E. TRANSPORTATION AND CIRCULATION

Section 4.E, Transportation and Circulation, addresses the impacts that transportation and land use changes related to the Pier 70 Mixed-Use District Project would have on traffic, transit, pedestrian and bicycle travel and circulation, loading, and emergency access. The section describes existing transportation conditions on the project site and in the transportation study area, and presents the baseline transportation conditions against which project impacts are measured. Project-specific impacts are presented for both the maximum residential scenario and the maximum commercial scenario, and mitigation measures to reduce identified impacts and/or improvement measures to make improvements to portions of the Proposed Project where there would not be significant impacts are identified. The Proposed Project's contribution to significant cumulative impacts is identified for each transportation mode. While parking is no longer considered in determining if the Proposed Project has the potential to result in significant environmental impacts, the section presents the Proposed Project's parking demand in relation to the proposed parking supply for informational purposes only. The section summarizes the information provided in the *Pier 70 Mixed-Use District Project Transportation Impact Study* (TIS).[1] The analyses use methods consistent with the 2002 *San Francisco Transportation Impact Analysis Guidelines for Environmental Review* (hereinafter referred to as the *SF Guidelines*).

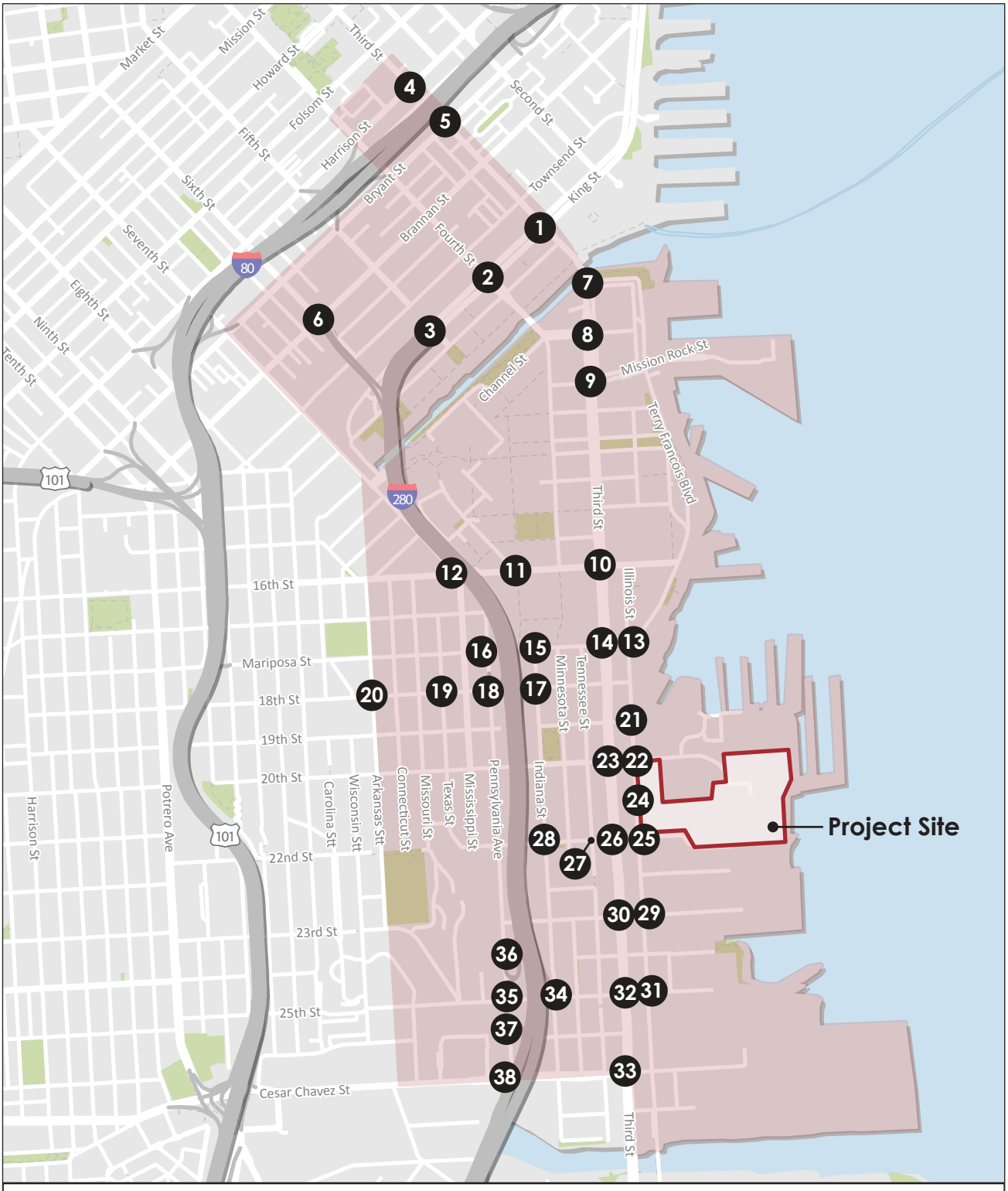
ENVIRONMENTAL SETTING

TRANSPORTATION STUDY AREA

The transportation study area is bounded roughly by San Francisco Bay, Third Street (north of Mariposa Street), Harrison Street, Fourth Street, Bryant Street, Seventh Street, Arkansas Street, Cesar Chavez Street, and Illinois Street, as shown on Figure 4.E.1: Transportation Study Area and Study Intersections. The transportation study area includes all aspects of the transportation network that may be measurably affected by trips generated by the Proposed Project. The study area is defined by travel corridors and by facilities such as transit routes and stations, bicycle routes and amenities, pedestrian sidewalks and crossings, and the overall vehicular roadway network that residents and visitors would use in traveling to and from the project site.

A total of 37 existing intersections (38 with the Proposed Project) within the transportation study area were identified as key locations that are likely to be affected by the Proposed Project, and were selected for detailed study, particularly for pedestrian conditions. These study intersections include all major intersections along Third Street, Illinois Street, 25th Street, Mariposa Street, and 16th Street, as well as numerous local intersections along access routes to and from U.S. Highway

[1] Fehr & Peers, *Pier 70 Mixed-Use District Project Transportation Impact Study*, December 2016.



Source: Fehr and Peers (2016)

PIER 70 MIXED-USE DISTRICT PROJECT

FIGURE 4.E.1: TRANSPORTATION STUDY AREA AND STUDY INTERSECTIONS

101 (U.S. 101) and Interstate-280 (I-280) within the study area. Intersections farther away were not analyzed as part of the study, because project-generated travel remaining on local streets would be dispersed, and, consequently, the Proposed Project's effects would be relatively small.

The study intersections are identified by number on Figure 4.E.1; the intersections corresponding to numbers on Figure 4.E.1 are listed in Table 4.E.1: Study Intersections.

Table 4.E.1: Study Intersections

Intersection	Traffic Control
1. King Street / Third Street	Signal
2. King Street / Fourth Street	Signal
3. King Street / Fifth Street / I-280 ramps	Signal
4. Third Street / Harrison Street	Signal
5. Third Street / Bryant Street	Signal
6. Sixth Street / Brannan Street / I-280 ramps	Signal
7. Third Street / Terry A Francois Boulevard	Signal
8. Third Street / Channel Street	Signal
9. Third Street / Mission Rock Street	Signal
10. 16th Street / Third Street	Signal
11. 16th Street / Owens Street	Signal
12. 16th Street / Seventh Street / Mississippi Street	Signal
13. Mariposa Street / Terry A Francois Boulevard / Illinois Street	All Way Stop Control
14. Mariposa Street / Third Street	Signal
15. Mariposa Street / I-280 NB off-ramp	Signal
16. Mariposa Street / I-280 SB on-ramp	Secondary Street Stop Control
17. 18th Street / I-280 NB on-ramp	Secondary Street Stop Control
18. 18th Street / I-280 SB off-ramp	Secondary Street Stop Control
19. 18th Street / Texas Street	Secondary Street Stop Control
20. 18th Street / Arkansas Street	All Way Stop Control
21. 19th Street / Illinois Street	Secondary Street Stop Control
22. 20th Street / Illinois Street	All Way Stop Control
23. 20th Street / Third Street	Signal
24. 21st Street / Illinois Street (future)	-
25. 22nd Street / Illinois Street	All Way Stop Control

Table 4.E.1 Continued

Intersection	Traffic Control
26. 22nd Street / Third Street	Signal
27. 22nd Street / Tennessee Street	Secondary Street Stop Control
28. 22nd Street / Indiana Street	All Way Stop Control
29. 23rd Street / Illinois Street	Secondary Street Stop Control
30. 23rd Street / Third Street	Signal
31. 25th Street / Illinois Street	Signal
32. 25th Street / Third Street	Signal
33. Cesar Chavez Street / Third Street	Signal
34. 25th Street / Indiana Street / I-280 NB on-ramp	All Way Stop Control
35. 25th Street / Pennsylvania Street	All Way Stop Control
36. Pennsylvania Street / I-280 SB off-ramp	All Way Stop Control
37. Pennsylvania Street / I-280 SB on-ramp	Secondary Street Stop Control
38. Cesar Chavez Street / Pennsylvania Street / I-280 NB Off	Signal

Source: Fehr & Peers, 2015

EXISTING CONDITIONS

Roadway Facilities

The study area is served by three freeways providing regional access and multiple local streets providing access to the project site. A section describing local roadways is followed by a description of the freeways serving the study area.

