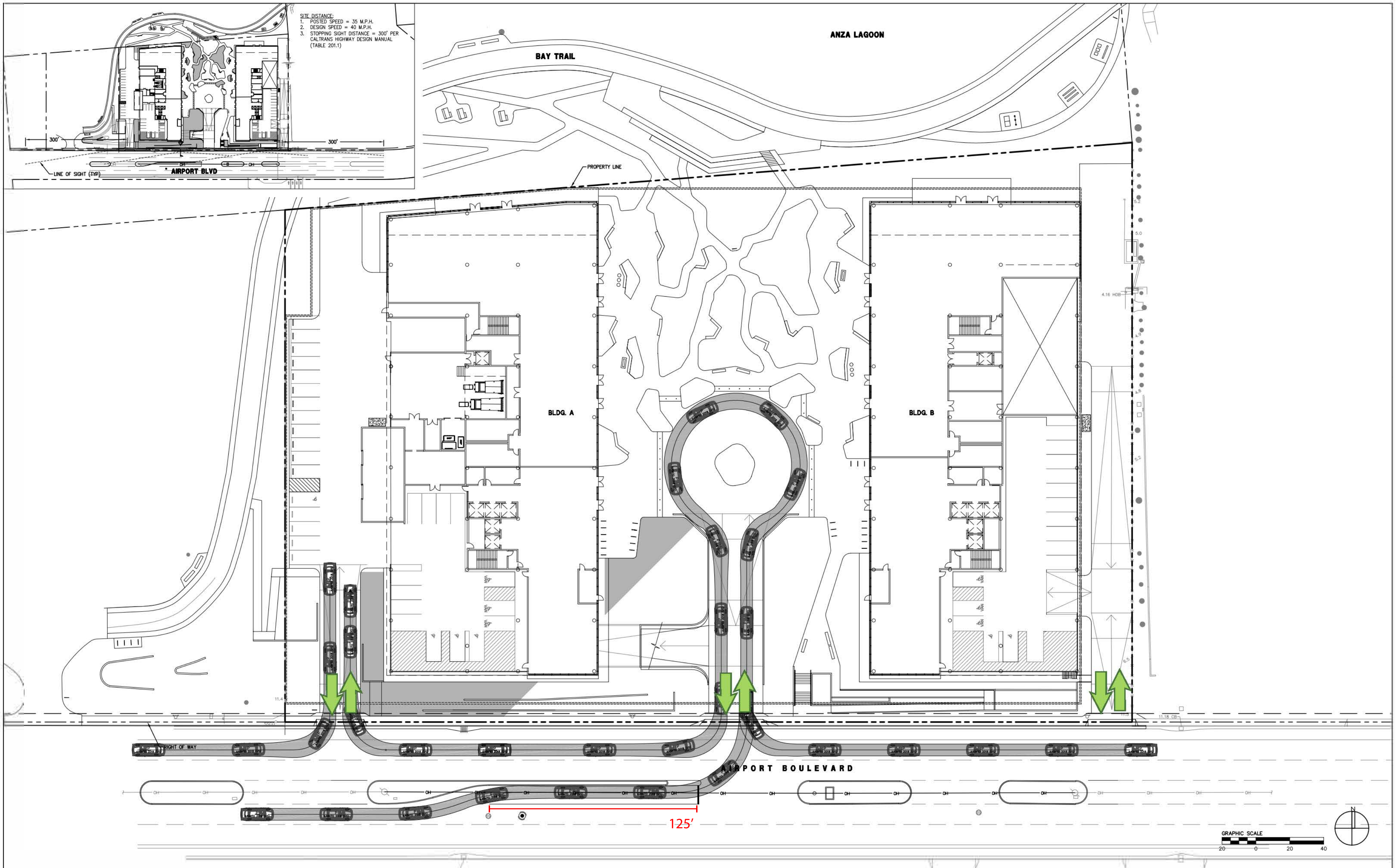


Figure 1

Project Location
620 Airport Boulevard



Right-in/Right-out Driveway

Figure 2

Project Site Plan
620 Airport Boulevard

2. Environmental Setting

This section describes the existing transportation and circulation setting in the vicinity of the Project site: the existing roadway network, transit network and service, pedestrian conditions, bicycle conditions, and emergency vehicle access. A description of agencies with jurisdiction over transportation in the City of Burlingame and a summary of relevant plans and policies are provided in **Appendix B**.

2.1 Roadway Facilities

The Project site is located south of Anza Lagoon along Airport Boulevard at 620 Airport Boulevard in the City of Burlingame's Bayfront employment area which is situated between US-101 and the San Francisco Bay. Spanning the length of the City of Burlingame from the City of Millbrae in the North to the City of San Mateo in the south, the Bayfront area is long and narrow, characterized by exclusively commercial land uses, and is served by one arterial roadway that parallels and connects US-101 to the area at four freeway access points. North of the Broadway/US-101 interchange, this primary arterial is Old Bayshore Highway while to the south it is Airport Boulevard.

Regional vehicle access to the Project site is provided via U.S. Highway 101 (US-101), Anza Boulevard, and Airport Boulevard. Anza Boulevard via Airport Boulevard provides access to northbound US-101 and Airport Boulevard provides access to southbound US-101 either from the US-101/Broadway interchange to the north or the US-101/Poplar Avenue interchange to the South. Project site vehicular access is provided via three driveways which are all right-in/right-out driveways, all on the Airport Boulevard frontage (as shown on **Figure 2**). Relevant roadway plans and policies (e.g., Burlingame General Plan, Burlingame Bicycle and Pedestrian Master Plan) are discussed in **Appendix B**.

Key local roadways in the vicinity of the Project site are described below. Street classifications are from the Burlingame General Plan mobility chapter.

- *US-101* is an eight-lane freeway and principal north-south roadway connection between San Francisco, San José, and intermediate San Francisco Peninsula cities. In the City of Burlingame, US-101 is located approximately 800 feet south of the Project site and serves the City's Bayfront employment area with four primary access points: Peninsula Avenue (northbound access via Airport Boulevard and southbound access via Poplar Avenue), Anza Boulevard, Broadway, and Millbrae Avenue. Near the Project, US-101 defines the Bayfront area's south and western edge and is a barrier to east-west bicycle and pedestrian connectivity.
- *Airport Boulevard* is an east-west Mixed-Use Arterial that connects US-101 at Broadway to the west and Peninsula Avenue and the northbound US-101 ramps to the east. Between Anza Boulevard and Broadway, Airport Boulevard is one lane in each direction and east of Anza Boulevard widens to two lanes in each direction with a two-way left turn lane before narrowing to one lane in each direction at the boundary with the City of San Mateo. Airport Boulevard is the primary arterial that serves the southern half of the Bayfront area.

- *Anza Boulevard* is a north-south Mixed-Use Collector that connects Airport Boulevard to the north and US-101 to the south, where the roadway begins and ends as on- and off-ramps to northbound US-101. North of Airport Boulevard, the roadway continues to the north approximately 200-feet before becoming a private street that serves several properties before terminating at the Anza Lagoon. The street is one lane in each direction except for the approaches to the Airport Boulevard intersection.
- *Broadway* is a north-south corridor with three street classifications. Between Vancouver Avenue and El Camino Real, the street is a neighborhood collector; between El Camino Real and California Drive, a Commercial Arterial, and between California Drive and Old Bayshore Highway, a Mixed-Use arterial. The third segment between California Drive and Old Bayshore Highway is the nearest and most relevant segment to the Project as it functions as the interchange with north and southbound US-101 and provides primary southbound US-101 access to the Project site. This segment is two to three lanes in each direction with multiple left and right turn lanes approaching intersections. The US-101/Broadway interchange was rebuilt and reconfigured between 2014 and 2017.
- *Old Bayshore Highway* is a north-south Mixed-Use arterial that connects Millbrae Avenue to the north with the US-101/Broadway interchange to the south. The street is two lanes in each direction with a center two-way left turn lane. Old Bayshore Highway is the primary arterial roadway that serves the northern half of the Bayfront Area.
- *Peninsula Avenue* is an east west corridor that connects El Camino Real to the west with Airport Boulevard to the East and crosses US-101 but lacks direct on- and off-ramps. Northbound and southbound freeway access is provided via Airport Boulevard and Poplar Avenue, respectively. The roadway traverses the City of Burlingame as a Neighborhood Arterial and the City of San Mateo an Arterial.

2.2 Transit Facilities and Service

The Project site is not directly served by regional bus, rail, or ferry service but instead relies on supplementary first- and last-mile public shuttle services to connect employees with the regional transit network. The Peninsula Traffic Congestion Relief Alliance (Commute.org) Burlingame Point shuttle provides weekday commute-period shuttle service along the Airport Boulevard corridor to and from the Millbrae Caltrain/BART intermodal station and serves an existing stop approximately 200-feet east from the Project site along Airport Boulevard.

Existing transit facilities are shown in **Figure 3**. Relevant transit plans and policies are discussed **in Appendix B**.

2.2.1 Regional Transit Service

The following transit services operate within the City of Burlingame and are accessible from the Project site by walking, bicycling, or the first- and last-mile shuttle connection provided by Commute.org:

Both *Caltrain* and *Bay Area Rapid Transit (BART)* provide regional rail service on the Peninsula and in the vicinity of the Project site at three stations. A summary of Caltrain and BART service and the relevant stations is identified below.

- *Caltrain* provides service between San Francisco and San José and limited-weekday peak commute period trains to Morgan Hill and Gilroy. During weekdays, Caltrain operates three train service tiers that feature different stopping patterns: Local, Limited, and Baby Bullet express. Local trains make all stops between San Francisco and San Jose while Limited and Baby Bullet express trains make fewer stops to provide faster travel times between key stations during peak commute periods. Caltrain has increased service relative to pre-pandemic levels.
- *BART* provides service between the East Bay, San Francisco, and San Mateo County, connecting between San Francisco International Airport and Millbrae Intermodal Station to the south, San Francisco to the north, and Oakland, Richmond, Pittsburg/Bay Point, Dublin/Pleasanton, and Fremont in the East Bay. During peak commute periods, BART has returned to near pre-pandemic levels by providing trans on all lines every 15 minutes. Off-peak service remains reduced at approximately 30-minute headways on all lines.

Two Caltrain stations and one BART/Caltrain intermodal station are located near the Project site and are described below.

- *Burlingame – Caltrain* - Located at 290 California Drive in Downtown Burlingame, the Burlingame station is approximately 2.2 miles from the Project site since US-101 impedes direct access between the Project site and the station, which would be approximately 0.7 miles if a connection across US-101 were available between Broadway and Peninsula Avenue, the two closest existing freeway crossings. During weekday commute periods, Burlingame is served by limited and local service.
- *Broadway – Caltrain* - Located at 1190 California Drive in Burlingame's Broadway district, the Broadway station is approximately one mile from the Project site. In contrast to the Burlingame station, a relatively direct connection exists between the Project site and the Broadway station. However, the Broadway station is currently not served by weekday trains. Weekday service is anticipated to resume in 2026 upon completion of the *Peninsula Corridor Electrification Project*.
- *Millbrae Intermodal - Caltrain / BART* – Located at 100 California Drive in Downtown Millbrae, the Millbrae intermodal station is approximately 2.5 miles from the Project site. While this station is the furthest from the Project site, it would likely serve most of the Project's travel demand for two reasons. First, of the three stations in the vicinity of the Project site, it receives the most weekday rail service both because Caltrain and BART serve the station and because Caltrain Local, Limited, and Baby Bullet express trains stop at the station. Second, the Commute.org Burlingame Point shuttle begins and ends at the Millbrae station and is the sole transit route that directly serves the Project site

San Mateo County Transit District (SamTrans) provides bus service in San Mateo County but does not directly serve the Project site. The closest SamTrans stop to the Project site is approximately 0.7 miles from the Project site at the Old Bayshore Highway / Broadway intersection. This stop is served by route 292 which operates between the Hillsdale Mall in San Mateo and the Salesforce Transit Center in San Francisco via local streets that roughly parallel the US-101 corridor. In the City of Burlingame, route 292 operates along California Drive, Broadway, and Old Bayshore Highway and provides service on approximately 30-minute headways during weekday peak commute hours.

As part of the multi-year comprehensive network analysis *Reimagine SamTrans*[1], SamTrans evaluated existing transit service routes and developed additional routes to improve the experience for existing riders, grow new and more frequent ridership, and improve the efficiency and effectiveness of SamTrans as a mobility provider. However, no major service changes in the vicinity of the Project site when the final plan was adopted by the SamTrans board in April 2022.

2.2.2 Bayfront Commuter Shuttle Service

Peninsula Traffic Congestion Relief Alliance (Commute.org) provides weekday commute period first- and last- mile shuttles connecting employers with BART and Caltrain. The shuttles are equipped with bicycle racks. Service is roughly distributed between the Bayfront area and the Burlingame mainland along Rollins Road, California Drive, and Bayshore Highway. Project shuttle access is provided by an existing stop at 800 Airport Boulevard, about 3 miles southeast from the El Camino Real / Millbrae Avenue intersection, which is served by the Caltrain and BART routes. Each shuttle operates at 15 to 20-minute headways during commuting a.m. and p.m. peak periods.

2.3 Pedestrian Facilities

Pedestrian facilities include sidewalks, crosswalks, off-street trails, and pedestrian traffic control devices such as signals. Pedestrian facilities near the Project site tend to serve walking trips connecting to shuttle stops, multi-use trails, and nearby offices and businesses. In the Project vicinity, sidewalk widths on public streets range from five to seven feet.

The following pedestrian facilities exist near the Project site:

- *Airport Boulevard* has sidewalks on the east and west side of the roadway and serves as a connection from the Project site to the multi-use trail just west of the project site. At 915 Airport Boulevard, both sides of the sidewalk become trail-like paved paths. At 985 Airport Boulevard, the east sidewalk ends at a crossing, directing pedestrians to utilize the west sidewalk.
- *Anza Boulevard* has continuous sidewalks on the north and south side of the roadway. The sidewalk on the north side of the street is buffered. The intersection of Anza Boulevard and Airport Boulevard has high visibility crosswalks, pedestrian signals, and parallel bicycle crossing markings along Airport Boulevard.

[1] Reimagine SamTrans. 2021. Available: https://www.reimaginesamtrans.com/. Accessed: October 19, 2021.

2.4 Bicycle Facilities

Bicycle facilities consist of separated bikeways, bicycle lanes, routes, trails, and paths, as well as bicycle parking, bicycle lockers, and showers for cyclists. The California Department of Transportation (Caltrans) recognizes four classifications of bicycle facilities as described below.

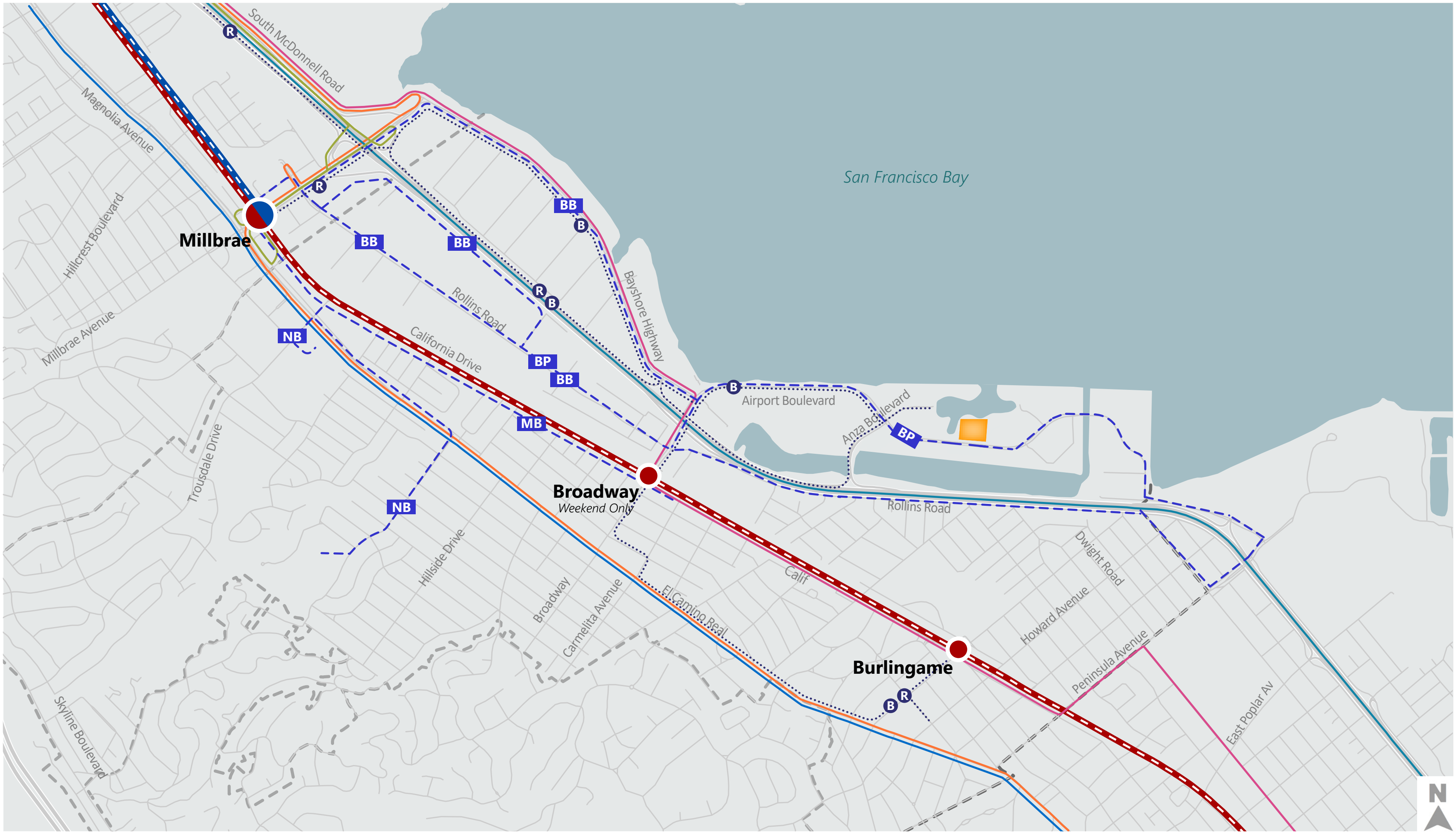
- Class I – Shared-Use Pathway: Provides a completely separated off-street right-of-way for the exclusive use of cyclists and pedestrians.
- Class II – Bicycle Lanes: Provides a striped lane for one-way travel on a street or highway. May include a "buffer" zone consisting of a striped portion of roadway between the bicycle lane and the nearest vehicle travel lane.
- Class III – Bicycle Route: Provides for shared use with motor vehicle traffic; however, are often signed or include a striped bicycle lane.
- Class IV – Separated Bikeway: Provides a right-of-way designated exclusively for bicycle travel adjacent to a roadway and which are protected from vehicular traffic. Types of separation include, but are not limited to, grade separation, flexible posts, inflexible physical barriers, or on-street parking.

Current bicycle facilities in the Project vicinity, as designated by the City of Burlingame's Bicycle and Pedestrian Master Plan (BPMP), are shown in **Figure 4** and discussed below.

- *Airport Boulevard* has Class II bicycle lanes that provides connectivity from the Project site to the Broadway / US-101 overcrossing to the north. The corridor is a planned Class IV separated bikeway in the BPMP.
- *Anza Boulevard* has a Class I path on the northwest side of the street which connects the Project site to the Bay Trail segment along Sanchez Lagoon and provides an alternative off-street connection to the Broadway / US-101 overcrossing via pathways in the City of Burlingame's Bayside Park.
- *The San Francisco Bay Trail (Bay Trail)* is a Class I path that runs along the Bayfront shoreline and is part of a planned 400-mile regional trail system encircling the San Francisco Bay. The nearest access point from the Project to the San Francisco Bay Trail is via Anza Boulevard which provides access to an isolated trail segment that runs along the San Francisco Bay shoreline between the Anza lagoon to the east and approximately the Airport Boulevard / Old Bayshore Highway intersection to the west.

2.5 Emergency Vehicle Access

Emergency vehicles typically use major streets through the study area when heading to and from an emergency and/or emergency facility. Arterial roadways allow emergency vehicles to travel at higher speeds and provide enough clearance space to permit other traffic to maneuver out of the path of the emergency vehicle and yield the right-of-way. The nearest existing fire station to the Project is Fire Station 36 at 1399 Rollins Road and is operated by the Central County Fire Department. The fire station is approximately 1.2 miles west of the Project site, via Airport Boulevard, Broadway and Rollins Road with access to the Project via both the emergency vehicle access driveway on Anza Boulevard or the Project's primary vehicle access driveway on Airport Boulevard. Travel time is approximately five minutes from the Fire Station 36 to the Project site. The Project site allows for larger vehicle turning movements.