Local Roadways

Local access to the project site and the transportation study area is provided by an urban street grid network. Third Street is the main north-south street in the study area and is one of the major arterials in this eastern part of San Francisco. Mariposa and 16th streets are main east-west streets in the study area; Cesar Chavez Street is a main east-west arterial at the south end of the study area. Access to the project site is from 20th Street/Illinois Street and 22nd Street/Illinois Street, one block east of Third Street. Most of the local roadways in the study area are described in Table 4.E.2: Local Roadway Network. The table identifies the following for each of the key streets in the study area: street name; direction (east-west or north-south); typical number of lanes; the streets' designations in the *San Francisco General Plan*, if any; transit routes that use a street; and any bicycle facilities.

Table 4.E.2: Local Roadway Network

Street Name	Direction	Lanes (typical)	General Plan Designation[1]	Transit Routes[1]	Bicycle Facilities / Routes (typical) [1,2]
Third Street	N-S	4	Congestion Management Network Major Arterial Metropolitan Transportation System Street Primary Transit Important Preferential Street Citywide Pedestrian Network Street Neighborhood Commercial Pedestrian Street Near-Term Bicycle Improvement Projects & Minor Improvements to Bicycle Route Network	8X, 8AX, 8BX, 9, 30, 45, 55, 81X, T	Class III[3]
Fourth Street	N-S	2/4[4]	Congestion Management Network Major Arterial Metropolitan Transportation System Street Primary Transit Important Preferential Street Citywide Pedestrian Network Street Neighborhood Commercial Pedestrian Street & Minor Improvements to Bicycle Route Network	47	Class II
Fifth Street	N-S	4	Congestion Management Network Major Arterial Metropolitan Transportation System Street Near-Term Bicycle Improvement Projects	8X, 8AX, 8BX, 27, 30, 45, 47	Class III, Route 19
Sixth Street	N-S	4-6[5]	Congestion Management Network Major Arterial Metropolitan Transportation System Street Neighborhood Commercial Pedestrian Street	14X, 27	-
Seventh Street	N-S	2-4[6]	Congestion Management Network Major Arterial Metropolitan Transportation System Street	19	Class II, Route 23
16th Street	E-W	4	Primary Transit Oriented Preferential Street Neighborhood Commercial Pedestrian Street Near-Term Bicycle Improvement Projects	22, 33, 55	Class II, Route 40
18th Street	E-W	2[7]	Neighborhood Commercial Pedestrian Street (section)	22	-
19th Street	E-W	2	-	-	-

Table 4.E.2 Continued

Street Name	Direction	Lanes (typical)	General Plan Designation[1]	Transit Routes[1]	Bicycle Facilities / Routes (typical) [1,2]
20th Street	E-W	2	Neighborhood Commercial Pedestrian Street (section)	22, 48	-
21st Street (future only)	E-W	2	-	-	-
22nd Street	E-W	2	-	48	-
23rd Street	E-W	2	-	10, 19, 48	-
25th Street	E-W	2	-	10, 48	-
Arkansas Street	N-S	2	-	10	-
Brannan Street	E-W	2/4[8]	-	82X, 83X	-
Bryant Street	E-W	2-5[9]	Primary Transit Important/Secondary Transit Preferential Street Neighborhood Commercial Pedestrian Street	8, 8AX, 8BX, 27, 47	-
Cesar Chavez Street	E-W	4	Congestion Management Network Major Arterial Metropolitan Transportation System Street Near-Term Bicycle Improvement Projects	-	Class II, Route 60
Channel Street	E-W	2/4[10]	-	-	-
Harrison Street	E-W	4-5	Congestion Management Network Major Arterial Primary Transit Important/Secondary Transit Preferential Street Neighborhood Commercial Pedestrian Street	12, 27, 47	-
Illinois Street	N-S	2	-	48	Class II, Route 5
Indiana Street	N-S	2	Minor Improvements to Bicycle Route Network	-	Class III, Route 7
King Street	E-W	4	Congestion Management Network Major Arterial Metropolitan Transportation System Street Primary Transit Important Preferential Street Neighborhood Pedestrian Network Connection Street	N, T	Class II/Class III, Route 5
Mariposa Street	E-W	2/4[11]	-	-	Class III, Route 7/23
Mission Rock Street	E-W	2[12]	-	-	-

Table 4.E.2 Continued

Street Name	Direction	Lanes (typical)	General Plan Designation[1]	Transit Routes[1]	Bicycle Facilities / Routes (typical) [1,2]
Mississippi Street	N-S	2	-	-	Class II [13]
Owens Street	N-S	4	-	-	-
Pennsylvania Street	N-S	2	-	48	-
Tennessee Street	N-S	2	-	22	-
Terry A Francois Boulevard	N-S	4	-	-	Class II, Route 5
Texas Street	N-S	2	-	-	-

Notes:

E-W = east-west. N-S = north-south.

[1] The descriptions associated with each street (General Plan Designation, Transit Routes, etc.) are those that apply to some portion of that street, although not necessarily the entire length of that street.

[2] Class I bikeways are bike paths with exclusive right-of-way for use by bicyclists. Class II bikeways are bike lanes striped within the paved areas of roadways and established for the preferential use of bicycles. Class III bikeways are signed bike routes that allow bicycles to share the travel lane with vehicles. See Section 2.7 for additional discussion.

[3] Except between China Basin Street and Cesar Chavez Street where there are no bicycle facilities.

[4] Two lanes from 16th Street to Channel Street; four lanes north of Channel Street, except six lanes from King Street to Townsend Street.

[5] Four lanes from Market Street to Howard Street; five lanes (three northbound, two southbound) from Howard Street to Folsom Street during peak periods only (four lanes during other times); six lanes during peak periods only from Folsom Street to Brannan Street (four lanes during other times).

[6] Two lanes from 16th Street to King Street; three lanes from King Street to Brannan Street; four lanes north of Brannan Street.

[7] Two lanes except between Minnesota Street and Pennsylvania Avenue where there are three lanes and an additional westbound right-turn lane onto the I-280 freeway.

[8] Two lanes from The Embarcadero to Colin P Kelly Jr Street; four lanes southwest of Colin P Kelly Jr Street.

[9] Five lanes from Seventh Street to Second Street; three lanes from Second Street to I-80 ramp; two lanes from I-80 ramp to Beale Street; three lanes from Beale Street to The Embarcadero.

[10] Four lanes from Third Street to Fourth Street; two lanes elsewhere.

[11] Four lanes from Terry A Francois Boulevard to Pennsylvania Avenue; two lanes elsewhere.

[12] Six lanes at intersection with Terry A Francois Boulevard.

[13] Class II bicycle facility from 16th Street to Mariposa Street; no bicycle facilities elsewhere.

Source: Fehr & Peers, 2015; *San Francisco General Plan*

Regional Roadways

Interstate 80 (I-80) provides the primary regional access to the project site from the East Bay. I-80 runs through the northern portion of the study area and connects San Francisco to the East Bay and other points east via the San Francisco–Oakland Bay Bridge. I-80 eastbound can be accessed via the on-ramp at Fifth Street / Bryant Street, and the project site can be accessed from westbound I-80 at the off-ramp at Fifth Street / Harrison Street. Within the study area, I-80 has six lanes (three in each direction).

I-280 provides regional access to the study area from the South Bay and Peninsula. I-280 and U.S. 101 have an interchange to the south of the study area, and I-280 terminates in the study area at the King and Fifth streets intersection. I-280 is generally a six-lane freeway. The project site can be accessed from either the Mariposa Street or the Cesar Chavez Street off-ramps in the northbound direction or the 18th Street or Pennsylvania / 25th Street off-ramps in the southbound direction. The nearest on-ramps are from 25th Street or 18th Street in the northbound direction and Mariposa Street and Pennsylvania / 25th Street in the southbound direction.

U.S. 101 provides access to the north and south of the study area. U.S. 101 is to the west of the study area and provides access to the Peninsula and South Bay. U.S. 101 connects with I-80 and the San Francisco–Oakland Bay Bridge to the northwest of the project site. U.S. 101 also connects San Francisco and the North Bay via the Golden Gate Bridge via surface streets on Van Ness Avenue or Franklin Street and Lombard Street. Van Ness Avenue and Lombard Street are part of the Citywide Pedestrian Network outlined in the Transportation Element of the *San Francisco General Plan*.

Special Events

Currently, the Pier 70 site hosts approximately 50 special events per year, which include evening happy hours, music concerts, fairs, and markets. Attendance levels can vary widely, but occasionally (up to approximately four times per year) the largest events can draw up to 40,000 people. These events typically occur outside of the traditional peak periods for analysis, but at times create localized congestion around the Pier 70 site.

For all events held at the Pier 70 site, the event sponsor must obtain special permits from the Port of San Francisco, and, if required, the City. As part of the permitting process, the event sponsor must include a plan for managing travel to and from the event safely and with minimal effect on the surrounding neighborhoods. These management strategies may include special event shuttles, promotion of transit services, and parking management, such as valet parking.

Background Vehicle Miles Traveled in San Francisco and Bay Area

Many factors affect travel behavior. These factors include density, diversity of land uses, design of the transportation network, access to regional destinations, distance to high-quality transit, development scale, demographics, and transportation demand management.[2] Typically, low-density development at great distance from other land uses, located in areas with poor access to non-private vehicular modes of travel, generates more automobile travel compared to development located in urban areas, where a higher density, mix of land uses, and travel options other than private vehicles are available.

Given the travel behavior factors described above, San Francisco (in the aggregate) has a lower average VMT ratio than the nine-county San Francisco Bay Area region (hereinafter, the region). In addition, for the same reasons, different areas of the city have different VMT ratios and some areas of the City have lower VMT ratios than other areas of the city.

These geographic based differences in VMT that are associated with different parts of the city and region are identified in transportation analysis zones (TAZs). TAZs are used by planners as part of transportation planning models for transportation analysis and other planning purposes. The TAZs vary in size from single city blocks in the downtown core, multiple blocks in outer neighborhoods, to even larger zones in historically industrial areas like the Hunters Point Shipyard.

The project site is primarily located in and comprises most of the area in TAZ 559 and is generally the industrial area east of Illinois Street, south of Terry A Francois Boulevard and 16th Street, and north of 24th Street. The location of the project site is close to major transit services and facilities, bicycle and pedestrian networks and facilities, and diversity and density of land uses. A project located in TAZ 559 would have substantially reduced vehicle trips and shorter vehicle distance, and thus, reduced VMT, when compared to other areas of the region.

This is demonstrated by comparing data on average VMT for residential, office, and retail uses in the region and the specific project site TAZ, TAZ 559. Thus, the following VMT rates are identified for each by category of use:

Regional VMT: For residential development, the regional average daily VMT per capita is 17.2.[3] For office and retail development, regional average daily work-related VMT per employee is 19.1 and 14.9, respectively.

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[2] California Smart-Growth Trip Generation Rates Study, Appendix A, University of California, Davis Institute of Transportation Studies, March 2013.

[3] Includes the VMT generated by the Proposed Project (www.sftransportationmap.org, accessed October 3, 2016).

TAZ 559 VMT: The average VMT estimates for each use category in TAZ 559 are projected to be substantially lower than the regional value. For residential development, the TAZ 559 average daily VMT per capita is 8.8. For office and retail development, the TAZ 559 average daily VMT per capita (measured in terms of employees) is 14.6 and 10.8, respectively. For retail uses, the Transportation Authority uses trip-based analysis, which counts VMT from individual trips to and from the project (as opposed to entire chain of trips). A trip-based approach, as opposed to a tour-based approach, is necessary for retail projects because a tour is likely to consist of trips stopping in multiple locations, and summarizing tour VMT to each location would over-estimate VMT.[4,5]

Table 4.E.3: Existing Daily Vehicle Miles Traveled per Capita includes a summary of the daily VMT per capita for the region and for the transportation analysis zone in which the project site is located, TAZ 559.

Table 4.E.3: Existing Daily Vehicle Miles Traveled per Capita

Land Use	Bay Area Regional Average	TAZ 559
Households (Residential)	17.2	8.8
Employment (Office)	19.1	14.6
Visitors (Retail)	14.9	10.8

Source: San Francisco Planning Department, sftransportationmap.org, Accessed October 3, 2016.

Transit Facilities

The project site is served by local transit provided by the San Francisco Municipal Railway (Muni), operated by the San Francisco Municipal Transportation Agency (SFMTA). Muni provides light rail service near the project site on Third Street and bus service on other nearby streets. Most regional transit services are generally not within walking distance of the project site but can be reached by bicycle or from various Muni lines. Regional transit provides service to the East Bay via the Bay Area Rapid Transit rail service (BART), Alameda-Contra Costa Transit buses (AC Transit), and ferries; the North Bay via Golden Gate Transit buses and ferries; and the

[4] To state another way: a tour-based assessment of VMT at a retail site would consider the VMT for all trips in the tour, for any tour with a stop at the retail site. If a single tour stops at two retail locations, for example, a coffee shop on the way to work and a restaurant on the way back home, then both retail locations would be allotted the total tour VMT. A trip-based approach allows analysts to apportion all retail-related VMT to retail sites without double-counting.

[5] San Francisco Planning Department, *Executive Summary: Resolution Modifying Transportation Impact Analysis*, Appendix F, Attachment A, March 3, 2016.

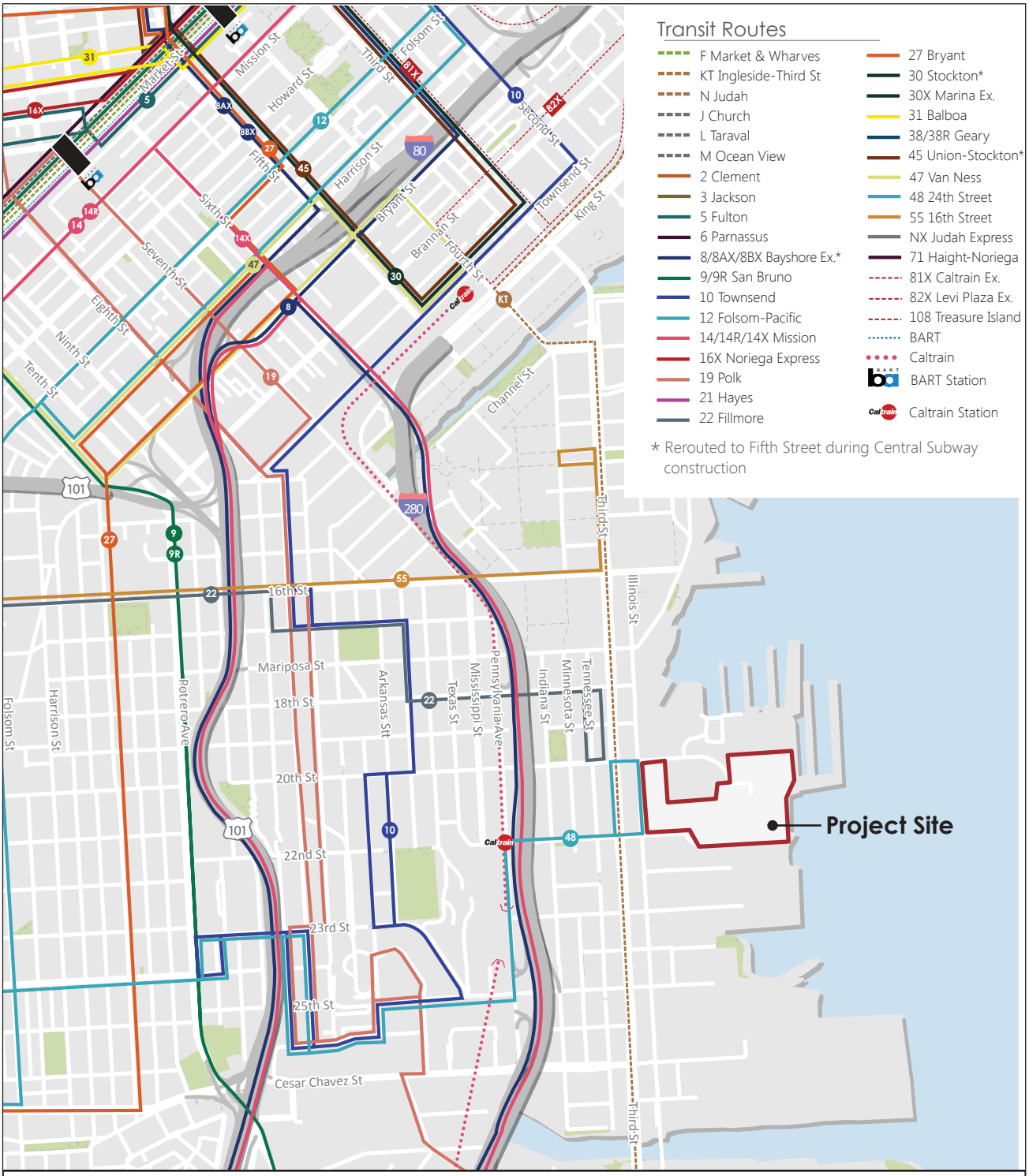
Peninsula and South Bay via Caltrain and BART rail service and San Mateo County Transit (SamTrans) buses. The project site is approximately 2.5 miles south of Market Street BART stations and the Ferry Building and approximately 2.25 miles south of the Temporary Transbay Terminal served by AC Transit. The 22nd Street Caltrain station located under the I-280 freeway structure between Indiana and Pennsylvania streets is within walking distance (approximately 0.25 mile west) of the project site. Figure 4.E.2: Existing Transit Network presents the local and regional transit routes in the transportation study area and in the Mission and South of Market (SOMA) neighborhoods.

Muni

Muni provides transit service within the City and County of San Francisco, including bus (both diesel and electric trolley), light rail (Muni Metro), cable car, and electric streetcar lines. Muni operates a number of bus and rail lines in the project vicinity. Table 4.E.4: Local Muni Operations presents the six Muni routes with stops located within approximately 1 mile of the project site and transportation study area as of March 2015. The closest Muni stops to the project site are on Third Street at 20th Street.

Muni transit operations in the transportation study area were evaluated using two methods: capacity utilization and screenlines. Capacity utilization relates the number of passengers per transit vehicle to the design capacity of the vehicle. A capacity utilization analysis was conducted for the routes providing direct access to the project site based on each route's peak capacity utilization at its maximum load point (MLP), obtained from SFMTA's automated passenger count (APC) database in September/October 2013. The MLP is the location where the route has its highest number of passengers relative to its capacity. In general, the MLP for Muni routes is not located in the transportation study area for the Proposed Project but is located closer to Downtown.