Regional Rail
- BART
- Caltrain

SamTrans Routes
- ECR
- 397
- 292
- SFO
- FCX

Commute.org Routes
- NB North Burlingame
- BB Burlingame Bayside
- BP Burlingame Point
- MB Millbrae-Broadway

Trolley Routes
- B Burlingame Trolley
- R Red Carpet Trolley

- Cities
- Project Site

Figure 3

Existing Transit Facilities

Regional Rail

- BART
- Caltrain

Existing Bikeways

- Class I Shared Path
- Class II Bicycle Lane
- Class III Bicycle Route

Planned Bikeways

- Class I Shared Path
- Class II Bicycle Lane
- Class III Bicycle Route
- Class IIIb Neighborhood Bikeway
- Class IV Separated Bikeway

- Cities
- Project Site

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Figure 4

Existing and Planned Bicycle Facilities

3. Transportation Analysis

This section includes analysis and findings of Project effects on transportation services and facilities, including motor vehicle travel and operations, transit service, pedestrian facilities, and bicycle facilities. The amount and distance of motor vehicle travel was analyzed using vehicle miles traveled (VMT). Bicycle, pedestrian, and transit impacts were qualitatively assessed.

In accordance with California Senate Bill 743[2], vehicle delay metrics such as intersection level of service (LOS) cannot be used to assess project impacts under CEQA. However, weekday AM and PM peak hour vehicle intersection delay and LOS at five study intersections without and with Project trips is presented in **Appendix D** for informational purposes only.

3.1 Significance Criteria

The impacts of the Project related to transportation would be considered significant if any of the following Standards of Significance are exceeded, in accordance with Appendix G of the California Environmental Quality Act (CEQA) Guidelines:

- Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities;
- Generate per-employee VMT greater than the City's adopted threshold of 15 percent below the regional average, pursuant to CEQA Guidelines Section 15064.3, subdivision (b);
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or
- Result in inadequate emergency access

Thresholds of significance used in this document are based on the *CEQA Guidelines* Appendix G criteria. The criteria of significance apply to all Project scenarios as measured against the corresponding No Project scenarios.

3.1.1 Vehicle Miles Traveled (VMT)

- A significant impact would occur if development of the Project would generate per-employee vehicle miles traveled (VMT) greater than the City's adopted threshold of 15 percent below the regional average.

[2] Senate Bill 743 (SB 743) is intended to better align CEQA transportation impact analysis practices and mitigation outcomes with the State's goals to reduce greenhouse gas (GHG) emissions, encourage infill development, and improve public health through more active transportation. More information can be found in the accompanying Appendix B.

3.1.2 Design Hazards

- A significant impact would occur if the Project substantially increases hazards to street users due to a design feature or land uses incompatible with the surrounding street network.

3.1.3 Bicycle, Pedestrian, and Transit

- A significant impact would occur if Project traffic would produce a detrimental impact to the performance or safety of existing bicycle or pedestrian facilities, or conflict with adopted plans and programs.
- A significant impact would occur if Project traffic would produce a detrimental impact to the performance or safety of local transit or shuttle service or conflict with adopted plans and programs.

3.1.4 Emergency Access

- A significant impact would occur if the project would result in inadequate emergency access.

3.2 Analysis Scenarios

The impacts of the Project to the surrounding transportation system were evaluated for the two scenarios listed below:

- Scenario 1: Existing Conditions
- Scenario 2: Existing Plus Project Conditions
- Scenario 3: Cumulative Conditions
- Scenario 4: Cumulative Plus Project Conditions

A description of the methods used to estimate the amount of traffic and VMT generated by the Project is provided below. Project-specific impacts are described under Section 4.

3.2.1 Existing Conditions

Existing conditions represent the baseline condition upon which Project impacts are measured. The baseline condition represents conditions prior to the COVID-19 pandemic. Due to the atypical travel patterns and transit service levels during the COVID-19 pandemic, new data was not collected for this analysis.

3.2.2 Existing Plus Project Conditions

Existing Plus Project conditions represent the baseline condition with the addition of the Project. Traffic volumes for Existing Plus Project conditions include existing traffic volumes plus traffic generated by the Project. Existing Plus Project conditions were compared to Existing conditions to determine potential immediate project impacts.

3.2.3 Cumulative Conditions

Cumulative Conditions include transportation demand resulting from reasonably foreseeable land use changes and conditions associated with funded transportation projects at year 2040 as included in the Burlingame General Plan ("Envision Burlingame"). The Plan envisions the Bayfront area as a regional recreation and business destination with enhanced parks, natural open spaces, and recreational amenities that provide access for pedestrian, cyclists, and watercraft, including commercial ferry service. Industrial and office uses within the Inner Bayshore district (where the proposed Project is located) will continue as preferred land uses, and compatible creative industries will be accommodated.

Approximately 2/3rds of job growth in Burlingame between now and 2040[3] is expected to occur in the Bayfront area, as dictated by the Plan.

3.2.4 Cumulative Plus Project Conditions

Cumulative Plus Project conditions represent the cumulative condition with the addition of the Project to determine the extent to which the Project would contribute to long-term cumulative transportation impacts. Because the proposed Project is consistent with the zoning called for in the Bayfront area as part of the Burlingame General Plan and the Cumulative Conditions assume more than enough growth in jobs from the Existing Condition, the Project is assumed to be included in the Cumulative Condition. However, the 'Plus Project' Condition includes additional detail about the location, type, and physical design of the project.

3.3 Vehicle Miles Traveled

A detailed VMT analysis was not performed based on the findings from the VMT screening memo which can be found in **Appendix C**. The memo concludes the Project is presumed to have a less-than-significant VMT impact since the Project site is located within 0.5 miles of a stop on an existing fixed-route transit route with 15-minute headways, the Commute.org Burlingame Point shuttle. A detailed VMT Analysis is not required.

Projects located within 0.5 miles of a high-quality transit area are presumed to have less than significant VMT impacts unless any of the following is true:

- Floor Area Ratio (FAR) < 0.75
- More parking than required by City code
- Inconsistent with the applicable RTP/SCS, as determined by the City
- Replacing affordable housing units with market-rate units

The Project's FAR is 3.0. Thus, the total FAR is higher than the 0.75 threshold.

[3] 2/3rds figure developed from City of Burlingame Travel Model files: From Baseline to Cumulative, there would be an approximately 7,200 increase in jobs located in the Bayfront and an approximately 10,800 increase in jobs in all of Burlingame.

The City of Burlingame allows a minimum parking ratio of 1 space per 300-400 square feet of Office use and 1 space per 1,000 per square feet for R&D or Technology use[4]. Since the Project proposes to dedicate approximately half of its space to each use, the Project Team was instructed by City staff to calculate it's required parking based on half of the 483,380 square foot office (1 space per 300 square feet) and R&D or Technology building for each use. This equates to a minimum of 1,048 parking spaces. A 20 percent reduction was applied to the off-street parking requirement for the project as allowed for as part of the City of Burlingame's TDM ordinance, resulting in a revised minimum of 838 parking spaces. The Project proposes to provide 838 total parking space.

Plan Bay Area is the relevant Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) for Burlingame and seeks to prioritize development with access to quality transit, which includes the Project site. The Project's proposed land use is consistent with the use and intensity that is included in *Plan Bay Area* and the Project falls within the Projected land use totals for Burlingame.

The Project does not include a residential element and thus is not proposing to replace affordable housing units with market-rate units.

3.3.1 Project Trip Generation

Proposed Project traffic added to the surrounding roadway system was estimated using travel data from the Institute of Transportation Engineer's (ITE) *Trip Generation Manual 11th* edition. **Table 1** presents trip generation rates and inbound and outbound distributions derived from the sample site data and multiplied by the size of the proposed Project (gross square feet) to determine average weekday, a.m. peak hour, and p.m. peak hour vehicle trip generation volumes. The raw trip generation estimate was adjusted in two ways. First, a 20 percent reduction was applied to account for the City of Burlingame's TDM ordinance and corresponding 20 percent trip reduction target. Second, vehicle trips from the existing airport parking lot were subtracted to create a net trip generation estimate.

Table 1: Trip Generation Estimate

Land Use	Size	Units	Daily Trips	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total
Proposed Uses									
General Office Building	483.4	KSF	4,575	572	78	650	104	510	614
		20% TDM Reduction	*(915)*	*(114)*	*(16)*	*(130)*	*(21)*	*(102)*	*(123)*
		SUBTOTAL	**3,660**	**457**	**62**	**520**	**84**	**408**	**491**
Existing Uses									

[4] City of Burlingame Municipal Code, 2022. Section 25.40.030 Required Parking Spaces Available: *https://cms6.revize.com/revize/burlingamecity/Chapter%2025.40%20-%20Parking%20Regulations.pdf* Accessed: May 2022.

Burlingame Airport Parking	Vehicle Count	1,172	37	30	67	34	32	66
	SUBTOTAL	**(1,172)**	**(37)**	**(30)**	**(67)**	**(34)**	**(32)**	**(66)**
Net Trip Generation								
Proposed Uses		3,660	457	62	520	84	408	491
Existing Uses		(1,172)	(37)	(30)	(67)	(34)	(32)	(66)
	TOTAL NET TRIPS	**2,488**	**420**	**32**	**453**	**50**	**376**	**425**

Source: Institute of Transportation Engineers' Trip Generation Manual, 11th Edition (ITE 710, General Office Building) was used, rather than a 50/50 split of Office and R&D in order to return a more conservative analysis, as the R&D or Technology use generates a lower number of vehicle trips; Existing Parking Facility: Streetlight Data, weekday 24-hour volume estimates generated from 2019 data to represent pre-COVID activity.

Notes: Trip generation estimates include a 20% reduction from raw ITE volumes for consistency with the City of Burlingame's Transportation Demand Management (TDM) policy.

3.4 Parking Assessment

The preliminary parking assessment presented in this section is included for informational purposes only and does not affect the CEQA evaluation. **Table 2** presents parking demand estimated using two different parking generation methodologies contained within ITE Parking Generation, 5th Edition – based on total square footage and based on number of employees. Additionally, the table provides the percentage of employees that would have a parking spot (drive share) using an employee density of 1 employee per 650 square feet (50/50 split of Office and R&D or Technology, as described above). Parking demand prior to including the effect of TDM measures would be expected to be somewhere between 580 and 1,198 stalls.

Table 2: Parking Supply Assessment

Parking Generation Method	Parking Generation Rate [A]	Quantity [B]	Parking Demand [A*B=C]	Drive Share [C/744 employees=D]
Per Thousand Square Feet	2.48[1]	483.4 KSF	1,198	161%
Per Employee	0.78[1]	744 employees[2]	580	78%

Notes:

1. Based on 50/50 split of *ITE Parking Generation 5th Edition* (Land Use #710 – General Office and Land Use #760 Research and Development Center)
2. Employee density assumed to be 1 employee per 650 square feet of building area (based on 50/50 split of 1 employee per 300 sf (office) and 1 employee per 1,000 sf (R&D) per direction of city staff.

Source: Fehr & Peers, 2022

The Project proposes to provide 838 parking stalls. Most parking stalls will be located below-grade with the remainder located on the west side of the ground level. The proposed Project parking supply is less than the expected parking demand estimated using ITE rates per ksf, but above the expected parking demand using ITE rates per employee. It is anticipated that the Project will have a lower parking demand than the ITE per ksf -projected demand due to the City-required TDM plan, which seeks to encourage non-auto trips and further reduce non-drive alone vehicle trips. The Project has prepared a preliminary TDM Plan (included as **Appendix A**) and will develop a final plan in compliance with the City ordinance.

As noted in Section 3.3. Vehicle Miles Traveled, for an office employment use classification, the City of Burlingame has a minimum required parking rate of 1 per 300-400 square feet. For a research and development employment use classification, the city has a general required parking rate of 1 space per 1,000 feet. Per Section 3.3 Vehicle Miles Traveled, using a 50/50 split of the two classifications, the Project proposes to provide 838 total parking spaces, which is the same as the Code-dictated parking supply.

The number of vehicle parking spaces provided is therefore compliant with the Burlingame Municipal Code and through the TDM Plan is in line with the existing City of Burlingame General Plan policies and goals to promote alternate modes of transportation.

In September 2022, the State of California passed AB 2097, a law that prohibits parking minimums on new developments within a half-mile of public transit. The law is scheduled to take effect on January 1, 2023. It is expected that the law would apply to the Project since the project is located within 0.5 miles of a stop on an existing fixed-route transit route with 15-minute headways - the Commute.org Burlingame Point shuttle.[5] Once the law takes effect, the project would not be required to provide any parking spaces.

3.5 Bicycle, Pedestrian, and Transit

3.5.1 Bicycle and Pedestrian Analysis

The Project would generate new pedestrian and bicycle trips, particularly employees traveling to and from shuttle stops and bicyclists traveling to Burlingame and destinations west of the US 101 freeway, including the Burlingame Caltrain Stations.

Most new pedestrian trips are expected to be shuttle riders accessing the Project site to/from the existing Commute.org shuttle stop east of the project site on Airport Boulevard to/from the main pedestrian entrance on Airport Boulevard. The stop is connected to the Project site via a sidewalk along Airport Boulevard. The existing driveway curbcuts do not appear to meet current accessibility standards (with respect to the slope of the transition into the driveway and the cross slope of the driveway itself).

Most new bicycle trips are expected to occur either along the Bay Trail or along Airport Boulevard. Both serve as the linkages between the Project, Burlingame, and the closest Caltrain stations. The segment of the Bay Trail is a Class I off-street, paved path with minimal vehicle conflicts. The segment of Airport Boulevard has a combination of Class II and Class III bicycle facilities as well as bicycle-specific intersection treatments

[5] See sections 3.3 Vehicle Miles Traveled and 4.1 Vehicle Miles Traveled

at the Anza Boulevard / Airport Boulevard and Broadway / Old Bayshore Highway Boulevard intersection, which connects to the Bayside Crossing bicycle/pedestrian bridge that connects across the US 101 freeway. Given the path, roadway and intersection bicycle facilities that are present, new bicycle trips are not expected to exacerbate vehicle conflicts. Additionally, the Project would not create inconsistencies with adopted bicycle or pedestrian system plans, guidelines, or policies as described in **Appendix B**.

Along Airport Boulevard, the Burlingame Bicycle and Pedestrian Master Plan proposes converting the current Class II bicycle lane to a Class IV protected bicycle lane.

Class I bicycle parking spaces are typically lockers or restricted access parking rooms and are intended for employees. Class II bicycle parking spaces are standard bicycle racks and are mostly intended for visitors. The Project proposes 44 Class I bike parking spaces – 22 in each tower. Access to the spaces is provided by path that connect to the Bay Trail. Class II bicycle racks are proposed to be located in a highly visible area just outside the tower lobby entrances – 22 at each entrance for a total of 44. Bicycle storage and showers are primarily located at the plaza level of both towers.

Per the City's Municipal Code (Section 25.40.060), Bicycle parking shall be located on a paved surface, in proximity to a building entrance, in a visibly secure and well-lit location, and adjacent to the building served. The City's Code does not specify an amount of short-term bicycle parking, which tends to be located outside of buildings and long-term parking, which tends to be located inside buildings. The project's TDM Plan includes the 'End-of-Trip Bicycle Facilities' measure, which includes the provision and maintenance of secure bike parking, showers, and personal lockers, and changing areas. This is also reflected in the project site plan and Project Description.

3.5.2 Transit Analysis

The Project will generate new transit and vehicle trips which could both affect transit operations.

Since nearly all of Burlingame's Bayfront employment area is outside the typical 0.5-mile walking distance from regional rail stations, the area relies on Commute.org's Burlingame Bayside and Burlingame Point first-last-mile shuttles. The Burlingame Point shuttle serves the Project Site and the Airport Boulevard corridor with on-street shuttle stops which, in contrast to off-street shuttle stops, are generally the most efficient configuration to provide multi-stop shuttle service. As noted in Section 3.5.1 Bicycle and Pedestrian Analysis, shuttle riders accessing the Project site would likely use the existing stop adjacent to the project in-front of 600 Airport Boulevard. The stop is connected to the Project site via Airport Boulevard with sidewalks. Shuttle users will not need to cross the street to access the Project site. The existing driveway curbcuts do not appear to meet current accessibility standards.

The Project would generate approximately 453 and 425 net new vehicle trips during the a.m. and p.m. peak hour, or approximately 7-7.5 new vehicles per minute.

It is not anticipated Project traffic volumes would create a disruption to the Commute.org shuttle service surrounding the Project site. As planned, the Project would not include features that would disrupt existing or planned transit routes or facilities. The Project's driveways would not cause disruptions to existing or planned transit service or transit stops. The Project would not conflict with any adopted transit system plans, guidelines, policies, or standards, as described in **Appendix B**.

4. Impacts and Mitigations

This section includes the evaluation of the Project's potential impacts under Existing Plus Project and Cumulative Plus Project conditions. This section also describes required associated mitigation measures that would reduce impacts of the Project.

4.1 Vehicle Miles Traveled

Impact TRANS-1: **The Project site is located within 0.5 miles of a stop on an existing fixed-route transit route with 15-minute headways, and is presumed to have no impact on vehicle miles traveled (VMT) under Existing Plus Project and Cumulative Plus Project conditions. (*Less-than-significant)***

As shown in **Appendix C** and Section 3.3, the Project meets all screening criteria to presume that the impact to VMT is less than significant. The Project site is located within 0.5 miles of a stop on a planned fixed-route transit route with 15-minute headways, has a FAR greater than 0.75, does not provide more parking than required by City code, is consistent with the RTP/SCS *Plan Bay Area*, and does not replace affordable housing units with market-rate units. Therefore, the Project is presumed to have no impact on VMT under Existing Plus Project and Cumulative Plus Project conditions.

Additionally, the Project has prepared a TDM plan (included as **Appendix A**) with a minimum of 20 percent mode share reduction, which seeks to reduce drive-alone vehicle trips, which will further reduce the Project's impact on VMT.

Mitigation Measures: None required.

4.2 Bicycle, Pedestrian, and Transit

Impact TRANS-3: **Development of the Project would not conflict with adopted plans and programs under Existing Plus Project and Cumulative Plus Project conditions.. (*Less than Significant*)**

As described in Section 3.5, The Project would not produce a detrimental impact to existing bicycle or pedestrian facilities, nor does it conflict with adopted policies in adopted City plans summarized in **Appendix B**. The Project would generate additional vehicle trips along existing sidewalks, bikeways, and shuttle routes along streets such as Airport Boulevard and Anza Boulevards and would also generate some new walking and bicycling trips on such streets. However, by adding approximately seven vehicles per minute to the surrounding street network during the AM and PM peak hours, the Project would not adversely affect existing or planned bicycle or pedestrian facilities or substantially lengthen travel times by existing shuttle services. Therefore, the Project's impacts to walking, bicycling, and transit would be less than significant under Existing Plus Project conditions and less than cumulatively considerable under Cumulative Plus Project conditions.

Mitigation Measures: None required

Impact TRANS-4:

Project development or Project traffic would not produce a detrimental impact to local transit or shuttle service under Existing Plus Project and Cumulative Plus Project conditions. (*Less than Significant*)

As described in Section 3.5, the Project does not produce a detrimental impact to existing transit facilities or conflict with adopted policies in adopted City plans summarized in **Appendix B**. The Project's use of the existing shuttle stop at the 600 Airport Boulevard is consistent with Commute.org policies to prioritize on-street shuttle stops. Therefore, the Project's impact to transit is less-than-significant under Existing Plus Project conditions and less than cumulatively considerable under Cumulative Plus Project conditions.

Mitigation Measures: None required

4.3 Hazards

Impact TRANS-5: **Development of the Project would not substantially increase hazards due to a geometric design feature under Existing Plus Project and Cumulative Plus Project conditions. (*Less than Significant*)**

The proposed Project would not worsen any existing geometric design features or cause new design hazards. The Project would rely on three proposed driveways on Airport Boulevard. All three driveways primary uses are to access the parking garage, however the center driveway also provides access to a passenger loading area and the eastern driveways provides access to the commercial loading area. Each driveway provides for fire access and have been sized and tested with turning analysis software consistent with this function. Proposed driveways are expected to be appropriate to handle expected vehicle traffic in and out of the Project.

The Project is not proposing any geometry changes to the Anza Boulevard / Airport Boulevard signalized intersection. The Project is not proposing any geometry changes to the intersection of Airport Boulevard / airport parking driveway either – this intersection will serve as the western driveway into the site. The Project is, however, proposing a new intersection of Airport Boulevard and what will be the center driveway. The center driveway egress of this new intersection will be stop-controlled. The Project also proposes to remove the majority of approximately 125 feet of the existing western-most Airport Boulevard center median (which will reduce the median from a ten-foot median to a three-foot median and require moving a PG&E power pole, as shown in Figure 2) to allow for an eastbound left-turn pocket into the center driveway as well as remove approximately 100 feet of the existing eastern-most Airport Boulevard center median to allow for an acceleration lane onto eastbound Airport Boulevard upon exiting left out of the center driveway. The Project is proposing a new right-in / right-out intersection at Airport Boulevard and what will serve as the eastern driveway. The Project is not proposing any changes to

Airport Boulevard beyond the new curbcut for the eastern driveway. None of the proposed roadway geometry changes will affect the number of travel lanes or vehicle capacity of Airport Boulevard.

Sight distance at the proposed Project driveways is not expected to change from what is available under existing conditions at the airport parking driveway. As the Project is expected to increase pedestrian and bicycle trips at the driveways along Airport and Anza Boulevards, it may increase risk to pedestrians and bicyclists. Any future vegetation located within the sight triangles at the driveways should be maintained so as not to restrict drivers' sight distance when exiting the driveways. Sight distance at the proposed driveway locations is expected to be adequate for drivers exiting the Project site and for pedestrians crossing the driveways.