Capacity utilization during the a.m. and p.m. peak hours was determined at the MLP for each route serving the study area. The capacity per vehicle includes both seated and standing capacity, where standing capacity is between 30 and 80 percent of seated capacity (depending on the specific transit vehicle configuration). The capacity of a light rail vehicle is 119 passengers; the capacity of a historic streetcar is 70 passengers; and the capacity of a standard bus is 63 passengers.



Source: Fehr and Peers (2016)

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FIGURE 4.E.2: EXISTING TRANSIT NETWORK

Table 4.E.4: Local Muni Operations

Route	A.M. Peak Weekday Headways (7:00 a.m.-9:00 a.m.)[1]	P.M. Peak Weekday Headways (4:00 p.m.-6:00 p.m.)[1]	Hours of Operation	Neighborhoods Served by Route
KT Ingleside / Third Street Light Rail	9	9	4:00 a.m.-1:30 a.m.	Balboa Park, Market Street, Mission Bay, Visitacion Valley
10 Townsend	15	20	5:00 a.m.-12:30 a.m.	Potrero Hill, China Basin, Financial District, Pacific Heights
19 Polk	15	15	5:00 a.m.-1:30 a.m.	Hunter's Point, Mission, SOMA, Nob Hill
22 Fillmore	9	8	24 hours per day	Marina, Fillmore, Portrero Hill
48 Quintara / 24th Street	10	12	24 hours per day	SOMA, Mission, Sunset
55 16th Street[2]	15	15	6:00 a.m.-12:00 a.m.	Mission District, Mission Bay, Potrero Hill

Note:

[1] Headway is scheduled time between transit vehicles, presented in minutes.
[2] As discussed later in this section, the 55 16th Street is a relatively new, interim route designed to provide service along 16th Street until the 22 Fillmore is extended into Mission Bay. The Proposed Project's impact analysis is based on conditions after the 22 Fillmore extension is complete; therefore, no additional discussion of ridership data for the 55 16th Street is provided in this section.

Source: Muni, 2015; prepared by Fehr & Peers, 2015

Table 4.E.5: Muni Peak Hour Load and Capacity Utilization by Route presents the a.m. and p.m. peak ridership and capacities at MLPs for transit routes serving the study area for both inbound (toward Downtown) and outbound (away from Downtown) directions. (For purposes of this discussion, inbound and outbound refer to the standard SFMTA conventions, and in some cases because of the way routes are arranged, outbound may be toward Downtown relative to the Proposed Project.) For the individual routes evaluated, the MLP used is the maximum load between the project site and Market Street, since that is where the majority of project-related trips would be destined, and not necessarily inclusive of the MLP of the entire route. The 10 Townsend Inbound records passenger loads that exceed 85 percent capacity utilization, which is SFMTA's standard maximum acceptable utilization, in the a.m. and p.m. peak hour. Other routes operate within SFMTA's capacity utilization threshold (between the project site and Market Street). Immediately adjacent to the study area, capacity utilization is generally lower than the utilization at the MLP.

Table 4.E.5: Muni Peak Hour Load and Capacity Utilization by Route

Route	AM				PM			
	Maximum Load Point	Passenger Load[1]	Peak Hour Capacity[2]	Capacity Utilization	Maximum Load Point	Passenger Load[1]	Peak Hour Capacity[2]	Capacity Utilization
KT Ingleside/Third (IB)[3]	Embarcadero / Brannan Street	381	793	48%	Embarcadero / Folsom Street	314	793	40%
KT Ingleside/Third (OB)	Embarcadero / Folsom Street	310	793	39%	Embarcadero / Folsom Street	550	793	69%
10 Townsend (IB)	Second Street / Townsend Street	244	270	**90%**	Pacific Street / Stockton Street	168	189	**88%**
10 Townsend (OB)	Pacific Avenue / Mason Street	208	252	82%	Second Street / Townsend Street	153	189	80%
19 Polk (IB)	Larkin Street / O'Farrell Street	188	252	75%	Seventh Street / Howard Street	180	252	71%
19 Polk (OB)	Eighth Street / Howard Street	160	252	63%	Eighth Street / Mission Street	168	252	66%
22 Fillmore (IB)	16th Street / Guerrero Street	293	420	70%	16th Street / Folsom Street	293	473	61%
22 Fillmore (OB)	16th Street / Mission Street	267	420	63%	Fillmore Street / Grove Street	278	473	58%
48 Quintara/24th Street (IB)	24th Street / Guerrero Street	221	302	73%	24th Street / Mission Street	180	315	57%
48 Quintara/24th Street (OB)	24th Street / Folsom Street	245	315	77%	24th Street / Folsom Street	205	315	65%

Notes:
IB = inbound. OB = outbound.
Bold indicates capacity utilization of 85 percent or greater. Outbound and inbound capacities for the same route may be different due to different headways or vehicle type.
[1] Peak hour ridership.
[2] Total peak period capacity in passengers per hour.
[3] Ridership for the KT Ingleside/Third reflects MLP between project site and Market Street. Actual MLP for the entire route may occur past Market Street; however, most project-related trips on this route would be traveling to destinations along Market Street.

Sources: Fehr & Peers, 2016; San Francisco Planning Department, "Transit Data for Transportation Impact Studies," May 2015 and October 2016

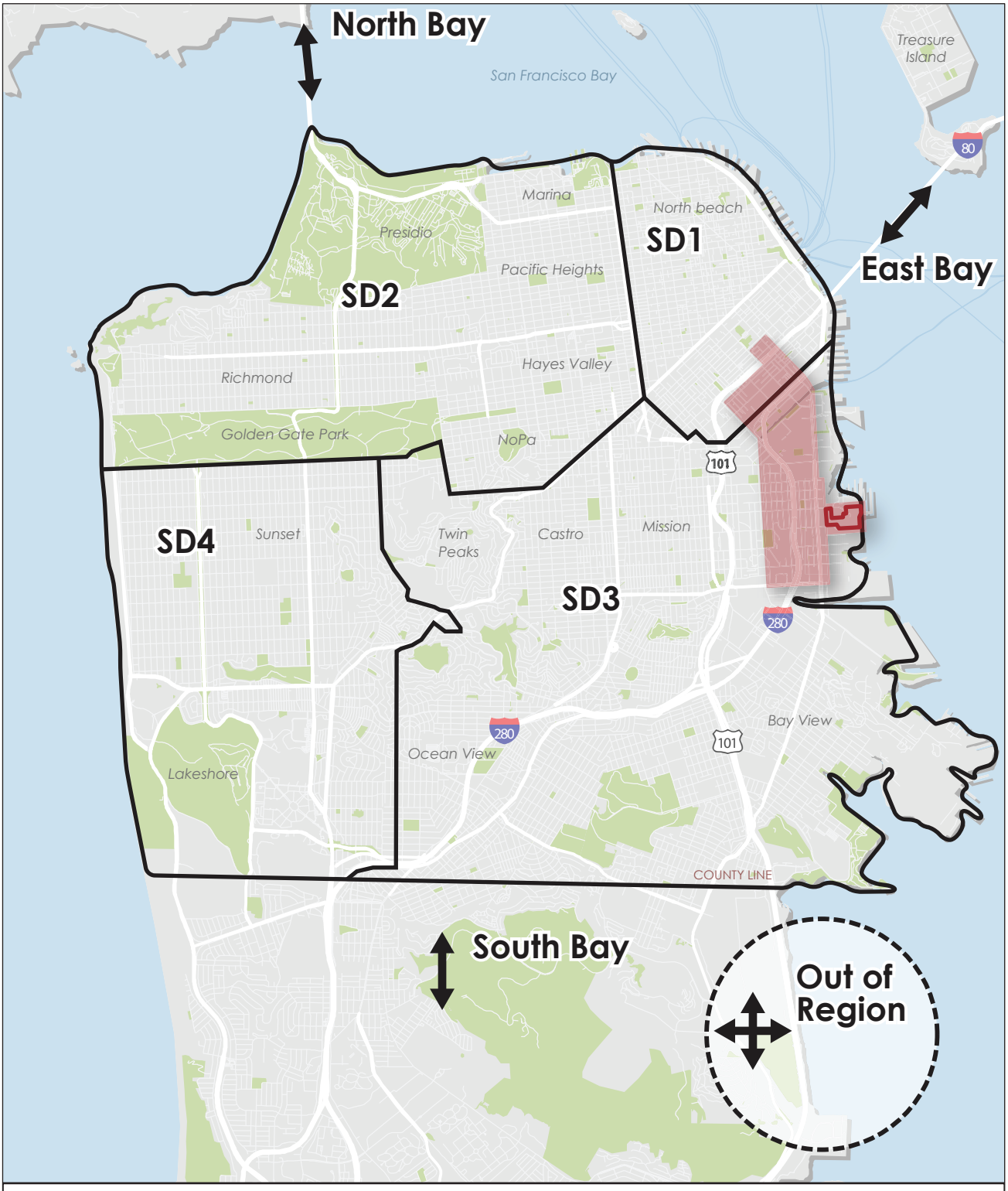
The assessment of existing transit conditions in San Francisco is also performed through the analysis of screenlines. Screenlines are hypothetical lines that would be crossed by persons traveling between Downtown San Francisco and its vicinity (Superdistrict 1) to or from other parts of San Francisco and the region (Superdistricts 2, 3, and 4) (see Figure 4.E.3: San Francisco Superdistricts). The project site is located in Superdistrict 3. Four screenlines—northeast, northwest, southwest, and southeast—have been established in Downtown San Francisco to facilitate the analysis of potential impacts of projects on Muni service. Subcorridors have been established within each screenline. The bus routes and light rail lines used in this screenline analysis are considered the major commute routes from the Downtown area. Other bus routes, such as those with greater than 10-minute headways, are not included due to their generally lower ridership. Transit serving the project site crosses all four Downtown screenlines. Table 4.E.6: Muni Downtown Screenline Groupings shows the groups of Muni routes in each of the Downtown screenlines. In addition to analyzing the subcorridor groups of Muni routes, as noted above, the 22 Fillmore and 48 Quintara / 24th Street bus routes and the KT Ingleside/Third Street light rail line are also presented individually alongside the Downtown screenline information.