The Project would not include any uses that are incompatible with the surrounding land use or the existing roadway system. Therefore, the Project is not expected to result in a substantial increase to hazards, and the Project's impacts to hazards would be less than significant under Existing Plus Project conditions and less than cumulatively considerable under Cumulative Plus Project conditions.

Mitigation Measures: None required

4.4 Emergency Access

Impact TRANS-6: **Development of the Project would not result in inadequate emergency access under Existing Plus Project and Cumulative Plus Project conditions. (*Less than Significant*)**

Vehicle trips generated by the Project would represent a small percentage of overall daily and peak hour traffic on roadways and freeways in the study area. The Project would generate about seven vehicle trips per minute on average during the peak hours, which is not expected to introduce or exacerbate conflicts for emergency vehicles traveling near the Project. The Project would not include features that would alter emergency vehicle access routes or roadway facilities; fire and police vehicles would continue to have access to all facilities around the entire City. Upon construction, emergency vehicles would have full access to the Project site via three driveways on Airport Boulevard, and each driveway would be equipped to handle all types of emergency vehicles. A 26' fire access easement is incorporated into the site plan to allow for emergency vehicles to access the adjacent hotel property to the east from the eastern driveway. The Project is not expected to impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Therefore, the Project would result in adequate emergency access, and the Project's impacts to emergency access would be less than significant under Existing Plus Project conditions and less than cumulatively considerable under Cumulative Plus Project conditions.

Mitigation Measures: None required

Appendix A: Preliminary Transportation Demand Management Plan

620 Airport Boulevard

Transportation Demand Management Plan

July 2022

Prepared for:

Boca Lake Office, LLC

By: FEHR PEERS

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Appendices

Appendix A – C/CAG Checklist

Appendix B – Detailed Description of TDM Measures

Appendix C – Sample Commute Survey

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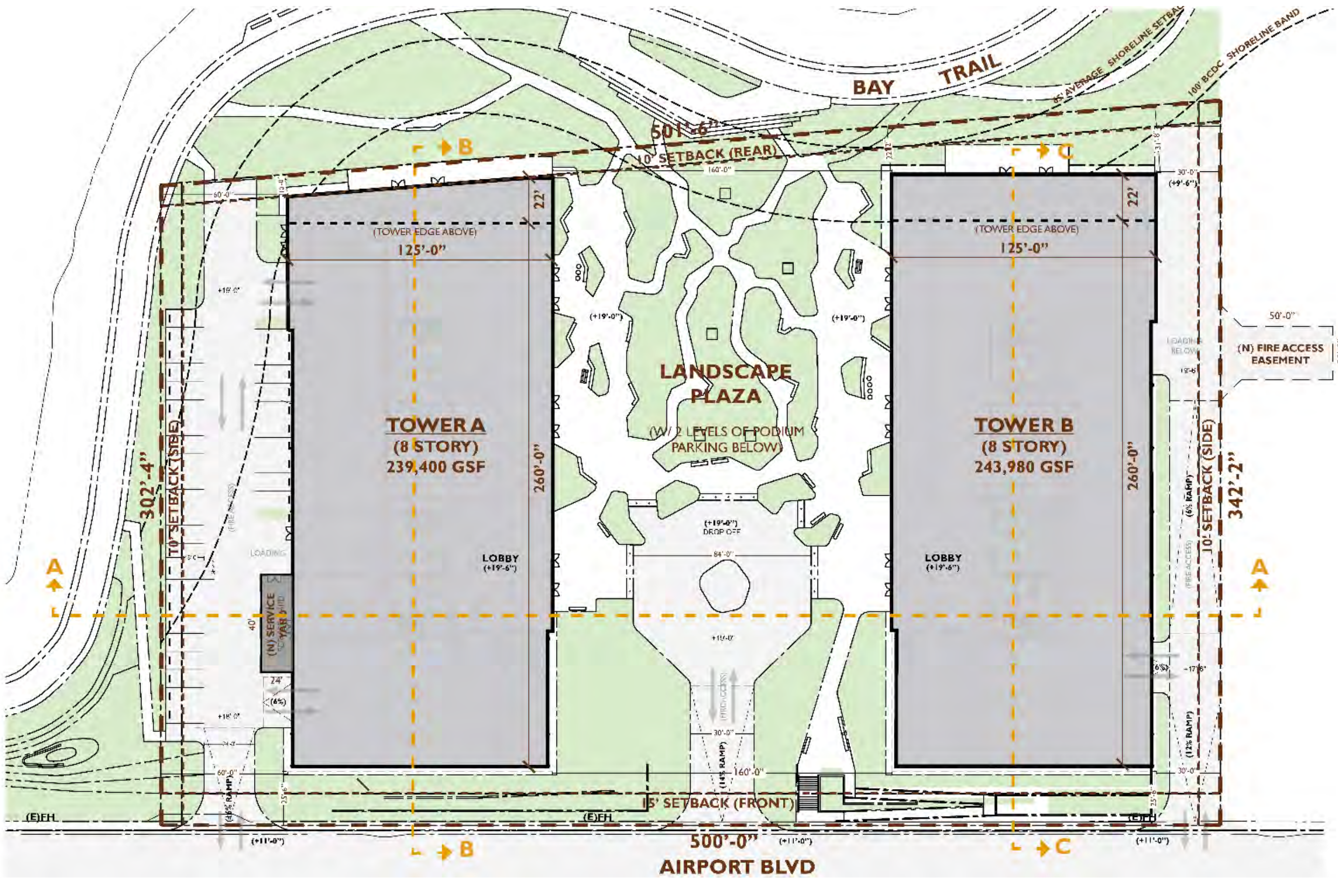
Introduction

Project Overview

The project site is located in Burlingame, California approximately four miles South of San Francisco International Airport (SFO) and adjacent to Anza Lagoon. The proposed project (the "Project") would redevelop a 3.7 acre parcel, currently used as a short- and long-term parking facility for SFO. The proposed site plan includes 483,380 square feet building area for two (2) eight-story buildings, plus ground floor and underground parking. The proposed uses include office, research & development or technology. Three project driveways will provide vehicle access to the Project site. The west and east driveways provide access to the multi-story podium parking in each building. The central driveway provides vehicular ingress/egress for drop-off and emergency vehicle access, as well as pedestrian access between buildings.



Project Setting

Bicycle and Pedestrian Facilities

Airport Boulevard, which runs along the south edge of the Project site, includes paved sidewalks on both sides of the street and is a planned Class IV separated bikeway in the City of Burlingame's *Bicycle and Pedestrian Master Plan*. Anza Boulevard features sidewalks on the south side of the roadway and a Class I shared-use path on the north side. Primary bicycle and pedestrian access would be provided via Airport Boulevard and the Bay Trail along the Anza Lagoon. The San Francisco Bay Trail, a Class 1 shared-use trail, runs adjacent to the north side of the Project site. This portion of the Bay Trail is within the project boundary. Anza Boulevard has a jersey barrier protected pedestrian path along the southside bridge. The Bay Trail continues westward toward the Broadway corridor via an undercrossing beneath Anza Boulevard. Existing and planned bicycle facilities are shown in **Figure 1**.

The Project includes a landscaped plaza between the two buildings. Each building includes a front lobby and 10,000 sq. ft. of flex space which could be used for on-site, amenity uses.

Transit Services

620 Airport Boulevard is located along Commute.org's Burlingame Point (Millbrae BART/Caltrain) shuttle. The shuttle provides a fixed circulator route Monday through Friday from Millbrae station to five stops along Airport Boulevard This route runs in front of the Project site on Airport Boulevard with a shuttle stop at 600 Airport Boulevard. Several transit providers, such as BART, Caltrain, and SamTrans, have stops at Millbrae Station. Three BART lines serve Millbrae Station: Richmond to Millbrae, Antioch to Millbrae, and Millbrae to SFO. Caltrain stops at Millbrae Station, providing services from San Francisco in the north and Tamien in the south. Several SamTrans bus lines serve Millbrae Station. SamTrans Route 397 connects downtown Burlingame with downtown San Francisco. Route SFO runs direct service from the transit center to all San Francisco International Airport Terminals. Route ECR runs along El Camino Real from Palo Alto Transit Center in South Bay to Daly City BART in San Francisco. Existing transit service is shown in **Figure 2**.

Regional Rail

- BART
- Caltrain

Existing Bikeways

- Class I Shared Path
- Class II Bicycle Lane
- Class III Bicycle Route

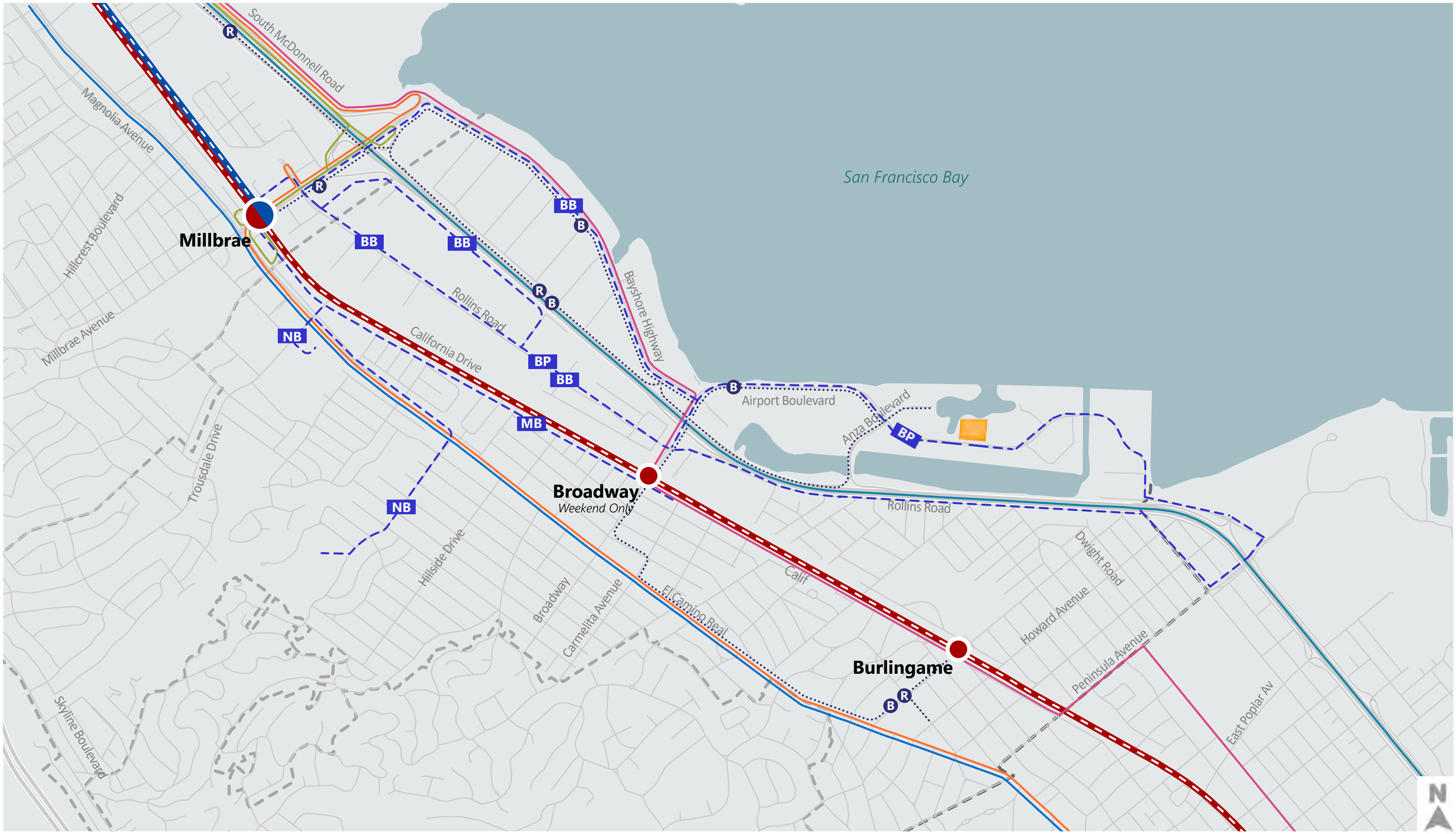
Planned Bikeways

- Class I Shared Path
- Class II Bicycle Lane
- Class III Bicycle Route
- Class IIIb Neighborhood Bikeway
- Class IV Separated Bikeway

- Cities
- Project Site

Figure 1

Existing and Planned Bicycle Facilities



Regional Rail
- BART
- Caltrain

SamTrans Routes
- ECR
- 397
- 292
- SFO
- FCX

Commute.org Routes
- NB North Burlingame
- BB Burlingame Bayside
- BP Burlingame Point
- MB Millbrae-Broadway

Trolley Routes
- B Burlingame Trolley
- R Red Carpet Trolley

- Cities
- Project Site

Figure 2

Existing Transit Service

TDM Goals and Objectives

The primary goal of a Transportation Demand Management (TDM) program is to reduce the number of drive-alone trips generated by new developments, by shifting a proportion of trips to more sustainable modes such as walking, biking, transit, or carpooling. This, in turn, helps to alleviate traffic congestion, reduce greenhouse gas emissions and other air pollution, and reduce demand for parking.

The project is required to implement TDM strategies that would comply with both the City of Burlingame's TDM Ordinance and City/County Association of Governments of San Mateo County (C/CAG) TDM Program. Strategies include project elements and necessary commitments of future tenants. Project elements include design features that provide greater options for the mode of travel future tenants choose. Tenant commitments include programs or services tenants are required to provide to achieve the trip reduction requirements.

Reducing the share of employees driving alone to the site would reduce traffic congestion impacts on nearby roadways and Highway 101 during peak traffic periods. This would also reduce vehicle demand on regional roadways and arterials used to access the site, contributing to the goals of C/CAG's Congestion Management Program.

Additionally, a successful TDM program improves the commute experience for employees, which can support employee recruitment and keep morale high to enhance employee retention. Supporting a range of modes for employee commute trips helps to manage the stress often associated with commuting.

Compliance with Local Requirements

The City of Burlingame's Transportation Demand Management Ordinance[1] outlines required trip reduction measures required of new development projects of certain sized criterion. All projects are required to meet vehicle trip generation rate 20% lower than the Institute of Transportation Engineers (ITE) *Trip Generation Manual*. Additionally, the City of Burlingame requires ongoing monitoring and an annual TDM report.

The City of Burlingame's Climate Action Plan (CAP)[2] presents the City's blueprint for reducing greenhouse gas emissions in Burlingame. The CAP requires that all new commercial developments of 10,000 sq. ft. or larger incorporate TDM strategies that reduce trip generation by 20% compared to the standard rate estimated by the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (10th Edition).

C/CAG's TDM Policy[3] is a component of the Congestion Management Program (CMP) that provides guidelines for analyzing the impact of land use decisions made by municipalities in San Mateo County. The policy requires that local jurisdictions implement specific measures to reduce the demand for single occupancy vehicle (SOV) trips of all new developments that are expected to generate at least 100 average daily trips (ADT). C/CAG requires submission of a TDM checklist alongside a project's development application (See **Appendix A**) and monitoring for the first three years of the development to assess compliance with the TDM plan. The project is considered transit proximate and requires implementing associated checklist measures that result in a 35% trip reduction.

Roles and Responsibilities

A successful TDM plan requires a combination of supportive site design elements, programming, and incentives to encourage employees to shift to non-single occupancy vehicle (SOV) modes for commuting to work and ultimately achieve the City's 20% trip reduction target. This plan delegates responsibility for implementing TDM measures among the project's developer and future tenants.

The developer has committed to implementing site design measures to support a shift to more sustainable modes by providing amenities that make walking, biking, or taking transit more convenient.

The site's building manager will support tenants by distributing TDM information to future tenants, including sample commute surveys to help tenants monitor the success of their TDM efforts.

Future tenants are responsible for managing their individual TDM programs, including providing information and support to their employees, providing financial or other incentives tailored to their individual employee base, and monitoring and reporting to the City of Burlingame annually.

[1] City of Burlingame Article 3 – Chapter 25.43 https://cms6.revize.com/revize/burlingamecity/Article%203%20-%20Regulations%20and%20Standards%20Applicable%20to%20All%20Zoning%20Districts.pdf

[2] City of Burlingame's Climate Action Plan Update (August 2019), https://www.burlingame.org/document_center/Sustainability/CAP/Climate%20Action%20Plan_FINAL.pdf

[3] C/CAG TDM Program, https://ccagtdm.org/

Table 1. TDM Roles and Responsibilities

TDM Measures	Developer	Manager	Tenants
Project TDM Elements	x		
TDM Programmatic Measures		x	x
Provide TDM Information & Support		x	x
Provide TDM Incentives			x

Transportation Demand Management Strategies

The 690 Airport Boulevard TDM Plan is anticipated to meet the City of Burlingame's 20% trip reduction target by implementing the required TDM measures and strategies in the C/CAG TDM checklist which is provided in **Appendix A.** These strategies would manage travel demand through TDM measures and strategies that encourage alternatives to SOV trips.

Fehr & Peers evaluated the trip reduction effectiveness of the required C/CAG TDM strategies using *TDM+*, an analytical tool that quantifies trip and VMT reduction estimates based on the California Air Pollution Control Officers Association's (CAPCOA) 2021 report *Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity*. Trip reduction estimates are based on the best available data and the actual observed reductions may vary depending on implementation or the unique characteristics of a tenant's employee base and uptake.

Project TDM Elements

Based on the CAPCOA data, a combination of the Project's land use characteristics and C/CAG-required TDM strategies could result in an approximately **32% reduction** in vehicle trips from the Project's ITE-based trip generation estimate. The required TDM strategies and estimated trip reduction breakdown is presented in **Table 2**. At 13.5% of the total 31.5% estimated reduction, the CAPCOA data indicate that the Project's job density is the primary strategy in reducing vehicle trip generation from the ITE trip generation baseline by infilling an urban site currently used for surface level parking. A combination of physical and programmatic features is estimated to further reduce vehicle trips by an estimated 18%. Detailed descriptions of each TDM strategy are provided in **Appendix B**.

Table 2. Project TDM Elements & Estimated Trip Reduction from ITE Rates

TDM Measure	Description	Estimated Reduction
Land Use Characteristics		
Increase Job Density (M26)	Trip reduction achieved by a project with higher job density compared to the national job density average. Higher job density results in shorter and fewer trips by single-occupancy vehicles. Measure also takes into account the presence of on-site complimentary land uses and amenities that would support reduced vehicle trips.	13.5%
Physical Features		
End-of-Trip Bicycle Facilities (M8, M24, M25)	Providing facilities that encourages commuting to work by bicycle. This measure includes the provision and maintenance of secure bike parking, a bike repair station, showers, and personal lockers, and changing areas.	2.7% *
Pedestrian and Bicycle Network Improvements (M9, M23, M26)	Providing sidewalks and an enhanced pedestrian network encourages people to walk instead of drive. Closing gaps in the bicycle network improves the accessibility and participation rate for those that are able to bicycle	0.6%
Programmatic Features		
Employee Survey	Conduct an annual survey of employees to understand commute patterns and ways to support the use of non-driving modes. Developer to provide sample survey to tenants. A sample survey is provided in **Appendix C.**	N/A – Required for Monitoring
Ridesharing Program (M1)	Ridesharing encourages carpooled vehicle trips in place of single-occupied vehicle trips, thereby reducing the number of trips, VMT, and GHG emissions. This measure will implement a ridesharing program and establish a permanent transportation management association with funding requirements for employers.	4% *
Carsharing Program (M18)	Carsharing offers people convenient access to a vehicle for personal or commuting purposes. This helps encourage transportation alternatives and reduces vehicle ownership, thereby avoiding VMT and associated GHG emissions.	0.1%
Commute Trip Reduction Marketing (M3, M4)	C/CAG requires tenants actively participate in Commute.org or Transportation Management Association Equivalent program. Additionally, this task requires information sharing and marketing by building tenant/employer to promote and educate employees about travel choices options for accessing the project site and guaranteed ride home service. Lastly, C/CAG requires the tenant provide a transportation coordination or an employee who will be responsible for supplying orientation and information to encourage employees to use non-SOV modes of commuting to work.	4% *
Subsidized or Discounted Transit Program (M6, M7) [2]	Reducing out-of-pocket transit expense for employees improves competitiveness of transit against driving and results in an increase of transit trips and decrease in vehicle trips. C/CAG requires tenants provide a subsidy up of $50 or 30% the value of a monthly fare, whichever is cheaper.	1.3% *

TDM Measure	Description	Estimated Reduction
Employer Sponsored Vanpool (M5)	Employer-sponsored vanpool service to promote cost-effective and convenient rideshare option for groups of 5 to 15 people. The reduction measure equates to approximately 2 vanpool vehicles for every 1,000 employees.	1.3% *
Extend Transit Network Coverage or Hours (M20)	This measure will expand the local transit network by either adding or modifying existing transit service or extending the operation hours to enhance the service near the project site. Starting services earlier in the morning and/or extending services to late-night hours can accommodate the commuting times of alternative-shift workers. This will encourage the use of transit and therefore reduce VMT and associated GHG emissions.	4.6%
Encourage Flex Time, Compressed Work Weeks, and Telecommuting (M12)	Flextime allows employees some flexibility in their daily work schedules. Flextime reduces peak period congestion directly by shifting trips to before or after peak periods and can also make ridesharing and transit use more feasible. Compressed work week allows employees to work fewer but longer days, thereby reducing the need to commute on the employee's day off. Telecommuting functions, similarly, allowing employees to work from home rather than the office, reducing vehicle travel on the days they work remotely.	--[4]
Reduced Parking (M15)	Provide off-street private parking below local zoning code required minimums for a per-unit or square foot basis. Reduced parking can encourage new development at higher densities and can promote greater use alternative transportation modes, particularly in combination with other TDM measures.	--[4]
	Total Estimated Trip Reduction from ITE Rates [3]	**31.5%**

Source: TDM+ tool with Project-Specific Inputs. Fehr & Peers, 2022

Notes:

1. TDM Measure (C/CAG TDM Checklist measure) e.g., Ridesharing Program (M1).
2. Assumes an approximately $40 transit pass subsidy which is 30% of a typical two-zone Caltrain monthly pass. Two Caltrain zones aligns with the average San Mateo County home-based work vehicle trip length of 17 miles.
3. This total does not equal the sum of each individual estimated reduction since a multiplicative dampening effect has been applied to all trip reduction program measures, which are denoted by the (*) asterisk (end-of-trip bicycle facilities, ridesharing program, commute trip reduction marketing, subsidized or discounted transit program, and employer sponsored vanpool).
3. While we would expect these measures to result in reduced vehicle trips, particularly in combination with other supportive measures, they are not explicitly included in the TDM+ tool. We are thus not estimating a reduction as to keep the estimated reduction accounting from TDM+ clear.

Trip Reduction Target

Table 3 shows the Project's ITE-based trip generation estimate and the maximum number of daily and AM and PM peak hour trips to meet the City's 20% trip reduction target. To meet the target, AM and PM peak hour trips would need to be reduced by approximately 130 trips, and daily trips reduced by approximately 920 trips to meet the City's performance target.

Table 3. Vehicle Trip Reduction Goal

Land Use	ITE Code	Units	Project Daily Vehicle Trip Generation	AM Peak Hour Total	PM Peak Hour Total
Proposed Uses					
General Office Building	710	484 KSF	4,575	650	614
		20% TDM Reduction	*-915*	*-130*	*-123*
		Maximum Trips	3,660	520	491

Source: ITE Trip Generation Manual, 11th Edition

The project is estimated to generate approximately 2,488 new daily vehicle trips, 453 new trips during the AM peak hour, and 425 new trips during the PM peak hour.[4] In order to be compliant with C/CAG's requirements, the project needs to achieve the mitigation requirements for all daily trips.

[4] ITE Trip Generation Manual, 11th Edition

Program Implementation

TDM Coordinator

Each tenant will designate a transportation manager or transportation coordinator who will provide information and marketing to encourage employees to use non-SOV modes of commuting to work, including walking, biking, transit, carpooling, vanpooling, or other means of travel. While the future building manager will support the TDM coordinator by providing information on TDM requirements, transportation options, and an example commute survey, each tenant's TDM coordinator is responsible for program implementation and monitoring.

Monitoring and Reporting

Regular monitoring and reporting will ensure that tenants are in compliance with C/CAG and City of Burlingame standards for trip reductions. Additionally, annual monitoring provides an opportunity for tenants to assess the success of their TDM programs and to make adjustments or revisions as needed to achieve their TDM reduction goal.

Trip Reduction Goals

To achieve the City of Burlingame's trip reduction target, the Project's maximum AM Peak Hour, PM Peak Hour, and Daily trips are as follows. Detailed trip generation estimates are shown in **Table 3**.

- Maximum Daily Trips: 3,660
- Maximum AM Peak Hour Trips: 520
- Maximum PM Peak Hour Trips: 491

Reporting

Future tenant(s) will be required to submit monitoring reports to the City of Burlingame and C/CAG. Each jurisdiction has a set monitoring and reporting structure. The following section includes detailed information about reporting structure requirements.

City of Burlingame Monitoring and Evaluation

An TDM report shall be prepared and submitted to the City of Burlingame annually; with the initial, or baseline, commute survey report to be conducted and submitted one year after the granting of a certificate of occupancy for 75% or more of the project, and annually after that. The specific contents of the annual TDM report will be determined in collaboration with the City, but will include at least the following elements:

1. A description of the current landlord and/or tenant TDM programs and services provided and level of use/participation of each program component (required or supplemental). This includes reporting on the number of transit passes distributed and an evaluation of the percent of staff who use the pass to regularly commute to work, the number of employees with parking passes or who opted to cash-out of a parking space, and documentation of the transportation information and outreach provided to employees.
2. Results of an annual employee survey capturing how every employee access the project site. The main purpose of this survey is to capture weekday building occupancy, determine employee commute mode choices, and determine compliance with the tenant's vehicle trip generation goal. A sample survey is provided in **Appendix C.**
3. Findings of whether the tenant is in compliance with its TDM reduction participation goal. If the findings in the report show that the TDM reduction/participation goal has not been met, the future tenant would work with City staff to identify if there are additional TDM measures the tenant could reasonably (financially and practically) implement to further improve the site's TDM reductions and participation.

C/CAG Monitoring

Two years after Project occupancy, Commute.org will distribute a survey to the appropriate Project point of contact, who may be the original Project owner, property manager, or on-site tenant(s)/TDM coordinator(s). The survey will consist of a TDM Self-Certification Form (i.e., self-reporting implemented TDM measures) along with a brief questionnaire about user travel behavior at the Project site. Commute.org will then collect and analyze these surveys.

If there is insufficient progress toward TDM Checklist implementation, Commute.org will work with the appropriate point of contact to develop potential solutions. The local jurisdiction shall also collaborate in this issue resolution, which may include potential enforcement. The monitoring and reporting process is required to continue for 20 years post-occupancy at the following intervals for the self-certification form and the travel survey[5]:

- Self-Certification Form: Completed biennially for 18 years post-occupancy
- Travel Survey: Completed biennially beginning in the third year post-occupancy for a period of six years and then triennially for the remaining 12 years

[5] C/CAG *Transportation Demand Management Policy Update Approach – September 9, 2021* https://ccagtdm.org/wp-content/uploads/2021/12/FINAL-CCAG_TDM-Policy-Update-Document_9-9-2021.pdf

Appendix A – C/CAG Checklist

C/CAG TDM Checklist

ccagtdm.org

Non-Residential (Office, Industrial, Institutional) Land Use: Large Project

500+ ADT; ~50,000+ sq ft

About this Form

Any new development project anticipated to generate at least 100 average daily trips is subject to the C/CAG TDM Policy and must complete a TDM Checklist and implement associated measures to mitigate traffic impacts. Read more at ccagtdm.org

Questions?
support@ccagtdm.org

A Applicant Information

Field	Value
Project Address	620 Airport Boulevard
Contact First and Last Name	
Parcel Number	
Application Date	D D M M Y Y Y Y
Contact Phone Address	
Project Jurisdiction	City of Burlingame
Contact Email Address	

B Trip Reduction Target

Select one option based on your project's distance to high quality transit

Read more about high quality transit at ccagtdm.org/high-quality-transit

Identify your project type

- ☐ **TOD** — Less than 1/2-mile from high quality transit service — **25%** Trip Reduction Required
- ☒ **Transit Proximate** — 1/2 to 3 miles from high quality transit service — **35%** Trip Reduction Required
- ☐ **Non-Transit Proximate** — More than 3 miles from high quality transit service — **35%** Trip Reduction Required

C Required Measures

You must select all measures that apply for your project type

Click on each measure's title for more information

	Measure	Project Types	Percentage	Yes
1	**M1 - Free/Preferential Parking for Carpools** Provide free or preferential parking, including reserved spaces or spaces near an entrance or other desirable location, to incentivize ridesharing.	ALL	1%	☒
2	**M3 - TDM Coordinator/Contact Person** Provide TDM coordinator/liaison for tenants. May be contracted through 3rd party provider, such as Commute.org.	ALL	0.5%	☒
3	**M4 - Actively Participate in Commute.org or Transportation Management Association (TMA) Equivalent** Obtain certification of registration from Commute.org or equivalent TMA incorporation documents. Select only one based on Project Type	TOD & Non-transit Proximate	6.5%	☐
		Transit Proximate	16.5%	☒
4	**M5 - Carpool or Vanpool Program** Establish carpool/vanpool program for tenants and register program with Commute.org.	ALL	2%	☒
5	**M6 - Transit or Ridesharing Passes/Subsidies** Offer tenants passes or subsidies for monthly public transit or ridesharing costs incurred, equivalent to 30% of value or $50 - whichever is lower.	ALL	10%	☒
6	**M7 - Pre-Tax Transportation Benefits** Offer option for tenants to participate in a pre-tax transit program to encourage the use of sustainable transportation modes and leverage pre-tax income to pay for commute trip costs.	ALL	1%	☒
7	**M8 - Secure Bicycle Storage** Comply with CalGREEN minimum bicycle parking requirements.	ALL	1%	☒
8	**M9 - Design Streets to Encourage Bike/Ped Access** Design adjacent streets or roadways to facilitate multimodal travel.	ALL	1%	☒
9	**M25 - Showers, Lockers, and Changing Rooms for Cyclists** These amenities serve as end of trip facilities for employees arriving by bike or other active transportation forms.	ALL	2%	☒
10	**Total from Required Measures** Sum percentages from each selected measure from rows 1-9		35 %	

Form Continues on Page 2 →

D Additional Recommended

Select enough to meet the trip reduction target from section B

Click on each measure's title for more information

	Measure	Project Types	Percentage	Yes
11	**M12 - Flex Time, Compressed Work Week, Telecommute** Flex time allows employees some flexibility in their daily work schedules. Compressed work week allows employees to work fewer but longer days. Telecommuting functions similarly, allowing employees to work from home rather than the office, reducing vehicle travel on the days they work remotely.	ALL	5%	☑
12	**M14 - Paid Parking at Market Rate** Offer hourly/daily parking rates proportional to monthly rate or equivalent to cost of transit fare.	ALL	25%	☐
13	**M15 - Reduced Parking** Provide off-street parking at least 10% below locally-required minimums, or else below the locally-permitted parking maximums. Consideration may be required of potential spillover parking into surrounding areas.	ALL	10%	☑
14	**M16 - Short-Term Daily Parking** Offer daily or hourly parking rates that are proportional to the monthly rate or approximately the cost of a transit fare.	ALL	2%	☑
15	**M17 - Developer TDM Fee/TDM Fund** Voluntary impact fee payment on a per unit or square footage basis, to fund the implementation of TDM programs.	ALL	4%	☐
16	**M18 - Car Share On-Site** Provide on-site car share or vehicle fleets.	ALL	1%	☑
17	**M19 - Land Dedication or Capital Improvements for Transit** Contribute space on, or adjacent to, the project site for transit improvements. Select one or more Bus Pullout Space 1% ☐ Bus Shelter 1% ☐ Visual/Electrical Improvements (i.e., Lighting, Signage) 1% ☐ Other (i.e., Micromobility Parking Zone, TNC Loading Zone) 1% ☐	ALL	[ ]% Total percentages selected	☐
18	**M20 - Shuttle Program/Shuttle Consortium/Fund Transit Service** Establish a shuttle service to regional transit hubs or commercial centers. Shuttle service should be provided free of charge to employees and guests.	Non-transit Proximate	10%	☑
19	**M21 - Bike/Scooter Share On-Site** Allocate space for bike/scooter share parking.	All	1%	☐
20	**M22 - Active Transportation Subsidies** Offer biking/walking incentives to tenants, such as gift card/product raffles.	All	2%	☐
21	**M23 - Gap Closure** Construct or enhance quality of biking and walking facilities to/from site to existing trails, bikeways, and/or adjacent streets.	All	7%	☑
22	**M24 - Bike Repair Station** Offer on-site bike repair space/tools in visible, secure area.	All	0.5%	☑
23	**M26 - Pedestrian Oriented Uses & Amenities on Ground Floor** Provide on-site, visible amenities to tenants and guests, such as cafes, gyms, childcare, retail.	All	3%	☑
24	**Total from Additional Measures** Sum percentages from each selected measure from rows 11 - 23		38.5 %	

E Project Totals

Percentage from Required Measures (Section C Row 10): [ ]%

\+ Percentage from Additional Measures (Section D Row 24): [ ]%

Total Percentage from all Selected Measures (Sum of required and additional measures): [ ]%

Trip Reduction Target (Copy from Section B): [ ]%

Total Percentage from all selected measures must be greater than or equal to Trip Reduction Target

F Submit Checklist

See ccagtdm.org/submission for how to submit this form.

Questions?

Email Us
support@ccagtdm.org

Visit Our Website
ccagtdm.org

Appendix B – Detailed Description of TDM Measures

The following sections describe in detail each of the TDM strategies proposed as part of the development. All monitoring and reporting indicated below are for the purposes of complying with City requirements unless otherwise noted.

Increase Job Density

This measure accounts for the VMT reduction achieved by a project that is designed with a higher density of jobs compared to the average job density in the U.S. Increased densities affect the distance people travel and provide greater options for the mode of travel they choose. Increasing job density results in shorter and fewer trips by single-occupancy vehicles and thus a reduction in GHG emissions. It also takes into account the presence of on-site complimentary land uses and amenities that would support reduced vehicle trips.

Implement Commute Trip Reduction Marketing

This measure requires tenants to implement a marketing strategy that promotes employee trip reduction. This includes information sharing and marketing and additional amenities that make it easy for employees to opt for non-auto modes.

Transportation Manager and Commute Marketing Program

A transportation manager or designated employee for transportation-related marketing will generate positive impacts on the success of the TDM goals and elements. Commute industry data supports the notion that a transportation manager has a very positive impact on increasing and maintaining alternative mode use.

Each tenant's transportation manager will be responsible for the following:

- Providing commute program assistance to employees, and serving as the primary point of contact for employees who wish to commute using an alternative.
- Working with local agencies as needed, such as Caltrain, SamTrans, 511 Rideshare, the Bay Area Air Quality Management District (BAAQMD), and Commute.org.
- Cataloging all existing incentives that encourage employees to utilize alternative transportation programs.

- Conducting annual employee surveys and providing reports to the City of Burlingame that include commute patterns, mode splits, and TDM program success (process includes yearly surveying of employees, tabulation of data and provision of results in report format).
- Evaluating survey results for alternative transportation potential and changes to the current program, and updating the program as needed.

Benefits that may be organized by the transportation manager and provided to employees include the following:

- Producing any on-site transportation fairs and promotional events, as relevant.
- Hosting Bicycle Safety Classes in coordination with Commute.org or a local bicycle advocacy organization.
- Posting informational materials on transportation kiosks in common areas, as well as distributing alternative program information to employees via posters, flyers, banners, community newsletters, etc.
- Participate in the BAAQMD Spare the Air program. Spare the Air day notices will be forwarded to employees to discourage driving alone to work.

Guaranteed Ride Home Program

A common reason that employees do not use alternative modes is the inability to leave work unexpectedly for a family emergency or the fear of being stranded if they need to work late or there are disruptions in transit service. A TDM element that allays these concerns is a Guaranteed Ride Home or similar program. With these types of programs, employees can use a taxi service, rental car, or other means to get home, and the employer pays for the service. Commute.org provides a Guaranteed Ride Home program for all employees in San Mateo County who use an alternative to driving alone to get to work. The program is free for employees to participate in, and subsidizes up to $60 per trip up to four times per calendar year.

Provide Ridesharing Program

This measure will implement a ridesharing program and establish a permanent transportation management association with funding requirements for employers. Ridesharing encourages carpooled vehicle trips in place of single-occupied vehicle trips, thereby reducing the number of trips, VMT, and GHG emissions.

Ridesharing must be promoted through a multi-faceted approach. Examples include the following.

- Designating a certain percentage of desirable parking spaces for ridesharing vehicles.
- Designating adequate passenger loading and unloading and waiting areas for ridesharing vehicles.
- Providing an app or website for coordinating rides.

Subsidized Transit Passes

Transit subsidies, whether as pre- or post-tax benefits (this measure includes the option for tenants to participate in a pre-tax transit program), are an effective strategy to encourage transit ridership and have the greatest impact compared to all other tenant-provided TDM measures. GoPass, which is provided by Caltrain, allows companies to purchase annual unlimited-ride passes for all eligible employees. The annual cost is the greater of $342 per eligible user (all employees are considered eligible users, not just those who ride transit) or $28,728. SamTrans offers a Way2Go program that allows companies to purchase annual unlimited-ride passes for all eligible employees. The annual cost of the Way2Go program for employers is the greater of $125 per eligible employee/resident or $12,500.

Provide Employer-Sponsored Vanpool

This measure requires establishing an employer-sponsored vanpool service. Vanpooling vehicles are generally leased and provided by employers, non-profit organizations, government agencies, or public-private partnerships. Tenants/employers should provide financial incentives, such as ride-matching, to help facilitate participation.

End-of-Trip Facilities

End-of-Trip facilities include amenities that make it easier for employees to choose biking as a form of transportation, thereby reducing VMT and GHG emissions. These amenities include secure bike parking (such as bike lockers), showers, personal employee lockers, and on-site bicycle repair station. This measure includes installing and maintaining end-of-trip facilities for employee use. Facilities should be inclusive of all gender identities. Future tenants should consider including gender-neutral or single-occupancy options for additional privacy.

Pedestrian and Bicycle Network Improvements

This measure will increase the sidewalk and bicycle facility coverage to improve pedestrian and bicycle access. Providing sidewalks and an enhanced pedestrian network encourages people to walk instead of drive. Closing gaps in the bicycle network improves the accessibility and participation rate for those that are able to bicycle. This mode shift results in a reduction in VMT and GHG emissions. The 'study area' should be based on a 1 KM buffer around the area where the pedestrian network is being improved. The VMT reduction is limited to household VMT.

Implement Conventional Carshare Program

This measure will increase carshare access in the user's community by deploying conventional carshare vehicles. Carsharing offers people convenient access to a vehicle for personal or commuting purposes. This helps encourage transportation alternatives and reduces vehicle ownership, thereby avoiding VMT and associated GHG emissions. A variation of this measure, electric carsharing, is described in Measure T-20-B, Implement Electric Carshare Program.

Extend Transit Network Coverage or Hours

This measure will expand the local transit network by either adding or modifying existing transit service or extending the operation hours to enhance the service near the Project site. Starting services earlier in the morning and/or extending services to late-night hours can accommodate the commute times of alternative-shift workers. This will encourage the use of transit and therefore reduce VMT and associated GHG emissions.

Employee Survey

At the time of employment, all new employees will be asked to complete a short online survey to gauge their transportation needs and commute preferences. This quick survey will also allow the transportation manager to best connect the employee with transit resources, bicycle route maps, and 511.org or Scoop ride-matching sources. This survey also acts as an early opportunity to educate employees about resources and benefits.

In addition to the new employee survey, tenants must administer an annual employee survey that captures how each employee accesses the Project site and any trips they made during the day. The purpose of this survey is to provide reports to the City of Burlingame on commute patterns, mode splits, and TDM program success. In addition, annual surveys allow transportation managers to regularly assess and make adjustments as needed to improve transportation options available to employees. A sample survey is provided in **Appendix C**.

Encourage Flextime, Compressed Work Weeks, and Telecommuting

Flextime allows employees some flexibility in their daily work schedules. Flextime reduces peak period congestion directly by shifting trips to before or after peak periods and can also make ridesharing and transit use more feasible. Compressed work weeks allow employees to work fewer but longer days, thereby reducing the need to commute on the employee's day off. Telecommuting functions, similarly, allowing employees to work from home rather than the office, reducing vehicle travel on the days they work remotely.

Reduced Parking

Provide off-street private parking below local zoning code required minimums for a per-unit or square foot basis. Reduced parking can encourage new development at higher densities and can promote greater use of alternative transportation modes, particularly in combination with other TDM measures. This measure, however, is typically only effective when parking is constrained, and ample on-street parking is not available.

Appendix C – Sample Commute Survey

620 Airport Boulevard TDM Monitoring & Reporting – Sample Commute Survey
NOTE: Questions should be tailored by tenants based on company policies such as work schedules, available commuter benefits, etc.