Table 4.E.7: Muni Downtown Screenline and Project-Specific Lines – Existing Conditions presents the existing ridership and capacity utilization at the MLP for the routes crossing the Downtown screenlines during the weekday a.m. and p.m. peak hours. The capacity utilization calculation uses a.m. data for the inbound direction and p.m. data for the outbound direction to align with the peak directions of travel and patronage loads for the Muni system to or from the Downtown area during those periods.

As shown in Table 4.E.7, all screenlines currently operate below Muni's 85 percent capacity utilization standard except the southwest screenline in the a.m. peak period (as a result of 102 percent utilization on the subway lines). The Fulton/Hayes subcorridor within the northwest screenline operates above 85 percent capacity utilization in the p.m. peak hour, at 90 percent utilization, but the overall screenline operates within 85 percent capacity utilization and the conditions are considered acceptable. Similarly, the Third Street subcorridor within the southeast screenline operates above 85 percent capacity utilization in the p.m. peak hour, at 99 percent utilization, but the overall screenline operates within 85 percent capacity utilization and conditions are also considered acceptable.

Regional Transit

The area around the project site is served by regional transit systems, which can be reached by bicycle, walking, or local Muni routes. Service is provided by Caltrain, BART, AC Transit, SamTrans, and Golden Gate Transit. Each transit system is briefly described, and information on capacity utilization at regional screenlines is provided.



Source: Fehr and Peers (2015)

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FIGURE 4.E.3: SAN FRANCISCO SUPERDISTRICTS

Table 4.E.6: Muni Downtown Screenline Groupings

Screenline and Subcorridor	Muni Routes Included in Group
Northeast	
Kearny/Stockton	8 Bayshore 30 Stockton 30X Marina Express 41 Union 45 Union-Stockton
Other lines	E Embarcadero F Market & Wharves 10 Townsend 12 Folsom Pacific
Northwest	
Geary	38 Geary 38R Geary Rapid 38AX Geary ‘A’ Express 38BX Geary ‘B’ Express
California	1 California 1AX California ‘A’ Express 1BX California ‘B’ Express
Sutter/Clement	2 Clement
Fulton/Hayes	5 Fulton 5R Fulton Rapid 21 Hayes
Balboa	31 Balboa 31AX Balboa ‘A’ Express 31BX Balboa ‘B’ Express
Southeast	
Third Street	T Third Street
Mission	14 Mission 14R Mission Rapid 14X Mission Express 49 Van Ness-Mission
San Bruno/Bayshore	8 Bayshore 8AX Bayshore ‘A’ Express 8BX Bayshore ‘B’ Express 9 San Bruno 9R San Bruno Rapid
Other lines	J Church 10 Townsend 19 Polk 27 Bryant

Table 4.E.6 Continued

Screenline and Subcorridor	Muni Routes Included in Group
Southwest	
Subway lines	K Ingleside L Taraval M Ocean View N Judah
Haight/Noriega	6 Haight/Parnassus 7 Haight-Noriega 7R Haight-Noriega Rapid 7X Noriega Express NX Judah Express
Other lines	F Market & Wharves

Sources: Fehr & Peers, 2016; San Francisco Planning Department, "Transit Data for Transportation Impact Studies," May 2015

Table 4.E.7: Muni Downtown Screenlines and Project-Specific Lines – Existing Conditions

Screenline	A.M. Peak Hour (Inbound)			P.M. Peak Hour (Outbound)		
	Ridership	Capacity	Utilization	Ridership	Capacity	Utilization
Northeast						
Kearny/Stockton	2,211	3,050	73%	2,245	3,327	68%
Other lines	538	1,141	47%	683	1,078	63%
Screenline Total	*2,749*	*4,191*	*66%*	*2,928*	*4,405*	*67%*
Northwest						
Geary	1,821	2,490	73%	1,964	2,623	75%
California	1,610	2,010	80%	1,322	1,752	75%
Sutter/Clement	480	630	76%	425	630	68%
Fulton/Hayes	1,277	1,680	76%	1,184	1,323	**90%**
Balboa	758	1,019	74%	625	974	64%
Screenline Total	*5,946*	*7,828*	*76%*	*5,519*	*7,302*	*76%*
Southeast						
Third Street	350	793	44%	782	793	**99%**
Mission	1,643	2,509	66%	1,407	2,601	54%
San Bruno/Bayshore	1,689	2,134	79%	1,536	2,134	72%
Other lines	1,466	1,756	84%	1,084	1,675	65%
Screenline Total	*5,147*	*7,193*	*72%*	*4,810*	*7,203*	*67%*

Table 4.E.7 Continued

Screenline	A.M. Peak Hour (Inbound)			P.M. Peak Hour (Outbound)		
	Ridership	Capacity	Utilization	Ridership	Capacity	Utilization
Southwest						
Subway lines	6,330	6,205	**102%**	4,904	6,164	80%
Haight/Noriega	1,121	1,554	72%	977	1,554	63%
Other lines	465	700	67%	555	700	79%
Screenline Total	*7,916*	*8,459*	***94%***	*6,435*	*8,418*	*77%*
Muni Screenlines Total	*21,758*	*27,671*	*79%*	*19,693*	*27,328*	*72%*
Individual Muni Routes[1]						
22 Fillmore (IB)	293	420	70%	293	473	62%
22 Fillmore (OB)	267	420	64%	278	473	59%
48 Quintara/24th Street (IB)	221	302	73%	180	315	57%
48 Quintara/24th Street (OB)	245	315	78%	205	315	65%
KT Ingleside/Third (IB)	381	793	48%	314	793	40%
KT Ingleside/Third (OB)	310	793	39%	550	793	69%

Note:

Bold indicates capacity utilization of 85 percent or greater.

[1] Reflects MLP between project site and Market Street

Source: San Francisco Planning Department, "Transit Data for Transportation Impact Studies," May 2015. See Appendix D in the Transportation Impact Study for Transit Line Capacity Calculations.

CALTRAIN

Caltrain provides passenger rail service on the Peninsula between San Francisco and Downtown San Jose with several stops in San Mateo County and Santa Clara County. Some service is also available south of San Jose. Caltrain operates either local or express trains between 4:30 a.m. and midnight inbound (northbound) and 5:00 a.m. to midnight outbound (southbound). Caltrain service headways for Limited-Stop and Express ("Baby Bullet") trains during the a.m. and p.m. peak periods are 10 minutes to 40 minutes, depending on the type of train. The peak direction of service is southbound during the a.m. peak period (7:00 a.m. to 9:00 a.m.) and northbound during the p.m. peak period (4:00 p.m. to 6:00 p.m.). Local service is not provided during peak periods.

Caltrain service terminates at the San Francisco Station at King and Fourth streets. In the transportation study area, the Caltrain station on 22nd Street between Indiana Street and Pennsylvania Avenue is within walking distance of the project site. Both stations can be accessed directly by Muni transit and are served by local, limited, and express Baby Bullet trains.

BART

BART provides regional commuter rail service between San Francisco and the East Bay (Pittsburg/Bay Point, Richmond, Dublin/Pleasanton and Fremont), as well as between San Francisco and San Mateo County (Daly City, SFO Airport, and Millbrae). Weekday hours of operation are between 4 a.m. and midnight. During the weekday p.m. peak period, headways are 5 to 15 minutes along each line. Within San Francisco, BART operates underground along Market Street to Civic Center Station where it turns south through the Mission District towards Daly City, running aboveground beginning at the Balboa Park Station. The BART stations nearest to the Proposed Project study area are 16th Street Mission Station, 24th Street Mission Station, Embarcadero Station at Market Street / Main Street, Montgomery Station at Market Street / Second Street, and Powell Station at Market Street / Fifth Street.

AC TRANSIT

AC Transit operates bus service in western Alameda and Contra Costa counties and has routes to San Francisco and San Mateo County. AC Transit operates 33 "Transbay" bus routes between the East Bay and the Temporary Transbay Terminal, temporarily located at Howard and Beale streets in the SOMA area. The Temporary Transbay Terminal lies just outside of the transportation study area and is easily accessible via Muni and regional transit lines. The majority of Transbay service is provided only during commute periods in the peak direction of travel, with headways between buses of 15 to 20 minutes. The peak direction of service is into San Francisco during the a.m. peak period and out of San Francisco during the p.m. peak period. All-day service is provided on a few lines, with headways of approximately 30 minutes.

SAMTRANS

SamTrans operates bus service in San Mateo County. A few SamTrans routes also serve the Temporary Transbay Terminal in Downtown San Francisco, including Routes 292, 397, and KX. Route 292 makes San Francisco stops along Potrero Avenue and Mission Street throughout the day. Headways during the a.m. peak hours are between 15 and 30 minutes, and p.m. peak hour headways are 15 minutes. Route 397 runs along Mission Street in San Francisco and serves the Temporary Transbay Terminal. It is a late-night service route with headways of 1 hour. Route KX operates only during the peak travel periods with 60-minute headways, and travels between the Temporary Transbay Terminal and Redwood City.