1. What is your home zip code?
2. What are your typical work hours?
    a. Start time:
    b. End time:
3. Thinking about last week, how did you get to work on each of the following days? If you used more than one, please indicate the way for the longest part of your trip.
    a. Monday
    b. Tuesday
    c. Wednesday
    d. Thursday
    e. Friday
    f. Saturday
    g. Sunday
4. Thinking about last week, how did you leave work on each of the following days? If you used more than one, please indicate the way for the longest part of your trip.
    a. Monday
    b. Tuesday
    c. Wednesday
    d. Thursday
    e. Friday
    f. Saturday
    g. Sunday
5. Thinking about last week, how often did you leave the office in the middle of the day to get lunch or run errands?
    a. Yes, multiple times a day
    b. Yes, once a day
    c. Yes, a few times a week
    d. No, I did not leave the office during the day
6. When you leave the office in the middle of the day, how do you typically travel to get lunch or run errands?
    a. Private vehicle
        i. Drove my own private vehicle (Drive alone)
        ii. Drove my own private vehicle (Carpool)
        iii. Passenger in a private vehicle (Carpool)
    b. Uber/Lyft/Taxi drop-off
    c. Transit
        i. Caltrain
        ii. SamTrans Bus
    d. Bicycle
    e. Walked
    f. Bikeshare/E-scooter
    g. Other: _____________

7. What is most important to you when you choose how to get to work? (Select up to 3.)
    a. Travel time
    b. Cost
    c. Convenience/flexibility
    d. Reliability
    e. Comfort/safety
    f. Reducing pollution
    g. Ability to make stops between home and work
    h. Stress
8. If you typically use a non-drive alone mode to commute to work, how can we better support your commute?
    a. Company subsidy for transit
    b. Company subsidy for vanpool
    c. Company subsidy for biking or walking
    d. Lower parking rates for carpooling
    e. Preferred parking for carpooling
    f. Assistance using transit or biking
    g. Assistance with
    h. Flexible work schedule
    i. Ride home in case of emergency
    j. Incentive program (prizes or contests)
    k. Other: _________
9. If you normally drive alone to work, what are your main reasons for doing so?
    a. Need a car for work
    b. Need a car for personal use during the work day
    c. No reasonable transit option
    d. No reasonable walking or biking option
    e. No options for carpooling
    f. Need a car for errands or to transport children
    g. Cannot get home in an emergency
    h. Cost of taking Caltrain
    i. Other: ___________
10. If you usually drive alone to work, which of the following transportation options (other than driving alone) would appeal most to you? (Select up to 3.)
    a. Carpooling
    b. Vanpooling
    c. Transit
        i. Caltrain
        ii. SamTrans
    d. Bicycling
    e. Walking
    f. Not interested in other transportation options for commuting
    g. Other: _________
11. If you normally drive alone to work, what would encourage you to use a non-drive alone mode to commute to work? (Select up to 3.)
    a. Company subsidy for transit

b. Company subsidy for vanpool
c. Company subsidy for biking or walking
d. Parking cash-out
e. Lower parking rates for carpooling
f. Preferred parking for carpooling
g. Assistance using transit or biking
h. Assistance finding carpool partners
i. Flexible work schedule
j. Ride home in case of emergency
k. Incentive program (prizes or contests)
l. Other: _________

12. Do you have other comments about your transportation options for commuting to work?

Appendix B: Relevant Plans & Policies

Relevant Plans & Policies

A1.1 State

California Department of Transportation

Caltrans has authority over the state highway system, including freeways, interchanges, and arterial routes. Caltrans operates and maintains state highways in the Project site vicinity. The Guide for the Preparation of Traffic Impact Studies (Caltrans 2001) provides information that Caltrans uses to review impacts on state highway facilities, including freeway segments. This guidance was updated by the Local Development – Intergovernmental Review Program Interim Guidance published in November 2016 for consistency with Senate Bill (SB) 743.

Assembly Bill 32, Assembly Bill 398, and Senate Bill 375

With the passage of Assembly Bill (AB) 32, the Global Warming Solutions Act of 2006, the state committed itself to reducing greenhouse gas (GHG) emissions to 1990 levels by 2020. The California Air Resources Board (CARB) is coordinating a response to comply with AB 32. In 2008, CARB defined its 1990 baseline level of emissions. On December 11, 2008, CARB adopted its Proposed Scoping Plan for AB 32. This scoping plan included approval of SB 375 as the means for achieving regional transportation related GHG targets. In 2011, CARB completed its major rulemaking for reducing GHG emissions. Rules on emissions, as well as market-based mechanisms such as the cap-and-trade program, took effect on January 1, 2012.

Assembly Bill 398 was passed in July 2017 to reauthorize and extend the state's economy-wide greenhouse gas reduction program to 2030 and sets a new GHG emissions target of at least 40% below the 1990 level of emissions by 2030 and raised its goal to 40 percent below 1990 levels by 2030.

SB 375 provides guidance regarding curbing emissions from cars and light-duty trucks to help the state comply with AB 32. There are four major components to SB 375. First, SB 375 requires regional GHG emissions targets. CARB's Regional Targets Advisory Committee guides the adoption of targets to be met by 2020 and 2035 for each Metropolitan Planning Organization (MPO) in the state. These targets, which MPOs may propose themselves, must be updated every 8 years in conjunction with the revision schedule of the housing and transportation elements of local general plans. Second, MPOs are required to create a Sustainable Communities Strategy (SCS) that provides a plan for meeting regional targets. The SCS and the Regional Transportation Plan (RTP) must be consistent, including action items and financing decisions. If the SCS does not meet the regional target, the MPO must produce an alternative planning strategy that details an alternative plan for meeting the target. Third, SB 375 requires regional housing elements and transportation plans to be synchronized on 8-year schedules. In addition, Regional Housing Needs Assessment allocation numbers must conform to the SCS. If local jurisdictions are required to rezone land as a result of changes in the housing element, rezoning must take place within 3 years of adoption of the housing element. Finally, MPOs must use transportation and air emissions modeling techniques that are consistent with the guidelines prepared by the California Transportation Commission. Regional transportation planning agencies, cities, and counties are encouraged, but not required, to use travel demand models that are consistent with California Transportation Commission guidelines. The adopted RTP, per SB 375 (Plan Bay Area 2040), is discussed below.

Complete Streets (AB 1358)

AB 1358, also known as the California Complete Streets Act of 2008, requires cities and counties to include "complete street" policies in their general plans. These policies address issues regarding the safe accommodation of all users, including bicyclists, pedestrians, motorists, public transit vehicles and riders, children, the elderly, and persons with disabilities. These policies can apply to new streets as well as the redesign of transportation corridors.

State of California Senate Bill 743

Senate Bill 743 (Stats. 2013, ch. 386) (SB 743) is intended to better align CEQA transportation impact analysis practices and mitigation outcomes with the State's goals to reduce greenhouse gas (GHG) emissions, encourage infill development, and improve public health through more active transportation. The law creates several key statewide changes to the California Environmental Quality Act (CEQA).

First, the law requires the Governor's Office of Planning and Research (OPR) to establish new metrics for determining the significance of transportation impacts of projects within transit priority areas (TPAs) and allows OPR to extend use of the metrics beyond TPAs. OPR selected vehicle miles of travel (VMT) as the preferred transportation impact metric and applied their discretion to require its use statewide.

Second, this legislation establishes that aesthetic and parking impacts of a residential, mixed-use residential, or employment center projects on an infill site within a TPA shall not be considered significant impacts on the environment.

Third, the new CEQA Guidelines that implement this legislation state that generally, vehicle miles traveled is the most appropriate measure of transportation impacts, and that as of July 1, 2020, this requirement shall apply statewide, but that until that date, lead agencies may elect to rely on VMT rather than LOS to analyze transportation impacts.

Finally, the law establishes a new CEQA exemption for a residential, mixed-use, and employment center project a) within a transit priority area, b) consistent with a specific plan for which an EIR has been certified, and c) consistent with a Sustainable Communities Strategy (SCS). This exemption requires further review if the project or circumstances changes significantly.

To aid in SB 743 implementation, the following state guidance has been produced:

- *Technical Advisory on Evaluating Transportation Impacts in CEQA,* California Governor's Office of Planning and Research, December 2018[1]

[1] http://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf

- *California Air Resources Board* (CARB) *2017 Scoping Plan-Identified VMT Reductions and Relationship to State Climate Goals*, California Air Resources Board, January 2019[2]
- *Local Development – Intergovernmental Review Program Interim Guidance, Implementing Caltrans Strategic Management Plan 2015-2020 Consistent with SB 743*, Caltrans, November 9, 2016[3]

The California Air Resources Board 2017 *Scoping Plan-Identified VMT Reductions and Relationship to State Climate Goals* provides recommendations for VMT reduction thresholds that would be necessary to achieve the State's GHG reduction goals. CARB finds per-capita light-duty vehicle travel would need to be approximately 16.8 percent lower than existing by 2050, and overall, per-capita vehicle travel would need to be approximately 14.3 percent lower than existing levels by 2050 under that scenario. CARB also acknowledges that the SCS targets are not sufficient to meet climate goals. As stated in the report, "…the full reduction needed to meet our climate goals is an approximately 25 percent reduction in statewide per capita on-road light-duty transportation-related GHG emissions by 2035 relative to 2005."

OPR considered this research when developing recommended VMT thresholds. In the *Technical Advisory on Evaluating Transportation Impacts in CEQA* (December 2018), OPR recommends that a per capita or per employee VMT that is 15 percent below that of existing development may be a reasonable threshold. This threshold is based on the above mentioned research documents from CARB as well as evidence that suggests a 15 percent reduction in VMT is achievable at the project level in a variety of place types[4] and would help the State towards achieving its climate goals. However, each jurisdiction must apply the statewide VMT analysis guidance based on available travel data and tools.

A1.2 Regional

San Mateo City/County Association of Governments

The San Mateo City/County Association of Governments (C/CAG) is the Congestion Management Agency (CMA) for San Mateo County and is authorized to set State and federal funding priorities for improvements affecting the San Mateo County Congestion Management Program (CMP) roadway system. The C/CAG-designated CMP roadway system in Burlingame near the Project site includes U.S. 101.

A1.3 Local

City of Burlingame General Plan (2019)

The General Plan update includes key land use, mobility, and economic development policies that focus on the Bayfront planning area, which is generally the area between the San Francisco Bay and US-101 and is the location of the Project. The Economic Development Element emphasizes the City's interest to attract

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[2] https://ww2.arb.ca.gov/sites/default/files/2019-01/2017_sp_vmt_reductions_jan19.pdf
[3] https://dot.ca.gov/programs/transportation-planning/office-of-smart-mobility-climate-change/sb-743
[4] CAPCOA (2010) Quantifying Greenhouse Gas Mitigation Measures, p. 55, available at http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf

office and research and development uses to the Bayfront area while the Community Character and Mobility Elements contain goals that support this vision.

Community Character (Land Use) Element

- CC-1.5: Transportation Demand Management: Require that all major development projects include a Transportation Demand Management (TDM) program, as defined in the City's TDM regulations, to reduce single occupancy car trips. "Major development" shall be defined in the TDM regulations by square footage for commercial development, or minimum number of units for residential development.
- CC-6.3: Infill Development (Bayfront Area): Encourage increased intensity via high-quality infill development on surface parking lots, and support the conversion of surface parking lots into active commercial and hospitality uses.

Mobility Element

- M-1.1: Complete Streets: Define and develop a well-connected network of Complete Streets that can move all modes safely, efficiently, and comfortably to promote efficient circulation while also improving public health, safety, and accessibility.
- M-9.1: Vehicle Miles Traveled (VMT) Transportation Performance Measures: Update the City's transportation performance measures to use vehicle miles traveled (VMT) standards for traffic impact analyses instead of level of service (LOS) standards.
- M-14.1: Old Bayshore Highway and Airport Boulevard: Design and apply complete streets improvements to the Old Bayshore Highway and Airport Boulevard corridors.

2030 Climate Action Plan Update (2019)

The City of Burlingame's Climate Action Plan Update (CAP) presents the City's blueprint for responding to the challenge of climate change. The CAP outlines the City's climate strategy to reduce greenhouse gas emissions 40% by 2030, 60% by 2040, and 80% by 2050. To achieve the targets, the strategy includes 20 carbon-reduction measures and an implementation plan to track progress. Ten of the 20 carbon reduction strategies are related to transportation and the built environment, and the following strategy is relevant to the Project's travel demand estimate.

- Strategy #2: The City shall require new multi-unit residential developments of 10 units or more and commercial developments of 10,000 square feet or more to incorporate TDM strategies that achieve a 20% reduction in trip generation rates below the standard rate published in the latest Institute of Transportation Engineers (ITE) Trip Generation Manual (10th edition), or other reputable source. This trip reduction level may be achieved through site design, transit, bicycle, shuttle, and parking

Bicycle and Pedestrian Master Plan (2020)

The City of Burlingame's Bicycle and Pedestrian Master Plan aims wr#improve the safety, health, and quality of life of Burlingame residents through transportation infrastructure, programs, and policy improvements that enhance the safety, comfort, and attractiveness of walking and bicycling for people of all ages and abilities. The plan includes a series of goals and objectives that focus on creating a connected, safe, and comfortable bicycling and walking network that's attractive for a variety of trip purposes. In the Bayfront area and the vicinity of the Project site, the plan identified a need to strengthen bicycle connections between employment areas and regional transit stations such as Millbrae BART/Caltrain and the City's two Caltrain stations. The Airport Boulevard corridor, which is the primary roadway serving the Project site, is on the City's high injury bicycle network and the plan recommends upgrading the existing Class II bicycle lanes with a Class IV separated bikeway facility.

Appendix C: VMT Screening Memo

Memorandum

Date: March 7, 2022

To: Jeremy Lui, Vassar Properties

From: Jarrett Mullen, Fehr & Peers

Subject: Vehicle Miles Traveled Assessment for 620 Airport Boulevard

SF21-1183

This memorandum presents a vehicle miles traveled (VMT) screening assessment for a proposed 484,400 square-foot Office/R&D project located at 620 Airport Boulevard ("Project") in Burlingame, CA. The Project's California Environmental Quality Act (CEQA) transportation analysis must be consistent with California Senate Bill 743, which aligns CEQA transportation analysis with the state's greenhouse gas reduction targets.

Since the City of Burlingame is currently updating its citywide CEQA thresholds for consistency with SB743, this Project-specific approach has been developed for the 620 Airport Boulevard project based on the 2018 OPR Technical Advisory and policy direction from the City of Burlingame staff and the 2022 zoning code update. This project-specific approach represents a path forward for the City's consideration with respect to VMT considerations for the proposed Project.

VMT Background

State Policy

As of July 2019, lead agencies may no longer use vehicle delay metrics, such as level of service (LOS), to evaluate a project's transportation impacts under CEQA. Instead, the law recommended a new metric: vehicle miles traveled (VMT), defined as the amount and distance of vehicle travel. Since passenger cars constitute most vehicle travel, VMT functions as proxy for transportation greenhouse gas emissions. To assist local agencies with the VMT transition, the Governor's Office of Planning and Research published in 2018 the Technical Advisory on Evaluating Transportation Impacts in CEQA (OPR Technical Advisory) which outlines VMT analysis options.

Analytical

Vehicle miles traveled (VMT) is a measurement of the amount and distance that a person drives, accounting for the number of passengers within a vehicle. While many interdependent factors affect the amount and distance a person might drive, urban form is the primary variable. The density, mix of uses, and design of urban environments affects how many places a person can access within a given distance, time, and cost, using different ways of travel (e.g., private vehicle, public transit, bicycling, walking, etc.).

Typically, low-density development in areas with few travel options provides less access than a location with high-density, mix of land uses, and numerous ways of travel. Therefore, low-density development typically generates more VMT per capita compared to a similarly sized development located in urban areas. In general, higher VMT areas are associated with higher greenhouse gas emissions, energy usage, and air pollution than lower VMT areas.

CEQA Implications for Lead Agencies

The CEQA Guidelines and OPR's 2018 Technical Advisory provide a VMT implementation framework for lead agencies to analyze potential impacts from development projects. While each agency may adopt a customized methodology and impact thresholds, lead agencies typically adopt "screening thresholds" to quickly identify when a project should be expected to cause a less-than-significant impact without conducting a detailed study. The following is a Project screening assessment.

Project Screening Assessment

Both the OPR *Technical Advisory* (2018) and *CEQA Guidelines* (2021) list two screening approaches relevant to employment land uses: proximity to transit and location in a low-VMT area. This screening assessment focuses on proximity to transit.

Screening Assessment: Proximity to Transit

Generally, projects within ½ mile of an existing "major transit stop" or a stop along an existing "high quality transit corridor" should be presumed to cause less-than-significant transportation impact[1]. Both "major transit stop" and "high quality transit corridor" are defined below:

- *Major Transit Stop:* A site that contains an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a service interval of 15 minutes or less during the morning and afternoon peak commute periods (Pub. Resources Code, § 21099, subds. (a)(7), (b)(1).)

[1] CEQA Guidelines Section 15064.3, subdivision (b) (1),

- *High-Quality Transit Corridor:* A corridor with fixed-route bus service with service intervals no longer than 15 minutes during commute hours. (Pub. Resources Code, § 21155)

The City of Burlingame's zoning ordinance includes a definition of "high quality transportation corridors" that includes existing and planned fixed-route transit service. (§25.108.210)

The OPR *Technical Advisory* suggests that the less-than-significant presumption would not apply, however, if project- or location-specific information indicates the project will still generate significant levels of VMT. Relevant examples include providing parking in excess of City requirements and/or proposing a floor area ratio (FAR) of less than 0.75. Neither of these disqualifiers apply to the Project.

Project Assessment: **ELIGIBLE** The Project site is located within a ½ mile of a stop on a planned fixed-route transit route with 15-minute headways, the Commute.org Burlingame Point shuttle (service to start March 14, 2022). As such, the Burlingame Point Shuttle meets the "high quality transit corridor" criteria, and Project VMT impacts are presumed to be less-than-significant. A detailed VMT analysis is not required.

As shown in **Figure 1,** the Project site is approximately 300 feet from a Commute.org shuttle stop which would be served by the planned Burlingame Point shuttle route (service to start March 14, 2022). Based on the proposed Burlingame Point shuttle schedule shown in **Appendix A**, the service would operate on approximately 15-minute service intervals during peak commute periods and thus the shuttle's route along Airport Boulevard would qualify as a "high-quality transit corridor."

Findings

The City of Burlingame zoning code definition of a "high quality transportation corridor" and the CEQA Guidelines definition of a "high quality transit corridor" would apply to the Airport Boulevard corridor and the CEQA determination for this Project. Consequently, the Project's VMT impacts are presumed to be less-than-significant and a detailed VMT analysis is not required.

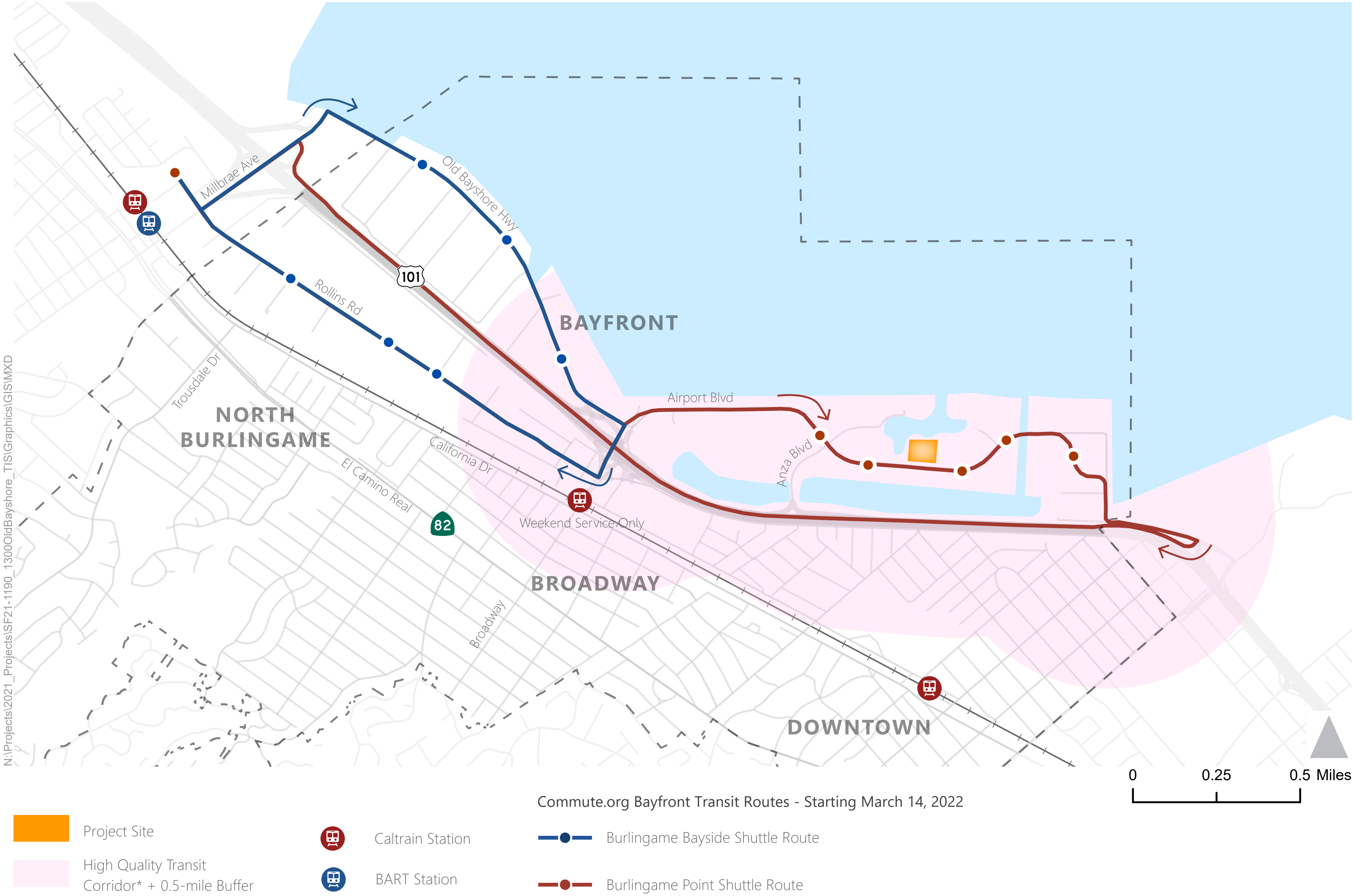


Figure 1

High Quality Transit Corridor

** City f Burlingame Municipal Code Section 25.108.210 defines a high quality transit corridor as "An existing or planned fixed-route bus corridor with headway of 15 minutes or better during both the morning and evening peak commute periods.*

Appendix A: Commute.org Burlingame Point Shuttle Initial Schedule

Temp. Schedule:
3/14/2022 - 4/1/2022

BURLINGAME POINT
SHUTTLE SCHEDULE

Temporary Schedule During Caltrain Single Tracking

(3/14/2022 - 4/1/2022)

Burlingame Point - AM Schedule

Run Numbers	BPT-A1	BPT-B1	BPT-A2	BPT-B2	BPT-A3	BPT-B3	BPT-A4	BPT-B4	BPT-A5	BPT-B5	BPT-A6	BPT-B6	BPT-A7	BPT-B7
	BART ARRIVES MILLBRAE STATION													
fr Richmond	6:36	6:51	7:06	7:21	7:36	7:51	8:06	8:21	8:36	8:51	9:06	9:21	9:36	9:51
	CALTRAIN ARRIVES MILLBRAE STATION													
Train Numbers Northbound (from SJ)		651 6:49	655 7:06			657 7:49	661 8:07			663 8:49	667 9:06			669 9:49
Train Numbers Southbound (from SF)	658 6:23		660 7:04	664 7:23			668 8:04	672 8:23			674 9:04	676 9:23		
	SHUTTLE DEPARTS MILLBRAE STATION													
Shuttle Departs Station	**6:45**	**7:00**	**7:15**	**7:30**	**7:45**	**8:00**	**8:15**	**8:30**	**8:45**	**9:00**	**9:15**	**9:30**	**9:45**	**10:00**
	SHUTTLE ARRIVES AT EMPLOYERS													
322 Airport Blvd. (Burlingame 102)	6:59	7:14	7:29	7:44	7:59	8:14	8:29	8:44	8:59	9:14	9:29	9:44	9:59	10:14
Airport & Bayview	7:00	7:15	7:30	7:45	8:00	8:15	8:30	8:45	9:00	9:15	9:30	9:45	10:00	10:15
600 Airport Blvd.	7:00	7:15	7:30	7:45	8:00	8:15	8:30	8:45	9:00	9:15	9:30	9:45	10:00	10:15
700 Airport Blvd.	7:01	7:16	7:31	7:46	8:01	8:16	8:31	8:46	9:01	9:16	9:31	9:46	10:01	10:16
800 Airport Blvd.	7:02	7:17	7:32	7:47	8:02	8:17	8:32	8:47	9:02	9:17	9:32	9:47	10:02	10:17
	SHUTTLE ARRIVES MILLBRAE STATION													
Shuttle Arrives Station	**7:14**	**7:29**	**7:44**	**7:59**	**8:14**	**8:29**	**8:44**	**8:59**	**9:14**	**9:29**	**9:44**	**9:59**		

Burlingame Point - PM Schedule

Run Numbers	BPT-A11	BPT-B11	BPT-A12	BPT-B12	BPT-A13	BPT-B13	BPT-A14	BPT-B14	BPT-A15	BPT-B15	BPT-A16	BPT-B16	BPT-A17	BPT-B17	BPT-A18	BPT-B18
	SHUTTLE DEPARTS MILLBRAE STATION															
Shuttle Departs Station			**3:23**	**3:38**	**3:53**	**4:08**	**4:23**	**4:38**	**4:53**	**5:08**	**5:23**	**5:38**	**5:53**	**6:08**	**6:23**	**6:38**
	SHUTTLE DEPARTS AT EMPLOYERS															
322 Airport Blvd. (Burlingame 102)	3:07	3:22	3:37	3:52	4:07	4:22	4:37	4:52	5:07	5:22	5:37	5:52	6:07	6:22	6:37	6:52
Airport & Bayview	3:08	3:23	3:38	3:53	4:08	4:23	4:38	4:53	5:08	5:23	5:38	5:53	6:08	6:23	6:38	6:53
600 Airport Blvd.	3:08	3:23	3:38	3:53	4:08	4:23	4:38	4:53	5:08	5:23	5:38	5:53	6:08	6:23	6:38	6:53
700 Airport Blvd.	3:09	3:24	3:39	3:54	4:09	4:24	4:39	4:54	5:09	5:24	5:39	5:54	6:09	6:24	6:39	6:54
800 Airport Blvd.	3:10	3:25	3:40	3:55	4:10	4:25	4:40	4:55	5:10	5:25	5:40	5:55	6:10	6:25	6:40	6:55
	SHUTTLE ARRIVES MILLBRAE STATION															
Shuttle Arrives Station	**3:23**	**3:38**	**3:53**	**4:08**	**4:23**	**4:38**	**4:53**	**5:08**	**5:23**	**5:38**	**5:53**	**6:08**	**6:23**	**6:38**	**6:53**	**7:08**
	BART DEPARTS MILLBRAE STATION															
to Richmond	3:30	3:45	4:00	4:15	4:30	4:45	5:00	5:15	5:30	5:45	6:00	6:15	6:30	6:45	7:00	7:18
	CALTRAIN ARRIVES MILLBRAE STATION															
Train Numbers Northbound (from SJ)	513 3:38		123 4:05			673 4:49	677 5:06			679 5:49	683 6:06			685 6:49	689 7:06	
Train Numbers Southbound (from SF)	408 3:32		678 4:04	680 4:23			682 5:04	684 5:14			688 6:04	690 6:14			694 7:04	696 7:14

Supported with Operating Grants from:

Appendix D: Intersection Operations Analysis

Intersection Operations Analysis

The following level of service analysis is presented for informational purposes only. In accordance with California Senate Bill 743[1], vehicle delay metrics such as level of service can no longer be used to assess project impacts under CEQA.

Fehr & Peers analyzed weekday AM and PM peak hour vehicle level of service (LOS) and delay at four study intersections without and with Project trips. The key parameters are described below.

Trip Generation

The Trip Generation analysis is presented in the primary section of the report.

Trip Distribution and Assignment

Project trip distribution is based on the City County Association of Governments (C/CAG) travel demand forecasting model and is shown in **Figure D1.** Trips are then assigned to the roadway network based on these model outputs.

Study Intersections

The following study intersections were selected based on local knowledge and consultation with City of Burlingame staff. Generally, Intersections 1 – 3 were selected to capture vehicle trips to/from north on the US-101 freeway and the City of Burlingame; Intersection 5 to capture vehicle trips into and out of the Project site; and Intersection 4 to capture vehicle trips to/from south on the US-101 freeway.

1. Anza Boulevard / Airport Boulevard (Signal Control)
2. Old Bayshore Highway / Airport Boulevard / Broadway (Signal Control)
3. Broadway / US-101 Southbound Ramps (Signal Control)
4. Airport Boulevard / US-101 Northbound Ramps (Signal Control)
5. Project Access / Airport Boulevard (Side-Street Stop Control)

[1] More information about Senate Bill 743 (SB 743) can be found in the accompanying Appendix B.

Project Site

Trip Distribution

AM (PM) Inbound

AM (PM) Outbound

Figure D1

Vehicle Trip Distribution

620 Airport Boulevard

Study Scenarios

Fehr & Peers studied traffic operations under the following study scenarios:

- *Existing No Project:* To analyze traffic conditions without the Project, historic traffic counts were used from 2019 to represent conditions prior to the COVID-19 shelter-in-place orders. Since historic traffic counts were not available at intersection two or three, Fehr & Peers used Streetlight Data, a big data vendor, to obtain historic traffic volume estimates at these intersections.
- *Existing Plus Project:* The Project's traffic volume was assigned to the roadway network following the assumptions described in the *Trip Distribution and Assignment* section.

'Existing' weekday AM and PM peak hour intersection turning movement volumes are shown in **Figure D2**:

Traffic Operations Analysis Methodology

The evaluation of traffic conditions on local streets involves an analysis of intersection operations, as intersections represent the locations where the roadway capacity is most constrained. Intersections are evaluated with level of service (LOS) calculations. Level of service is a qualitative description of operations ranging from LOS A, when the roadway facility has excess capacity and vehicles experience little or no delay, to LOS F, where the volume of vehicles exceeds the capacity resulting in long queues and excessive delays. Typically, LOS E represents "at-capacity" conditions and LOS F represents "over-capacity" conditions. At signalized intersections operating at LOS F, for example, drivers may have to wait through multiple signal cycles prior to making intended traffic movements. LOS criteria and average delay for signalized and unsignalized intersections are summarized in **Table 1** and **Table 2**, respectively.

Level of service (LOS) and delay were analyzed using the Highway Capacity Manual 6th Edition Methodology.

Proposed Project

Existing and Existing plus project scenario results are presented in **Table 3**.

Table 1: Signalized Intersection LOS Criteria

Level of Service	Description	Average Control Delay Per Vehicle (Seconds)
A	Operations with very low delay occurring with favorable progression and/or short cycle length.	≤ 10
B	Operations with low delay occurring with good progression and/or short cycle lengths.	> 10 and ≤ 20
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	> 20 and ≤ 35
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high volume-to-capacity (V/C) ratios. Many vehicles stop and individual cycle failures are noticeable.	> 35 and ≤ 55
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	> 55 and ≤ 80
F	Operation with delays unacceptable to most drivers occurring due to over saturation poor progression, or very long cycle lengths.	> 80

Source: Transportation Research Board, 2016. Highway Capacity Manual 6th Edition

Table 2: Unsignalized Intersection LOS Criteria

Level of Service	Description	Average Control Delay Per Vehicle (Seconds)
A	Operations with very little to no traffic delay	≤ 10
B	Operations with low traffic delay	> 10 - 15
C	Operations with average traffic delay	> 15 - 25
D	Operations with longer traffic delay	> 25 - 35
E	Operation with higher delays due to lack of gaps in opposing traffic	> 35 - 50
F	Operation with delays unacceptable to most drivers due to lack of gaps in opposing traffic	> 50

Source: Transportation Research Board, 2016. Highway Capacity Manual 6th Edition

Table 3: Level of Service & Delay Results – Proposed Project

	Intersection	Traffic Control	Peak Hour	Existing No Project		Existing Plus Project	
				LOS	Average Delay	LOS	Average Delay
1	Anza Boulevard / Airport Boulevard	Signal	AM	B	12	B	14
			PM	B	15	B	17
2	Old Bayshore Highway / Airport Boulevard / Broadway	Signal	AM	B	12	B	11
			PM	F	> 80	F	> 80
3	Broadway / US-101 Southbound Ramps	Signal	AM	C	28	D	46
			PM	B	17	B	20
4	Airport Boulevard / US-101 Northbound Ramps	Signal	AM	D	43	D	46
			PM	C	26	C	26
5	Project Center Driveway Access / Airport Boulevard	Side-Street Stop Control[1]	AM	--	--	A[2]	< 10
			PM	--	--	B	11

Source: Fehr & Peers, 2022

Notes: Average delay is expressed as seconds per vehicle.

1. The Project is not proposing a new traffic signal at the center driveway and peak hour MUTCD signal warrants are not met.
2. The southbound (SB) approach delay and LOS are reported for Intersection #5.

With the addition of Project trips, vehicle delay and LOS change is anticipated to be minimal at most study intersections. The largest increase in vehicle delay, which results in a change in LOS from C to D occurs at Intersection #3, where approximately 240 vehicle trips are anticipated to be added during the weekday AM peak hour, with 160 of those existing the southbound US-101 freeway and turning left on Broadway to travel to the project site. The southbound (project exiting) stop-controlled approach of Intersection #5 is anticipated to operate at LOS A during the AM peak hour and LOS B during the PM peak hour. MUTCD peak hour signal warrants are not met during either of these periods. The eastbound left 95th percentile queue of Intersection #5 during the AM peak hour is anticipated to be two vehicles, which will fit within the 125-foot-long queue storage pocket. Additional analysis was conducted for Intersection #5 to determine if the AM peak hour eastbound left 95th percentile queue would continue to be contained within the queue storage pocket even with the addition of peak hour vehicle traffic generated by development in the City of Burlingame's Bayfront employment district, consistent with the City of Burlingame's General Plan. The analysis anticipated that additional planned development could result in up to an additional 50 eastbound and 350 westbound vehicle trips along Airport Boulevard (in addition to the Project) during the AM peak hour. Under this scenario, the eastbound left 95th percentile queue of Intersection #5 during the AM peak hour is anticipated to be three vehicles, which would continue to fit within the 125-foot-long queue storage pocket.

As previously noted, in accordance with California Senate Bill 743, vehicle delay metrics such as level of service can no longer be used to assess project impacts under CEQA. However, level of service analysis can still be used for determining consistency with adopted agency plans and standards. Where standards refer to significant environmental impacts, the practice in the City of Burlingame is to instead identify these as significant inconsistencies with adopted plans.

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

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

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

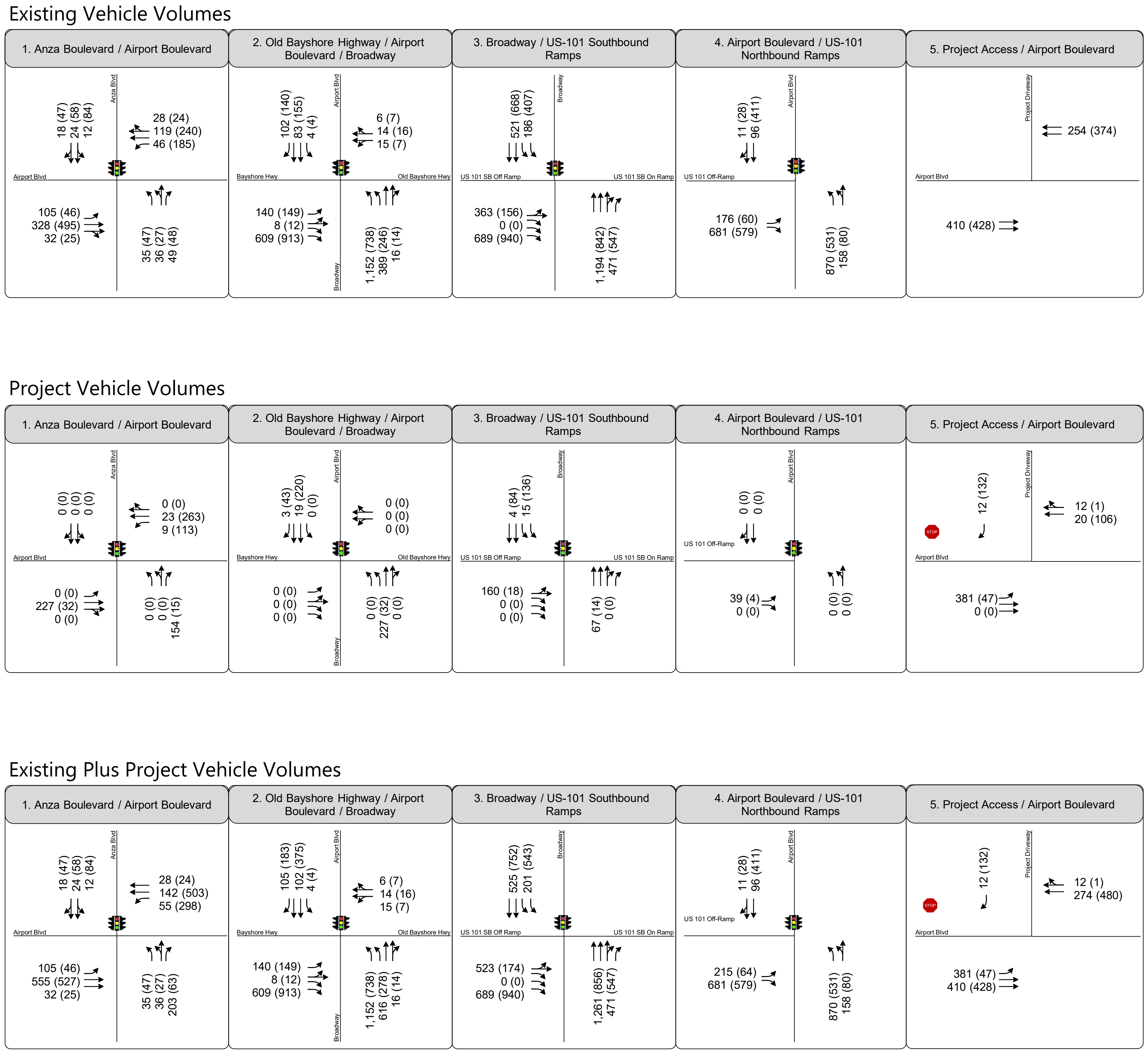
None of the study intersections in the Existing plus Project scenario included in **Table 3** meet the above criteria for a significant inconsistency with an adopted plan.

Left Turn Exit out of Main Driveway Option Supplemental Traffic Analysis

At the request of the Project Sponsor, peak hour intersection level of service analysis was conducted for a scenario in which vehicles were able to turn left onto Airport Boulevard out of the main project driveways. It is estimated that approximately 10% percent of exiting vehicles would use this left-turn option (as opposed to turning right) if it were available to them. No other changes to the project description are included as part of this scenario. Results of this scenario are presented in **Table 4**.

Table 4: Level of Service & Delay Results – Left Turn Exit out of Main Driveway Option

	Intersection	Traffic Control	Peak Hour	Existing No Project		Existing Plus Project Option	
				LOS	Average Delay	LOS	Average Delay
1	Anza Boulevard / Airport Boulevard	Signal	AM	B	12	B	14
			PM	B	15	B	17
2	Old Bayshore Highway / Airport Boulevard / Broadway	Signal	AM	B	12	B	11
			PM	F	> 80	F	> 80
3	Broadway / US-101 Southbound Ramps	Signal	AM	C	28	D	46
			PM	B	17	B	20
4	Airport Boulevard / US-101 Northbound Ramps	Signal	AM	D	43	D	46
			PM	C	26	C	26
5	Project Center Driveway Access / Airport Boulevard	Side-Street Stop Control[1]	AM	--	--	C[2]	18
			PM	--	--	B	14



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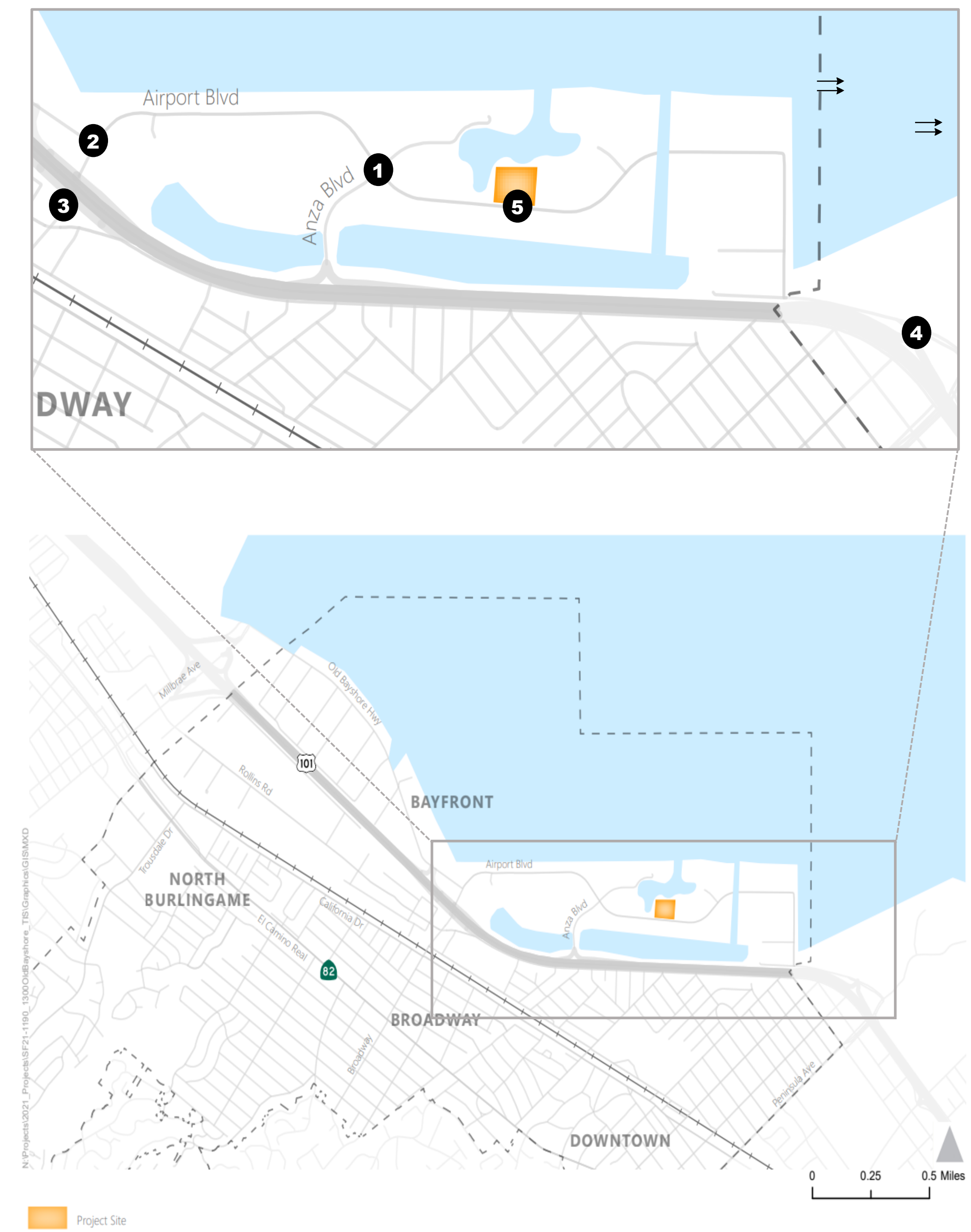