GOLDEN GATE TRANSIT

The Golden Gate Bridge, Highway, and Transportation District operates Golden Gate Transit, which provides bus and ferry service between the North Bay (Marin and Sonoma counties) and San Francisco. Golden Gate Transit operates 22 commuter bus routes, nine basic bus routes, and 16 ferry feeder bus routes for ferries to San Francisco. Bus routes operate at headways of 15 to

90 minutes depending on time and day of week and bus type. Near the transportation study area, Golden Gate Transit operates commuter and basic routes on Mission Street, Howard Street, Folsom Street, Sixth Street, and Eighth Street. Golden Gate Transit also operates ferry service between the North Bay and San Francisco, connecting Larkspur and Sausalito with the Ferry Building during the morning and evening commute periods.

REGIONAL TRANSIT SCREENLINES

As is the case for Muni, transit service into and out of San Francisco on regional service providers is examined using a screenline analysis. The existing regional transit screenlines, as described in the *SF Guidelines*, were used to analyze regional transit capacity in the study area. Table 4.E.8: Regional Transit Screenlines – Existing Conditions presents the ridership and capacity utilization at the MLP for the regional screenlines during the weekday a.m. and p.m. peak hours. For regional operators, the MLP is typically at the San Francisco city limit (i.e., the East Bay MLP would occur at the Transbay Tube and on the Bay Bridge; the North Bay MLP would occur at the Golden Gate Bridge; and the South Bay MLP would occur at the southern city border). Inbound travel (into Downtown San Francisco) is analyzed during the a.m. weekday peak period, and outbound travel (out of Downtown San Francisco) is analyzed during the p.m. weekday peak period.

For regional transit providers (except for BART), the established capacity utilization threshold is equal to the number of seated passengers per vehicle. For BART, the established capacity utilization threshold is 107 passengers per car, which includes all seats and accounts for some standees. All of the regional transit operators have a 1-hour load factor standard of 100 percent, which would indicate that all seats are full. As a result, the Planning Department uses 100 percent capacity utilization as a threshold of significance for determining peak period transit demand impacts to regional transit.

As shown in Table 4.E.8, BART currently experiences over-capacity conditions in both the a.m. and p.m. peak hours to and from the East Bay. Specifically, BART's capacity utilization on the East Bay Regional Screenline is 109 percent in the a.m. peak hour and 107 percent in the p.m. peak hour. As a result, the regional screenline between San Francisco and the East Bay is over its capacity utilization threshold in the a.m. peak hour. All other regional screenlines operate within their designated capacity utilization thresholds.

Table 4.E.8: Regional Transit Screenlines – Existing Conditions

Regional Screenline	A.M. Peak Hour (Inbound)			P.M. Peak Hour (Outbound)		
	Ridership	Capacity	Utilization	Ridership	Capacity	Utilization
East Bay						
BART	25,399	23,256	**109%**	24,488	22,784	**107%**
AC Transit	1,568	2,829	55%	2,256	3,926	57%
Ferries	810	1,170	69%	805	1,615	50%
Screenline Total	27,777	27,255	**102%**	27,549	28,325	97%
North Bay						
Golden Gate Transit Bus	1,330	2,543	52%	1,384	2,817	49%
Ferries	1,082	1,959	55%	968	1,959	49%
Screenline Total	*2,412*	*4,502*	*54%*	*2,352*	*4,776*	*49%*
South Bay						
BART	14,150	19,367	73%	13,500	18.900	71%
Caltrain	2,171	3,100	70%	2,377	3,100	77%
SamTrans	255	520	49%	141	320	44%
Ferries	-	-	-	-	-	-
Screenline Total	*16,576*	*22,987*	*72%*	*16,018*	*22,320*	*72%*
Regional Screenlines Total	*46,765*	*54,744*	*85%*	*45,919*	*55,421*	*83%*

Note:
Bold indicates capacity utilization of 100 percent or greater.

Sources: San Francisco Planning Department, "Transit Data for Transportation Impact Studies," May 2015 and October 2016

Pedestrian Facilities

A qualitative evaluation of existing pedestrian conditions was conducted during field visits to the transportation study area in May 2015. The field visits revealed a lack of pedestrian facilities at some of the 37 existing study intersections, including locations that are missing sidewalks, missing crosswalks, missing Americans with Disabilities Act (ADA) accessible curb ramps, and lacking pedestrian countdown signals. Additionally, several locations have multiple turning lanes, such as dual right-turn lanes, that make pedestrian crossing difficult. Although some signals do not provide pedestrian countdown signals, at a minimum, basic pedestrian signal heads (with or without countdown indications) are currently provided at all signalized study intersections except at 20th Street and Illinois Street (although, as noted elsewhere in this document, that signal is currently operating in flashing red mode, indicating an all-way stop). In total, 16 of the 37 existing intersections are missing at least one pedestrian curb ramp at a

crosswalk terminus. At six intersections, the crosswalks were closed due to construction during the field visits.

General pedestrian impediments observed across the study area include:

- Narrow sidewalks;
- Intersections with no crosswalks;
- Construction zones that reduce sidewalk width or close crosswalks, at times for extended periods;
- Lack of ADA accessible curb ramps or use of shared diagonal curb ramps at intersection corners;
- Freeway on- and off-ramps with short pedestrian crossing phases and/or high vehicle volumes turning into crosswalks across multiple traffic lanes; and
- Long distances between intersections, particularly in the north-south direction, limiting crossing opportunities.

In the northern part of the transportation study area, in the SOMA neighborhood just north of Mission Creek, the blocks are fairly large and some streets are relatively wide, often with four travel lanes. The City has been making improvements to some SOMA streets, such as Townsend Street west of Fourth Street, to improve the pedestrian environment; although many streets remain very automobile-oriented.

Pedestrian facilities generally are most complete in the area bounded by King Street, Bryant Street, The Embarcadero, and Seventh Street. The majority of intersections in this area have adequate curb ramps and crosswalks, and only single turning lanes. One exception within that area is the intersection of Fourth and King streets, which is challenging for pedestrians due to a number of factors. The KT Third/Ingleside light rail station is in the middle of Fourth Street, south of King Street; the N Judah light rail station is in the middle of King Street, west of Fourth Street; and the Fourth and King Caltrain Station (the system's northern terminus and busiest station) is on the northwest corner of the intersection. Additionally, there is a double right-turn lane from southbound Fourth Street to westbound King Street; King Street becomes the I-280 freeway one block west. The high volume of pedestrians crossing at all legs of this intersection, transferring between transit routes at three different transit stations, while traffic attempts to enter or exit I-280 at King Street, creates a substantial number of conflicts between modes, particularly pedestrians and automobiles. The project site is more than 1 mile from this intersection, and it is unlikely that many project-generated pedestrian trips or vehicle trips would use this intersection, except for users of the Proposed Project's shuttle system if shuttles stop near this location (see "Project Features" discussion, pp. 4.E.41-4.E.47, for more details). Improvements are planned and under construction for this intersection as part of construction of the Central Subway through signal retiming and reduction in auto travel lanes to provide right-of-way for the light rail. This

will likely reduce the number of pedestrian/vehicle conflicts at the intersection. These improvements are expected to be complete by 2019.

The central part of the study area, in Mission Bay, is largely under construction or planned for future construction. As a result, pedestrian facilities can be discontinuous in some areas; however, the overall Mission Bay Redevelopment Plan will result in a well-connected pedestrian network with more pedestrian-scale block sizes and street designs.

In the southern part of the study area, in the Dogpatch neighborhood, the north/south blocks are very long, while the east/west blocks are shorter. This portion of the study area is closest to the project site, and would be where most of the Proposed Project's pedestrian trips travel. General pedestrian impediments in this part of the study area are most prevalent along Illinois Street, Pennsylvania Avenue, Indiana Street, 16th Street, and Mariposa Street. On Mariposa Street, many intersections lack crosswalks. This causes pedestrians to have to walk a long distance before being able to cross Mariposa Street safely. Some of these issues, including new crosswalks, will be addressed by the planned improvements along Mariposa Street to widen the street, add left-turn lanes, and create a new signalized intersection at Owens Street. These improvements are being implemented separately as part of the overall Mission Bay Redevelopment Plan. Similarly, Pennsylvania Avenue also presents particularly challenging pedestrian environments, with numerous freeway on- and off-ramps, narrow or missing sidewalks, missing crosswalks, and largely industrial or auto-centric land uses. There are no pedestrian facilities at the I-280 on- and off-ramps at Pennsylvania Avenue, and the sidewalks along Pennsylvania Avenue between Cesar Chavez Street and 23rd Street are either very narrow with many obstacles such as utility poles or they are missing altogether. On 16th Street, construction on the south side of the street limits pedestrian movement at Owens Street.

Illinois Street is the other location in the southern part of the project study area lacking complete facilities. Specifically, Illinois Street between 20th and 18th streets (streets providing primary access to the project site) has gaps in the sidewalk, which is reflective of the area's industrial roots. These gaps make some areas difficult for pedestrians to traverse and make pedestrian access to the project site challenging.

The existing condition on the project site has limited pedestrian facilities with few sidewalks or crosswalks. Currently, pedestrian volumes around the project site are generally low. There is more activity along Third Street, particularly at light rail stops. There is also a fair amount of pedestrian activity along 22nd Street related to the shops and cafes between Illinois Street and Indiana Street, and west of Third Street related to the 22nd Street Caltrain Station. The project site is not on the pedestrian high injury network identified in the Vision Zero SF initiative (see "Vision Zero" under Regulatory Framework on p. 4.E.38, below).