LEGEND

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

Figure D2
Weekday Peak Hour Intersection Volumes
Existing, Project, and Existing Plus Project

Appendix E: Intersection Analysis Reports

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	328	32	46	119	28	35	36	49	12	24	18
Future Volume (veh/h)	105	328	32	46	119	28	35	36	49	12	24	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	115	360	32	51	131	19	38	40	7	13	26	2
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	215	1017	90	203	938	133	128	134	113	41	89	7
Arrive On Green	0.12	0.31	0.31	0.11	0.30	0.30	0.07	0.07	0.07	0.04	0.04	0.04
Sat Flow, veh/h	1781	3301	292	1781	3117	444	1781	1870	1573	1100	2364	188
Grp Volume(v), veh/h	115	193	199	51	74	76	38	40	7	21	0	20
Grp Sat Flow(s),veh/h/ln	1781	1777	1816	1781	1777	1784	1781	1870	1573	1815	0	1837
Q Serve(g_s), s	2.1	3.0	3.0	0.9	1.1	1.1	0.7	0.7	0.1	0.4	0.0	0.4
Cycle Q Clear(g_c), s	2.1	3.0	3.0	0.9	1.1	1.1	0.7	0.7	0.1	0.4	0.0	0.4
Prop In Lane	1.00		0.16	1.00		0.25	1.00		1.00	0.61		0.10
Lane Grp Cap(c), veh/h	215	547	559	203	534	537	128	134	113	68	0	69
V/C Ratio(X)	0.53	0.35	0.36	0.25	0.14	0.14	0.30	0.30	0.06	0.31	0.00	0.28
Avail Cap(c_a), veh/h	1013	2021	2065	3140	4142	4160	2330	2446	2057	2374	0	2402
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.5	9.4	9.5	14.2	9.0	9.0	15.5	15.5	15.2	16.5	0.0	16.5
Incr Delay (d2), s/veh	0.8	0.4	0.4	0.2	0.1	0.1	0.5	0.5	0.1	1.0	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.9	0.9	0.3	0.3	0.3	0.3	0.3	0.0	0.2	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.3	9.8	9.8	14.5	9.1	9.1	16.0	15.9	15.3	17.5	0.0	17.3
LnGrp LOS	B	A	A	B	A	A	B	B	B	B	A	B
Approach Vol, veh/h		507			201			85			41	
Approach Delay, s/veh		11.1			10.5			15.9			17.4	
Approach LOS		B			B			B			B	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		6.5	8.0	15.3		5.3	8.3	15.1				
Change Period (Y+Rc), s		4.0	4.0	4.5		4.0	4.0	4.5				
Max Green Setting (Gmax), s		46.0	62.0	40.0		46.0	20.0	82.0				
Max Q Clear Time (g_c+I1), s		2.7	2.9	5.0		2.4	4.1	3.1				
Green Ext Time (p_c), s		0.2	0.1	2.5		0.1	0.1	0.9				
Intersection Summary												
HCM 6th Ctrl Delay			11.7									
HCM 6th LOS			B									
Notes												

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	8	609	15	14	6	1152	389	16	4	83	102
Future Volume (veh/h)	140	8	609	15	14	6	1152	389	16	4	83	102
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.96		0.93	0.97		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	149	0	267	15	14	0	1176	397	15	4	85	36
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	312	0	1774	130	143	0	1683	2803	106	7	1137	497
Arrive On Green	0.08	0.00	0.08	0.08	0.08	0.00	0.81	1.00	1.00	0.00	0.32	0.32
Sat Flow, veh/h	2688	0	2946	955	1918	0	3456	3491	132	1781	3554	1553
Grp Volume(v), veh/h	149	0	267	17	12	0	1176	202	210	4	85	36
Grp Sat Flow(s),veh/h/ln	1344	0	1473	1171	1617	0	1728	1777	1846	1781	1777	1553
Q Serve(g_s), s	6.5	0.0	5.2	1.2	0.8	0.0	17.7	0.0	0.0	0.3	2.0	1.9
Cycle Q Clear(g_c), s	7.3	0.0	5.2	1.5	0.8	0.0	17.7	0.0	0.0	0.3	2.0	1.9
Prop In Lane	1.00		1.00	0.86		0.00	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	312	0	1774	147	126	0	1683	1427	1482	7	1137	497
V/C Ratio(X)	0.48	0.00	0.15	0.12	0.09	0.00	0.70	0.14	0.14	0.54	0.07	0.07
Avail Cap(c_a), veh/h	319	0	1782	357	422	0	1683	1427	1482	208	1137	497
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	0.87	0.87	0.87	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.8	0.0	12.5	51.6	51.4	0.0	7.4	0.0	0.0	59.6	28.4	28.4
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.1	0.1	0.0	1.0	0.2	0.2	20.7	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	1.7	0.5	0.3	0.0	3.7	0.1	0.1	0.2	0.9	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.2	0.0	12.5	51.8	51.5	0.0	8.3	0.2	0.2	80.3	28.6	28.7
LnGrp LOS	E	A	B	D	D	A	A	A	A	F	C	C
Approach Vol, veh/h		416			29			1588			125	
Approach Delay, s/veh		27.8			51.7			6.2			30.2	
Approach LOS		C			D			A			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.5	101.4		14.1	62.4	43.5		14.1
Change Period (Y+Rc), s	4.0	5.1		* 4.7	4.0	5.1		* 4.7
Max Green Setting (Gmax), s	4.0	46.5		* 31	22.1	38.4		* 9.7
Max Q Clear Time (g_c+I1), s	2.3	2.0		3.5	19.7	4.0		9.3
Green Ext Time (p_c), s	0.0	0.4		0.0	0.1	0.1		0.0

Intersection Summary		
HCM 6th Ctrl Delay		12.4
HCM 6th LOS		B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	363	0	689	0	0	0	0	1194	471	186	521	0
Future Volume (veh/h)	363	0	689	0	0	0	0	1194	471	186	521	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	370	0	158				0	1218	335	190	532	0
Peak Hour Factor	0.98	0.98	0.98				0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	396	0	804				0	3063	865	374	2476	0
Arrive On Green	0.22	0.00	0.22				0.00	0.55	0.55	0.04	0.23	0.00
Sat Flow, veh/h	1781	0	3614				0	5611	1585	3456	3647	0
Grp Volume(v), veh/h	370	0	158				0	1218	335	190	532	0
Grp Sat Flow(s),veh/h/ln	1781	0	1205				0	1870	1585	1728	1777	0
Q Serve(g_s), s	24.5	0.0	4.3				0.0	15.1	14.6	6.5	14.6	0.0
Cycle Q Clear(g_c), s	24.5	0.0	4.3				0.0	15.1	14.6	6.5	14.6	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	396	0	804				0	3063	865	374	2476	0
V/C Ratio(X)	0.93	0.00	0.20				0.00	0.40	0.39	0.51	0.21	0.00
Avail Cap(c_a), veh/h	445	0	903				0	3063	865	374	2476	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.95	0.95	0.00
Uniform Delay (d), s/veh	45.8	0.0	37.9				0.0	15.8	15.7	54.7	19.6	0.0
Incr Delay (d2), s/veh	24.2	0.0	0.0				0.0	0.4	1.3	0.4	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.4	0.0	1.3				0.0	6.5	5.5	3.0	7.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.0	0.0	38.0				0.0	16.2	17.0	55.2	19.8	0.0
LnGrp LOS	E	A	D				A	B	B	E	B	A
Approach Vol, veh/h		528						1553			722	
Approach Delay, s/veh		60.4						16.4			29.1	
Approach LOS		E						B			C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	18.1	70.6		31.3		88.7
Change Period (Y+Rc), s	5.1	* 5.1		4.6		5.1
Max Green Setting (Gmax), s	10.8	* 66		30.0		64.5
Max Q Clear Time (g_c+I1), s	8.5	17.1		26.5		16.6
Green Ext Time (p_c), s	0.0	1.9		0.2		1.4

Intersection Summary	
HCM 6th Ctrl Delay	27.9
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	176	681	870	158	96	11
Future Volume (veh/h)	176	681	870	158	96	11
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	187	391	1052	0	102	5
Peak Hour Factor	0.94	0.94	0.94	0.90	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	376	792	1027	539	1265	62
Arrive On Green	0.21	0.21	0.29	0.00	0.37	0.37
Sat Flow, veh/h	1781	1585	3563	1870	3543	168
Grp Volume(v), veh/h	187	391	1052	0	52	55
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1870	1777	1840
Q Serve(g_s), s	8.0	14.1	24.8	0.0	1.6	1.7
Cycle Q Clear(g_c), s	8.0	14.1	24.8	0.0	1.6	1.7
Prop In Lane	1.00	1.00	1.00			0.09
Lane Grp Cap(c), veh/h	376	792	1027	539	652	675
V/C Ratio(X)	0.50	0.49	1.02	0.00	0.08	0.08
Avail Cap(c_a), veh/h	514	914	1027	539	652	675
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	29.9	14.3	30.6	0.0	17.8	17.8
Incr Delay (d2), s/veh	1.5	0.7	34.3	0.0	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	8.1	14.9	0.0	0.7	0.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	31.4	15.0	64.9	0.0	18.0	18.0
LnGrp LOS	C	B	F	A	B	B
Approach Vol, veh/h	578			1052	107	
Approach Delay, s/veh	20.3			64.9	18.0	
Approach LOS	C			E	B	

Timer - Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		36.7				28.0		21.3
Change Period (Y+Rc), s		5.1				3.2		3.2
Max Green Setting (Gmax), s		24.9				24.8		24.8
Max Q Clear Time (g_c+I1), s		3.7				26.8		16.1
Green Ext Time (p_c), s		0.6				0.0		2.1

Intersection Summary	
HCM 6th Ctrl Delay	47.2
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Intersection						
Int Delay, s/veh	0.4					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	407	254	12	3	19
Future Vol, veh/h	12	407	254	12	3	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	442	276	13	3	21

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	289	0	-	0	530	145
Stage 1	-	-	-	-	283	-
Stage 2	-	-	-	-	247	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1270	-	-	-	479	876
Stage 1	-	-	-	-	740	-
Stage 2	-	-	-	-	771	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1270	-	-	-	474	876
Mov Cap-2 Maneuver	-	-	-	-	474	-
Stage 1	-	-	-	-	733	-
Stage 2	-	-	-	-	771	-

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

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1270	-	-	-	785
HCM Lane V/C Ratio	0.01	-	-	-	0.03
HCM Control Delay (s)	7.9	-	-	-	9.7
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	495	25	185	240	24	47	27	48	84	58	47
Future Volume (veh/h)	46	495	25	185	240	24	47	27	48	84	58	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	55	596	28	223	289	23	45	50	6	101	70	30
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	163	939	44	304	1168	92	128	135	113	184	138	60
Arrive On Green	0.09	0.27	0.27	0.17	0.35	0.35	0.07	0.07	0.07	0.11	0.11	0.11
Sat Flow, veh/h	1781	3455	162	1781	3333	264	1781	1870	1570	1710	1289	556
Grp Volume(v), veh/h	55	306	318	223	153	159	45	50	6	105	0	96
Grp Sat Flow(s),veh/h/ln	1781	1777	1840	1781	1777	1820	1781	1870	1570	1785	0	1770
Q Serve(g_s), s	1.3	6.6	6.6	5.2	2.7	2.7	1.0	1.1	0.2	2.4	0.0	2.2
Cycle Q Clear(g_c), s	1.3	6.6	6.6	5.2	2.7	2.7	1.0	1.1	0.2	2.4	0.0	2.2
Prop In Lane	1.00		0.09	1.00		0.14	1.00		1.00	0.96		0.31
Lane Grp Cap(c), veh/h	163	483	500	304	623	638	128	135	113	192	0	190
V/C Ratio(X)	0.34	0.63	0.64	0.73	0.25	0.25	0.35	0.37	0.05	0.55	0.00	0.50
Avail Cap(c_a), veh/h	817	1651	1710	817	1631	1670	1022	1073	900	1024	0	1015
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.5	14.0	14.0	17.1	10.1	10.1	19.3	19.3	18.8	18.5	0.0	18.4
Incr Delay (d2), s/veh	0.4	0.5	0.5	1.3	0.1	0.1	0.6	0.6	0.1	0.9	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	2.3	2.3	1.9	0.8	0.9	0.4	0.5	0.1	0.9	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.0	14.5	14.5	18.4	10.1	10.2	19.9	19.9	18.9	19.4	0.0	19.1
LnGrp LOS	B	B	B	B	B	B	B	B	B	B	A	B
Approach Vol, veh/h		679			535			101			201	
Approach Delay, s/veh		14.8			13.6			19.8			19.3	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.4	16.3		8.7	8.0	19.8		7.1				
Change Period (Y+Rc), s	4.0	* 4.5		4.0	4.0	4.5		4.0				
Max Green Setting (Gmax), s	20.0	* 41		25.0	20.0	40.0		25.0				
Max Q Clear Time (g_c+I1), s	7.2	8.6		4.4	3.3	4.7		3.1				
Green Ext Time (p_c), s	0.3	2.6		0.7	0.0	1.2		0.2				

Intersection Summary			
HCM 6th Ctrl Delay			15.3
HCM 6th LOS			B

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	149	12	913	7	16	7	738	246	14	4	155	140
Future Volume (veh/h)	149	12	913	7	16	7	738	246	14	4	155	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.92	1.00		0.95	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	175	0	462	8	18	1	820	273	14	4	172	50
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	234	0	775	69	167	10	636	2437	124	7	1846	813
Arrive On Green	0.07	0.00	0.07	0.07	0.07	0.07	0.06	0.23	0.23	0.00	0.52	0.52
Sat Flow, veh/h	3563	0	2905	1030	2483	143	3456	3439	176	1781	3554	1565
Grp Volume(v), veh/h	175	0	462	14	0	13	820	140	147	4	172	50
Grp Sat Flow(s),veh/h/ln	1781	0	1452	1819	0	1836	1728	1777	1838	1781	1777	1565
Q Serve(g_s), s	5.8	0.0	0.0	0.9	0.0	0.8	22.1	7.5	7.5	0.3	2.9	1.9
Cycle Q Clear(g_c), s	5.8	0.0	0.0	0.9	0.0	0.8	22.1	7.5	7.5	0.3	2.9	1.9
Prop In Lane	1.00		1.00	0.57		0.08	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	234	0	775	122	0	123	636	1259	1302	7	1846	813
V/C Ratio(X)	0.75	0.00	0.60	0.12	0.00	0.10	1.29	0.11	0.11	0.54	0.09	0.06
Avail Cap(c_a), veh/h	288	0	819	474	0	479	636	1259	1302	119	1846	813
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.93	0.93	0.93	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.1	0.0	39.5	52.6	0.0	52.6	56.4	16.2	16.3	59.6	14.6	14.3
Incr Delay (d2), s/veh	6.0	0.0	0.7	0.2	0.0	0.1	140.6	0.2	0.2	20.7	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	6.0	0.4	0.0	0.4	22.7	3.2	3.4	0.2	1.2	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.1	0.0	40.2	52.8	0.0	52.7	197.0	16.4	16.4	80.3	14.7	14.5
LnGrp LOS	E	A	D	D	A	D	F	B	B	F	B	B
Approach Vol, veh/h		637			27			1107			226	
Approach Delay, s/veh		45.9			52.7			150.2			15.8	
Approach LOS		D			D			F			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.5	90.1		12.8	27.2	67.4		12.6
Change Period (Y+Rc), s	4.0	5.1		* 4.7	5.1	* 5.1		4.7
Max Green Setting (Gmax), s	8.0	52.5		* 31	22.1	* 38		9.7
Max Q Clear Time (g_c+I1), s	12.3	9.5		2.9	24.1	4.9		7.8
Green Ext Time (p_c), s	0.0	0.3		0.0	0.0	0.2		0.1

Intersection Summary	
HCM 6th Ctrl Delay	100.4
HCM 6th LOS	F

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	0	940	0	0	0	0	842	547	407	668	0
Future Volume (veh/h)	156	0	940	0	0	0	0	842	547	407	668	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	159	0	320				0	994	316	415	682	0
Peak Hour Factor	0.98	0.98	0.98				0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	189	0	384				0	3627	1025	460	2889	0
Arrive On Green	0.11	0.00	0.11				0.00	1.00	1.00	0.27	1.00	0.00
Sat Flow, veh/h	1781	0	3614				0	5611	1585	3456	3647	0
Grp Volume(v), veh/h	159	0	320				0	994	316	415	682	0
Grp Sat Flow(s),veh/h/ln	1781	0	1205				0	1870	1585	1728	1777	0
Q Serve(g_s), s	10.5	0.0	10.4				0.0	0.0	0.0	13.9	0.0	0.0
Cycle Q Clear(g_c), s	10.5	0.0	10.4				0.0	0.0	0.0	13.9	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	189	0	384				0	3627	1025	460	2889	0
V/C Ratio(X)	0.84	0.00	0.83				0.00	0.27	0.31	0.90	0.24	0.00
Avail Cap(c_a), veh/h	313	0	635				0	3627	1025	654	2889	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	2.00	2.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.88	0.88	0.00
Uniform Delay (d), s/veh	52.6	0.0	52.6				0.0	0.0	0.0	43.3	0.0	0.0
Incr Delay (d2), s/veh	4.4	0.0	2.0				0.0	0.2	0.8	8.7	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	0.0	3.2				0.0	0.1	0.2	5.7	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.1	0.0	54.6				0.0	0.2	0.8	52.0	0.2	0.0
LnGrp LOS	E	A	D				A	A	A	D	A	A
Approach Vol, veh/h		479						1310			1097	
Approach Delay, s/veh		55.4						0.3			19.8	
Approach LOS		E						A			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	20.0	82.7		17.3		102.7
Change Period (Y+Rc), s	4.0	5.1		4.6		5.1
Max Green Setting (Gmax), s	22.7	62.5		21.1		69.2
Max Q Clear Time (g_c+I1), s	15.9	2.0		12.5		2.0
Green Ext Time (p_c), s	0.1	1.5		0.2		1.9

Intersection Summary		
HCM 6th Ctrl Delay		16.9
HCM 6th LOS		B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	60	579	531	80	411	28
Future Volume (veh/h)	60	579	531	80	411	28
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	64	536	629	0	437	25
Peak Hour Factor	0.94	0.94	0.94	0.90	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	503	793	778	408	1250	71
Arrive On Green	0.28	0.28	0.22	0.00	0.37	0.37
Sat Flow, veh/h	1781	1585	3563	1870	3511	195
Grp Volume(v), veh/h	64	536	629	0	227	235
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1870	1777	1835
Q Serve(g_s), s	2.3	21.9	14.4	0.0	8.0	8.0
Cycle Q Clear(g_c), s	2.3	21.9	14.4	0.0	8.0	8.0
Prop In Lane	1.00	1.00	1.00			0.11
Lane Grp Cap(c), veh/h	503	793	778	408	650	671
V/C Ratio(X)	0.13	0.68	0.81	0.00	0.35	0.35
Avail Cap(c_a), veh/h	514	803	1027	539	650	671
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	23.0	16.2	31.9	0.0	19.8	19.8
Incr Delay (d2), s/veh	0.2	2.5	4.3	0.0	1.5	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	11.4	6.4	0.0	3.3	3.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	23.1	18.7	36.2	0.0	21.3	21.3
LnGrp LOS	C	B	D	A	C	C
Approach Vol, veh/h	600			629	462	
Approach Delay, s/veh	19.2			36.2	21.3	
Approach LOS	B			D	C	

Timer - Assigned Phs	2	6	8
Phs Duration (G+Y+Rc), s	36.6	22.0	27.5
Change Period (Y+Rc), s	5.1	3.2	3.2
Max Green Setting (Gmax), s	24.9	24.8	24.8
Max Q Clear Time (g_c+I1), s	10.0	16.4	23.9
Green Ext Time (p_c), s	3.0	2.4	0.3

Intersection Summary	
HCM 6th Ctrl Delay	26.1
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	425	374	6	3	16
Future Vol, veh/h	9	425	374	6	3	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	462	407	7	3	17