Bicycle Circulation

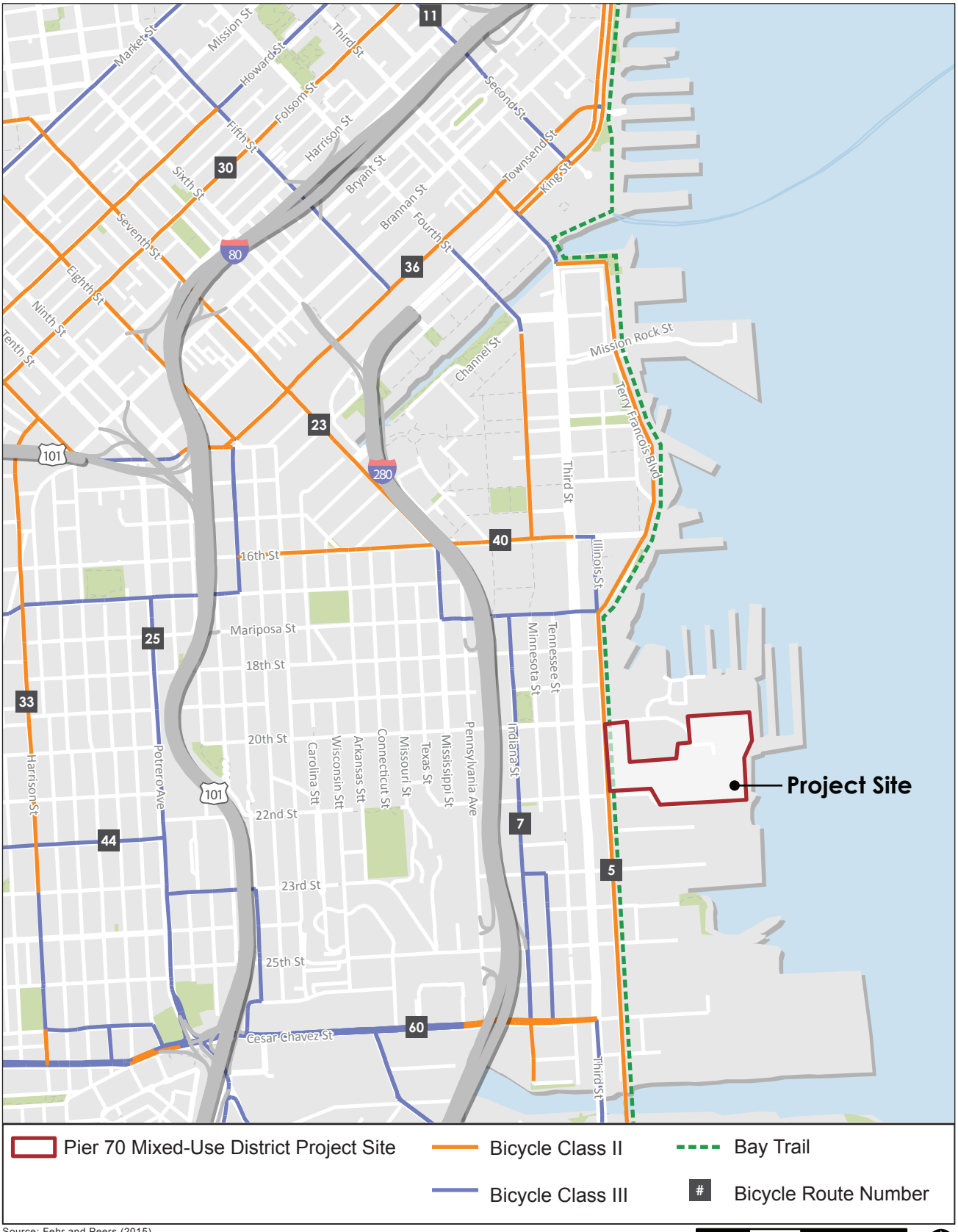
Bicycle facilities in the transportation study area consist of bicycle paths, separated bicycle lanes, and bicycle routes. Bicycle paths (Class I) provide a completely separated right-of-way for the shared use of cyclists and pedestrians. These facilities are off-street and minimize cross-flow traffic, but they can be adjacent to an existing roadway. Separated bicycle lanes (Class II) provide a striped, marked, and signed bicycle lane separated from vehicle traffic. These facilities are located on roadways and reserve a minimum of 4-5 feet of space for exclusive bicycle traffic. Class II lanes can sometimes include a buffer between the auto travel lane and the bicycle lane. Bicycle routes (Class III) provide a shared travel lane marked and signed for shared use with motor vehicle traffic. These facilities may or may not be marked with "sharrows," a stencil painted on the surface of a travel lane showing a bicycle on several arrows pointing in the direction of travel, to emphasize that the roadway space is shared.

Current on-street bicycle facilities, as designated by the San Francisco Bikeway Network Map (2013),[6] are shown on a map of the project vicinity in Figure 4.E.4: Existing Bicycle Network. Bicycle volume counts were conducted during the weekday a.m. and p.m. peak periods (7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m., respectively) in September 2013 and January 2014. The majority of the study area is flat with limited changes in grades, facilitating bicycling within and through the area.

The following bicycle lanes and routes are found in the transportation study area:

- Route 5 runs through the study area along Terry A Francois Boulevard and Illinois Street. It is signed and striped as a Class II bicycle lane.
- Route 7 runs along Indiana Street in the study area, connecting to Mariposa Street in the north and to Third Street via Cesar Chavez Street in the south. It is designated a Class III bicycle route.
- Route 23 runs north-south in the study area along Seventh Street to Mariposa Street via Mississippi Street and terminates at Illinois Street. It is signed and striped as a Class II bicycle lane.
- Route 36 runs east-west along Townsend Street from The Embarcadero to Eighth Street and then west along 14th Street as a Class II bicycle lane.
- Route 40 runs east-west in the study area along 16th Street as a Class II bicycle lane and terminates in the east at Third Street. It continues west through the Twin Peaks neighborhood until it terminates at the Great Highway via Kirkham Street through the Sunset neighborhood.
- Route 60 runs east-west in the study area along Cesar Chavez Boulevard. It is signed and striped as a Class II bicycle lane between Third Street and Pennsylvania Avenue and is designated a Class III bicycle route west of Pennsylvania Avenue.

[6] San Francisco Municipal Transportation Agency, San Francisco Bikeway Network Map, available on line at https://www.sfmta.com/sites/default/files/maps/One%20Page.pdf, accessed November 18, 2015.



PIER 70 MIXED-USE DISTRICT PROJECT

FIGURE 4.E.4: EXISTING BICYCLE NETWORK

The San Francisco Bay Trail runs along Illinois Street from Cargo Way to Terry A Francois Boulevard at Mariposa Street and adjacent to the project site between 20th and 22nd streets. The Bay Trail is a planned recreational corridor that, when complete, will encircle San Francisco and San Pablo Bays with a continuous 500-mile network of bicycling and hiking trails. It will connect the shoreline of all nine Bay Area counties, link 47 cities, and cross the major toll bridges in the region. To date, approximately 340 miles of the alignment have been completed. Route 5 is part of the Bay Trail. Within San Francisco, the portion of the Bay Trail planned between Mission Creek and the southern City limits is referred to as the Blue Greenway. The Blue Greenway is generally planned to be a Class I facility that travels along the waterfront. The project site is not on the bicycle high injury network identified as part of the Vision Zero SF initiative.

Loading Facilities

The project site is currently occupied by self-storage facilities, warehouses, automobile storage lots, a parking lot, a soil recycling yard, artists' studios, and office spaces. To access the project site, trucks use Illinois Street from I-280 via 18th Street, Mariposa Street, 23rd Street, 25th Street, or Cesar Chavez Street. Currently, the roads providing immediate access to the project site tend to have low vehicle and pedestrian activity, making maneuvering to enter and exit the project site relatively easy without blocking traffic or affecting pedestrians.

Loading activity at the loading docks in the project site vicinity was observed during the morning (10:00 a.m. to 11:30 a.m.) and afternoon (4:00 p.m. to 5:30 p.m.) of a typical weekday. Trucks were observed to be on Illinois Street between 18th Street and 23rd Street throughout the day. There are currently no on-street loading spaces on the block of Illinois Street between 20th Street and 22nd Street.

There are about 25 loading docks along the frontage of the American Industrial Center (AIC) building on the west side of Illinois Street (across from the project site) between 20th Street and 22nd Street, though during observations conducted in January 2016, much of this area was used for parking private vehicles and small vans rather than for loading activities. Approximately eight loading docks near the middle of the block between 20th and 22nd streets appeared to be available for loading activities, but trucks were only observed at two or three of the docks, and trucks entering and exiting the docks were infrequent, particularly during the peak hours on the adjacent streets. Six trucks were observed during the morning (between approximately 10 – 11:30 a.m.), three of which did not pull into the loading docks, instead illegally using the sidewalk and/or the bike lane during the pick-up or delivery activity (typically about 5 minutes in duration). In the afternoon (between approximately 4 – 5:30 p.m.), four trucks were observed at the loading docks, two of which illegally used the sidewalk and/or bike lane for at least 15 minutes instead of pulling into a loading dock. In addition, two vans were observed illegally loading on the sidewalk in front of the southernmost loading docks and three mid-sized

automobiles used the loading docks for several minutes for delivery / pick-up. The informal loading activity, blocking the sidewalk and/or bike lane, creates potential conflicts with pedestrians and bicyclists, as the west side of Illinois Street is one elongated driveway apron with no raised curb and there is a Class II bicycle lane on both sides of Illinois Street, between Cargo Way and Terry A Francois Boulevard.