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	414	0	-	0	662	207
Stage 1	-	-	-	-	411	-
Stage 2	-	-	-	-	251	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1141	-	-	-	395	799
Stage 1	-	-	-	-	638	-
Stage 2	-	-	-	-	768	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1141	-	-	-	391	799
Mov Cap-2 Maneuver	-	-	-	-	391	-
Stage 1	-	-	-	-	632	-
Stage 2	-	-	-	-	768	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1141	-	-	-	686
HCM Lane V/C Ratio	0.009	-	-	-	0.03
HCM Control Delay (s)	8.2	-	-	-	10.4
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	555	32	55	142	28	35	36	203	12	24	18
Future Volume (veh/h)	105	555	32	55	142	28	35	36	203	12	24	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	115	610	33	60	156	21	38	40	130	13	26	2
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	203	1095	59	178	962	127	233	245	206	40	87	7
Arrive On Green	0.11	0.32	0.32	0.10	0.31	0.31	0.13	0.13	0.13	0.04	0.04	0.04
Sat Flow, veh/h	1781	3428	185	1781	3149	417	1781	1870	1574	1100	2364	188
Grp Volume(v), veh/h	115	316	327	60	87	90	38	40	130	21	0	20
Grp Sat Flow(s),veh/h/ln	1781	1777	1836	1781	1777	1790	1781	1870	1574	1815	0	1837
Q Serve(g_s), s	2.4	5.9	5.9	1.3	1.4	1.5	0.8	0.8	3.1	0.5	0.0	0.4
Cycle Q Clear(g_c), s	2.4	5.9	5.9	1.3	1.4	1.5	0.8	0.8	3.1	0.5	0.0	0.4
Prop In Lane	1.00		0.10	1.00		0.23	1.00		1.00	0.61		0.10
Lane Grp Cap(c), veh/h	203	568	587	178	543	547	233	245	206	66	0	67
V/C Ratio(X)	0.57	0.56	0.56	0.34	0.16	0.16	0.16	0.16	0.63	0.32	0.00	0.29
Avail Cap(c_a), veh/h	891	1778	1837	2762	3644	3671	2050	2152	1811	2089	0	2113
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.8	11.3	11.3	16.8	10.1	10.2	15.4	15.4	16.5	18.8	0.0	18.8
Incr Delay (d2), s/veh	0.9	0.9	0.8	0.4	0.1	0.1	0.1	0.1	1.2	1.0	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	1.9	2.0	0.5	0.5	0.5	0.3	0.3	1.0	0.2	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.7	12.1	12.1	17.2	10.3	10.3	15.5	15.5	17.6	19.8	0.0	19.6
LnGrp LOS	B	B	B	B	B	B	B	B	B	B	A	B
Approach Vol, veh/h		758			237			208			41	
Approach Delay, s/veh		13.0			12.0			16.8			19.7	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		9.2	8.0	17.3		5.5	8.6	16.7
Change Period (Y+Rc), s		4.0	4.0	4.5		4.0	4.0	4.5
Max Green Setting (Gmax), s		46.0	62.0	40.0		46.0	20.0	82.0
Max Q Clear Time (g_c+I1), s		5.1	3.3	7.9		2.5	4.4	3.5
Green Ext Time (p_c), s		0.4	0.1	4.4		0.1	0.1	1.1

Intersection Summary	
HCM 6th Ctrl Delay	13.6
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	8	609	15	14	6	1152	616	16	4	102	105
Future Volume (veh/h)	140	8	609	15	14	6	1152	616	16	4	102	105
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.96		0.93	0.97		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	149	0	267	15	14	0	1176	629	15	4	104	38
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	312	0	1774	130	143	0	1683	2848	68	7	1137	497
Arrive On Green	0.08	0.00	0.08	0.08	0.08	0.00	0.81	1.00	1.00	0.00	0.32	0.32
Sat Flow, veh/h	2688	0	2946	955	1918	0	3456	3547	85	1781	3554	1553
Grp Volume(v), veh/h	149	0	267	17	12	0	1176	315	329	4	104	38
Grp Sat Flow(s),veh/h/ln	1344	0	1473	1171	1617	0	1728	1777	1855	1781	1777	1553
Q Serve(g_s), s	6.5	0.0	5.2	1.2	0.8	0.0	17.7	0.0	0.0	0.3	2.5	2.0
Cycle Q Clear(g_c), s	7.3	0.0	5.2	1.5	0.8	0.0	17.7	0.0	0.0	0.3	2.5	2.0
Prop In Lane	1.00		1.00	0.86		0.00	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	312	0	1774	147	126	0	1683	1427	1489	7	1137	497
V/C Ratio(X)	0.48	0.00	0.15	0.12	0.09	0.00	0.70	0.22	0.22	0.54	0.09	0.08
Avail Cap(c_a), veh/h	319	0	1782	357	422	0	1683	1427	1489	208	1137	497
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	0.84	0.84	0.84	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.8	0.0	12.5	51.6	51.4	0.0	7.4	0.0	0.0	59.6	28.6	28.4
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.1	0.1	0.0	0.9	0.3	0.3	20.7	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	1.7	0.5	0.3	0.0	3.7	0.1	0.1	0.2	1.1	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.2	0.0	12.5	51.8	51.5	0.0	8.3	0.3	0.3	80.3	28.7	28.7
LnGrp LOS	E	A	B	D	D	A	A	A	A	F	C	C
Approach Vol, veh/h		416			29			1820			146	
Approach Delay, s/veh		27.8			51.7			5.5			30.2	
Approach LOS		C			D			A			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.5	101.4		14.1	62.4	43.5		14.1
Change Period (Y+Rc), s	4.0	5.1		* 4.7	4.0	5.1		* 4.7
Max Green Setting (Gmax), s	4.0	46.5		* 31	22.1	38.4		* 9.7
Max Q Clear Time (g_c+I1), s	2.3	2.0		3.5	19.7	4.5		9.3
Green Ext Time (p_c), s	0.0	0.7		0.0	0.1	0.1		0.0

Intersection Summary	
HCM 6th Ctrl Delay	11.4
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	523	0	689	0	0	0	0	1261	471	201	525	0
Future Volume (veh/h)	523	0	689	0	0	0	0	1261	471	201	525	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	534	0	158				0	1287	337	205	536	0
Peak Hour Factor	0.98	0.98	0.98				0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	445	0	903				0	3063	865	279	2378	0
Arrive On Green	0.25	0.00	0.25				0.00	0.55	0.55	0.03	0.22	0.00
Sat Flow, veh/h	1781	0	3614				0	5611	1585	3456	3647	0
Grp Volume(v), veh/h	534	0	158				0	1287	337	205	536	0
Grp Sat Flow(s),veh/h/ln	1781	0	1205				0	1870	1585	1728	1777	0
Q Serve(g_s), s	30.0	0.0	4.1				0.0	16.2	14.7	7.1	14.8	0.0
Cycle Q Clear(g_c), s	30.0	0.0	4.1				0.0	16.2	14.7	7.1	14.8	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	445	0	903				0	3063	865	279	2378	0
V/C Ratio(X)	1.20	0.00	0.17				0.00	0.42	0.39	0.73	0.23	0.00
Avail Cap(c_a), veh/h	445	0	903				0	3063	865	311	2378	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.95	0.95	0.00
Uniform Delay (d), s/veh	45.0	0.0	35.3				0.0	16.1	15.7	57.1	21.2	0.0
Incr Delay (d2), s/veh	109.5	0.0	0.0				0.0	0.4	1.3	6.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	26.7	0.0	1.2				0.0	6.9	5.6	3.4	7.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	154.5	0.0	35.3				0.0	16.5	17.0	63.1	21.5	0.0
LnGrp LOS	F	A	D				A	B	B	E	C	A
Approach Vol, veh/h		692						1624			741	
Approach Delay, s/veh		127.3						16.6			33.0	
Approach LOS		F						B			C	

Timer - Assigned Phs	1	2	4	6
Phs Duration (G+Y+Rc), s	14.8	70.6	34.6	85.4
Change Period (Y+Rc), s	5.1	* 5.1	4.6	5.1
Max Green Setting (Gmax), s	10.8	* 66	30.0	64.5
Max Q Clear Time (g_c+I1), s	9.1	18.2	32.0	16.8
Green Ext Time (p_c), s	0.0	2.1	0.0	1.5

Intersection Summary	
HCM 6th Ctrl Delay	45.6
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	215	681	870	158	96	11
Future Volume (veh/h)	215	681	870	158	96	11
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	229	456	1052	0	102	3
Peak Hour Factor	0.94	0.94	0.94	0.90	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	424	834	1027	539	1198	35
Arrive On Green	0.24	0.24	0.29	0.00	0.34	0.34
Sat Flow, veh/h	1781	1585	3563	1870	3619	103
Grp Volume(v), veh/h	229	456	1052	0	51	54
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1870	1777	1852
Q Serve(g_s), s	9.7	16.4	24.8	0.0	1.7	1.7
Cycle Q Clear(g_c), s	9.7	16.4	24.8	0.0	1.7	1.7
Prop In Lane	1.00	1.00	1.00			0.06
Lane Grp Cap(c), veh/h	424	834	1027	539	604	629
V/C Ratio(X)	0.54	0.55	1.02	0.00	0.08	0.09
Avail Cap(c_a), veh/h	514	914	1027	539	604	629
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	28.6	13.5	30.6	0.0	19.3	19.3
Incr Delay (d2), s/veh	1.5	0.8	34.3	0.0	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	9.4	14.9	0.0	0.7	0.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	30.2	14.3	64.9	0.0	19.6	19.6
LnGrp LOS	C	B	F	A	B	B
Approach Vol, veh/h	685			1052	105	
Approach Delay, s/veh	19.6			64.9	19.6	
Approach LOS	B			E	B	

Timer - Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		34.3				28.0		23.7
Change Period (Y+Rc), s		5.1				3.2		3.2
Max Green Setting (Gmax), s		24.9				24.8		24.8
Max Q Clear Time (g_c+I1), s		3.7				26.8		18.4
Green Ext Time (p_c), s		0.6				0.0		2.0

Intersection Summary		
HCM 6th Ctrl Delay		45.5
HCM 6th LOS		D

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	381	410	274	12	0	12
Future Vol, veh/h	381	410	274	12	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	125	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	414	446	298	13	0	13

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	311	0	-	0	1356	156
Stage 1	-	-	-	-	305	-
Stage 2	-	-	-	-	1051	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1246	-	-	-	140	862
Stage 1	-	-	-	-	721	-
Stage 2	-	-	-	-	298	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1246	-	-	-	94	862
Mov Cap-2 Maneuver	-	-	-	-	94	-
Stage 1	-	-	-	-	482	-
Stage 2	-	-	-	-	298	-

Approach	EB	WB	SB
HCM Control Delay, s	4.5	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1246	-	-	-	862
HCM Lane V/C Ratio	0.332	-	-	-	0.015
HCM Control Delay (s)	9.3	-	-	-	9.2
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	1.5	-	-	-	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	527	25	298	503	24	47	27	63	84	58	47
Future Volume (veh/h)	46	527	25	298	503	24	47	27	63	84	58	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	55	635	28	359	606	27	45	50	17	101	70	30
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	139	930	41	425	1486	66	123	129	108	175	132	57
Arrive On Green	0.08	0.27	0.27	0.24	0.43	0.43	0.07	0.07	0.07	0.10	0.10	0.10
Sat Flow, veh/h	1781	3466	153	1781	3464	154	1781	1870	1567	1710	1289	556
Grp Volume(v), veh/h	55	325	338	359	311	322	45	50	17	105	0	96
Grp Sat Flow(s),veh/h/ln	1781	1777	1842	1781	1777	1841	1781	1870	1567	1785	0	1770
Q Serve(g_s), s	1.5	8.4	8.4	9.9	6.2	6.2	1.2	1.3	0.5	2.9	0.0	2.6
Cycle Q Clear(g_c), s	1.5	8.4	8.4	9.9	6.2	6.2	1.2	1.3	0.5	2.9	0.0	2.6
Prop In Lane	1.00		0.08	1.00		0.08	1.00		1.00	0.96		0.31
Lane Grp Cap(c), veh/h	139	477	494	425	762	790	123	129	108	183	0	181
V/C Ratio(X)	0.40	0.68	0.68	0.84	0.41	0.41	0.36	0.39	0.16	0.58	0.00	0.53
Avail Cap(c_a), veh/h	694	1402	1453	694	1385	1435	868	911	763	869	0	862
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.5	16.8	16.8	18.6	10.1	10.1	22.8	22.8	22.5	22.0	0.0	21.9
Incr Delay (d2), s/veh	0.7	0.6	0.6	2.5	0.1	0.1	0.7	0.7	0.2	1.1	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	3.1	3.2	3.9	2.0	2.1	0.5	0.6	0.2	1.2	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.2	17.5	17.5	21.1	10.3	10.3	23.5	23.5	22.7	23.0	0.0	22.7
LnGrp LOS	C	B	B	C	B	B	C	C	C	C	A	C
Approach Vol, veh/h		718			992			112			201	
Approach Delay, s/veh		17.9			14.2			23.4			22.9	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	16.2	18.3		9.3	8.0	26.5		7.6
Change Period (Y+Rc), s	4.0	* 4.5		4.0	4.0	4.5		4.0
Max Green Setting (Gmax), s	20.0	* 41		25.0	20.0	40.0		25.0
Max Q Clear Time (g_c+I1), s	11.9	10.4		4.9	3.5	8.2		3.3
Green Ext Time (p_c), s	0.4	2.8		0.7	0.0	2.6		0.2

Intersection Summary			
HCM 6th Ctrl Delay			16.9
HCM 6th LOS			B

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	149	12	913	7	16	7	738	278	14	4	375	183
Future Volume (veh/h)	149	12	913	7	16	7	738	278	14	4	375	183
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.92	1.00		0.95	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	175	0	462	8	18	1	820	309	14	4	417	86
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	234	0	775	69	167	10	636	2453	111	7	1846	813
Arrive On Green	0.07	0.00	0.07	0.07	0.07	0.07	0.06	0.23	0.23	0.00	0.52	0.52
Sat Flow, veh/h	3563	0	2905	1030	2483	143	3456	3462	156	1781	3554	1565
Grp Volume(v), veh/h	175	0	462	14	0	13	820	158	165	4	417	86
Grp Sat Flow(s),veh/h/ln	1781	0	1452	1819	0	1836	1728	1777	1841	1781	1777	1565
Q Serve(g_s), s	5.8	0.0	0.0	0.9	0.0	0.8	22.1	8.4	8.5	0.3	7.7	3.4
Cycle Q Clear(g_c), s	5.8	0.0	0.0	0.9	0.0	0.8	22.1	8.4	8.5	0.3	7.7	3.4
Prop In Lane	1.00		1.00	0.57		0.08	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	234	0	775	122	0	123	636	1259	1305	7	1846	813
V/C Ratio(X)	0.75	0.00	0.60	0.12	0.00	0.10	1.29	0.13	0.13	0.54	0.23	0.11
Avail Cap(c_a), veh/h	288	0	819	474	0	479	636	1259	1305	119	1846	813
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.92	0.92	0.92	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.1	0.0	39.5	52.6	0.0	52.6	56.4	16.6	16.6	59.6	15.7	14.7
Incr Delay (d2), s/veh	6.0	0.0	0.7	0.2	0.0	0.1	140.5	0.2	0.2	20.7	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	6.0	0.4	0.0	0.4	22.7	3.8	3.9	0.2	3.2	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.1	0.0	40.2	52.8	0.0	52.7	196.9	16.8	16.8	80.3	16.0	14.9
LnGrp LOS	E	A	D	D	A	D	F	B	B	F	B	B
Approach Vol, veh/h		637			27			1143			507	
Approach Delay, s/veh		45.9			52.7			146.0			16.3	
Approach LOS		D			D			F			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.5	90.1		12.8	27.2	67.4		12.6				
Change Period (Y+Rc), s	4.0	5.1		* 4.7	5.1	* 5.1		4.7				
Max Green Setting (Gmax), s	8.0	52.5		* 31	22.1	* 38		9.7				
Max Q Clear Time (g_c+I1), s	2.3	10.5		2.9	24.1	9.7		7.8				
Green Ext Time (p_c), s	0.0	0.3		0.0	0.0	0.6		0.1				

Intersection Summary		
HCM 6th Ctrl Delay		89.0
HCM 6th LOS		F

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	174	0	940	0	0	0	0	856	547	543	752	0
Future Volume (veh/h)	174	0	940	0	0	0	0	856	547	543	752	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	178	0	364				0	983	315	554	767	0
Peak Hour Factor	0.98	0.98	0.98				0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	210	0	425				0	3346	945	594	2848	0
Arrive On Green	0.12	0.00	0.12				0.00	1.00	1.00	0.34	1.00	0.00
Sat Flow, veh/h	1781	0	3614				0	5611	1585	3456	3647	0
Grp Volume(v), veh/h	178	0	364				0	983	315	554	767	0
Grp Sat Flow(s),veh/h/ln	1781	0	1205				0	1870	1585	1728	1777	0
Q Serve(g_s), s	11.8	0.0	11.9				0.0	0.0	0.0	18.6	0.0	0.0
Cycle Q Clear(g_c), s	11.8	0.0	11.9				0.0	0.0	0.0	18.6	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	210	0	425				0	3346	945	594	2848	0
V/C Ratio(X)	0.85	0.00	0.86				0.00	0.29	0.33	0.93	0.27	0.00
Avail Cap(c_a), veh/h	313	0	635				0	3346	945	654	2848	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	2.00	2.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.87	0.87	0.00
Uniform Delay (d), s/veh	51.9	0.0	51.9				0.0	0.0	0.0	38.7	0.0	0.0
Incr Delay (d2), s/veh	8.8	0.0	5.0				0.0	0.2	0.9	16.9	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	0.0	3.8				0.0	0.1	0.2	7.9	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.7	0.0	57.0				0.0	0.2	0.9	55.6	0.2	0.0
LnGrp LOS	E	A	E				A	A	A	E	A	A
Approach Vol, veh/h		542						1298			1321	
Approach Delay, s/veh		58.2						0.4			23.4	
Approach LOS		E						A			C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	24.6	76.7		18.7		101.3
Change Period (Y+Rc), s	4.0	5.1		4.6		5.1
Max Green Setting (Gmax), s	22.7	62.5		21.1		69.2
Max Q Clear Time (g_c+I1), s	20.6	2.0		13.9		2.0
Green Ext Time (p_c), s	0.0	1.5		0.3		2.2

Intersection Summary	
HCM 6th Ctrl Delay	19.9
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	64	579	531	80	411	28
Future Volume (veh/h)	64	579	531	80	411	28
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	68	566	629	0	437	26
Peak Hour Factor	0.94	0.94	0.94	0.90	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	514	803	778	408	1226	73
Arrive On Green	0.29	0.29	0.22	0.00	0.36	0.36
Sat Flow, veh/h	1781	1585	3563	1870	3502	202
Grp Volume(v), veh/h	68	566	629	0	227	236
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1870	1777	1834
Q Serve(g_s), s	2.4	23.6	14.4	0.0	8.1	8.1
Cycle Q Clear(g_c), s	2.4	23.6	14.4	0.0	8.1	8.1
Prop In Lane	1.00	1.00	1.00			0.11
Lane Grp Cap(c), veh/h	514	803	778	408	639	660
V/C Ratio(X)	0.13	0.70	0.81	0.00	0.36	0.36
Avail Cap(c_a), veh/h	514	803	1027	539	639	660
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	22.6	16.3	31.9	0.0	20.2	20.2
Incr Delay (d2), s/veh	0.2	3.1	4.3	0.0	1.5	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	12.2	6.4	0.0	3.3	3.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	22.8	19.4	36.2	0.0	21.8	21.7
LnGrp LOS	C	B	D	A	C	C
Approach Vol, veh/h	634			629	463	
Approach Delay, s/veh	19.7			36.2	21.8	
Approach LOS	B			D	C	

Timer - Assigned Phs	2	6	8
Phs Duration (G+Y+Rc), s	36.0	22.0	28.0
Change Period (Y+Rc), s	5.1	3.2	3.2
Max Green Setting (Gmax), s	24.9	24.8	24.8
Max Q Clear Time (g_c+I1), s	10.1	16.4	25.6
Green Ext Time (p_c), s	3.0	2.4	0.0

Intersection Summary	
HCM 6th Ctrl Delay	26.3
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Intersection						
Int Delay, s/veh	1.7					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	47	428	480	1	0	132
Future Vol, veh/h	47	428	480	1	0	132
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	125	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	51	465	522	1	0	143

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	523	0	-	0	858	262
Stage 1	-	-	-	-	523	-
Stage 2	-	-	-	-	335	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1040	-	-	-	296	737
Stage 1	-	-	-	-	559	-
Stage 2	-	-	-	-	697	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1040	-	-	-	281	737
Mov Cap-2 Maneuver	-	-	-	-	281	-
Stage 1	-	-	-	-	532	-
Stage 2	-	-	-	-	697	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1040	-	-	-	737
HCM Lane V/C Ratio	0.049	-	-	-	0.195
HCM Control Delay (s)	8.6	-	-	-	11.1
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.7

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	381	460	624	12	3	9
Future Vol, veh/h	381	460	624	12	3	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	125	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	414	500	678	13	3	10

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	691	0	-	0	1763	346
Stage 1	-	-	-	-	685	-
Stage 2	-	-	-	-	1078	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	900	-	-	-	75	650
Stage 1	-	-	-	-	462	-
Stage 2	-	-	-	-	288	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	900	-	-	-	41	650
Mov Cap-2 Maneuver	-	-	-	-	41	-
Stage 1	-	-	-	-	249	-
Stage 2	-	-	-	-	288	-

Approach	EB	WB	SB
HCM Control Delay, s	5.6	0	33.8
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	900	-	-	-	138
HCM Lane V/C Ratio	0.46	-	-	-	0.095
HCM Control Delay (s)	12.4	-	-	-	33.8
HCM Lane LOS	B	-	-	-	D
HCM 95th %tile Q(veh)	2.5	-	-	-	0.3