Emergency Access

Emergency transport vehicles typically use major streets through the transportation 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. Five San Francisco Fire Department fire stations are located in or near the study area: Station 8 (Bluxome Street at Fourth Street, 1.5 miles from the project site), Station 25 (Third Street at Cargo Way, 0.9 mile from the project site), Station 29 (16th Street at Vermont Street, 1.4 miles from the project site), Station 37 (Wisconsin Street at 22nd Street, 0.8 mile from the project site), and the new Station 4 in the Public Safety Building at 1245 Third Street (0.8 mile from the project site) that opened in early 2015. The University of California, San Francisco (UCSF) Mission Bay Medical Center is located in the study area, four blocks north and two blocks west of the project site, to the north of 16th Street between Owens and Third streets. San Francisco General Hospital, with the region's main trauma center, is located approximately 1 mile west of the project site on Potrero Avenue at 23rd Street; the driving distance is more than 2 miles, as the east-west streets west of I-280 are generally discontinuous and do not connect directly to Potrero Avenue between 17th and Cesar Chavez streets.

BASELINE CONDITIONS

The analyses in CEQA documents typically present existing and existing-plus-project scenarios to isolate the impacts of the Proposed Project by comparing conditions with the Proposed Project to existing conditions. However, in the Pier 70 transportation study area, unusual aspects of the surrounding conditions warrant a different approach. Multiple land development projects and transportation infrastructure improvements are either recently completed, under construction, or approved and funded and expected to be under construction or completed by the time the Proposed Project is under construction. Because the area is changing rapidly, and there are known development and infrastructure projects underway, a baseline other than existing conditions is appropriate for the analyses presented in this section. An analysis based on existing conditions would be uninformative and misleading to the decision makers and the public. The baseline includes projects that were under construction at the time the Notice of Preparation (NOP) was published or that have been approved and funded and are reasonably likely to be completed by the time the Proposed Project is under construction. Traffic and transit trip generation and assignment for projects included in the Baseline conditions were obtained from

those projects' respective transportation impact analyses, and added to existing conditions traffic volumes and transit ridership. The local transit capacity improvements, such as the Central Subway, were added to existing conditions to provide a reasonable baseline for the analysis of transit impacts.[7]

The baseline projects are listed in Section 4.A, Introduction to Chapter 4, on pp. 4.A.5-4.A.12. They include the UCSF Hospital and Mission Bay Hall, the Public Safety Building, the Italian International School, and the 20th Street Historic Core adaptive reuse development, plus eight private residential and mixed-use development projects, two new open spaces, the Central Subway project, the new Muni route 55 16th Street, a new transit-only lane on 16th Street, and street improvements along Owens and Mariposa streets at the I-280 ramps.

No changes from Existing Conditions to Baseline Conditions have been identified for the pedestrian network, loading facilities, or emergency services access, except for those immediately adjacent to and a part of the improvements listed above (e.g., new sidewalks and crosswalks at the Mariposa Street / I-280 ramps intersections associated with the widening of Mariposa Street).

There are other known projects in the transportation study area that are under consideration, such as the proposed new Arena for the Golden State Warriors and the Mission Rock development project on Seawall Lot 337. The Arena project was approved subsequent to the completion of the transportation analysis, and the Mission Rock development project has not yet been approved; therefore, they are not included in the baseline but are considered in the cumulative impact analyses.

Transit Baseline

Transit conditions are expected to change in the transportation study area over the next several years. The Central Subway will provide a connection from the Caltrain station at Fourth Street / King Street to Chinatown. The new connection will be a subway that will serve major employment and population centers in San Francisco. As part of the Central Subway initial phase, service frequencies will be improved, substantially increasing capacity. Ground was broken on the project in 2010, and the subway extension is expected to be open to the public by 2019. Because the T Third is a major transit connection to the project site, and the Central Subway is under construction and anticipated to be operational when the first building at the Proposed Project site is occupied, the Central Subway has been included in the Baseline Conditions transit analysis. Other improvements are described below.

[7] The Muni transit analysis is based on an SF-CHAMP model run that includes ridership projections for 2020 and planned capacity assuming that the Central Subway project and other approved and funded transit improvements would be in operation by the time the Proposed Project is approved and under construction.

The new 55 16th Street bus route began operating in the Mission Bay area in January 2015, providing interim service between Mission Street and Third Street and north on Third Street to Mission Bay Boulevard North until the 22 Fillmore extension has been completed. The 22 Fillmore bus route will extend east on 16th Street to Third Street and on Third Street north to a turnaround within Mission Bay. The 33 Stanyan bus would be re-routed from Potrero Avenue to provide service on 18th Street presently provided by the 22 Fillmore. A loop at 18th Street is also planned for the T Third Muni Metro line to provide a turnaround for Central Subway trains during peak periods and special events, so that a "short line" can be operated, increasing the capacity on the T Third line between Chinatown and the 18th Street loop.[8] Although not adjacent to the Proposed Project site, the year 2020 forecasts also assume implementation of the Geary Bus Rapid Transit (BRT) project along Geary Boulevard.

Peak hour ridership and capacity utilization at the Muni Downtown screenlines and the three project-specific routes serving the project site for both the a.m. and p.m. peak hours under baseline conditions are presented in Table 4.E.9: Muni Downtown Screenlines and Project-Specific Routes – Baseline Conditions. The ridership data provided are from a 2020 model run of the San Francisco Chained Activity Model Process (SF-CHAMP) provided by the San Francisco County Transportation Authority (Transportation Authority).[9] The model run was checked to determine the land uses assumed for Pier 70 compared to an existing model (2012) and a build-out model (2040). There was substantial growth in the traffic analysis zone that includes Pier 70, and adjustments were made to the transit ridership to account for the growth in the Baseline Conditions Scenario. The capacity utilization calculation uses a.m. data in the inbound direction and p.m. data in the outbound direction, which aligns with the peak directions of travel and patronage loads for the Muni system to or from the Downtown area during those periods. As shown in the table, all screenlines operate below Muni's 85 percent capacity utilization standard except for the southwest screenline in the a.m. peak hour. The southwest screenline shows 92 percent capacity utilization overall in the a.m. peak hour, in part as a result of the 97 percent utilization on the subway lines subcorridor. Although the capacity utilization for the southwest screenline and the subway lines subcorridor exceed the 85 percent capacity utilization threshold in the a.m. peak hour under Baseline Conditions, the capacity utilization on both the subway lines subcorridor and the southwest screenline is reduced compared to Existing Conditions because of increased frequency due to Muni Forward improvements and Central Subway / T Third Short Line improvements. The Other Lines subcorridor within the southeast screenline shows 90 percent capacity utilization in the a.m. peak hour, but since the southeast screenline shows 64 percent capacity utilization overall in the a.m. peak hour, conditions on that screenline are considered acceptable.

[8] As explained in Section 4.A, Introduction to Chapter 4, pp. 4.A.11-4.A.12, the T Third short line loop has been approved by the SFMTA Board of Directors and is currently under construction.

[9] SF CHAMP Model version originally prepared for Scenario 8 of the Central Corridor Study.

Table 4.E.9: Muni Downtown Screenlines and Project-Specific Routes – Baseline Conditions

Screenline	A.M. Peak Hour (Inbound)			P.M. Peak Hour (Outbound)		
	Ridership	**Capacity**	**Utilization**	**Ridership**	**Capacity**	**Utilization**
Northeast						
Kearny/Stockton	2,273	3,157	72%	2,444	3,327	73%
Other lines	710	1,141	62%	903	1,155	78%
Screenline Total	*2,983*	*4,298*	*69%*	*3,347*	*4,482*	*75%*
Northwest						
Geary	2,302	3,764	61%	2,913	3,621	80%
California	1,436	2,010	71%	1,349	1,752	77%
Sutter/Clement	514	630	82%	523	630	83%
Fulton/Hayes	1,505	2,237	67%	1,544	1,838	84%
Balboa	553	1,008	55%	537	974	55%
Screenline Total	*6,310*	*9,649*	*65%*	*6,866*	*8,815*	*78%*
Southeast						
Third Street	1,025	3,808	27%	1,836	3,808	48%
Mission	2,155	2,632	82%	1,927	2,632	73%
San Bruno/Bayshore	1,867	2,197	85%	1,761	2,134	83%
Other lines	1,577	1,756	**90%**	1,213	1,675	72%
Screenline Total	*6,624*	*10,393*	*64%*	*6,737*	*10,249*	*66%*
Southwest						
Subway lines	6,783	7,020	**97%**	5,433	6,804	80%
Haight/Noriega	1,178	1,596	74%	1,065	1,596	67%
Other lines	474	560	85%	655	840	78%
Screenline Total	*8,435*	*9,176*	***92%***	*7,153*	*9,240*	*77%*
Muni Screenlines Total	*24,352*	*33,515*	*73%*	*24,103*	*32,786*	*74%*

Table 4.E.9 Continued

Screenline	A.M. Peak Hour (Inbound)			P.M. Peak Hour (Outbound)		
	Ridership	Capacity	Utilization	Ridership	Capacity	Utilization
Individual Muni Routes						
22 Fillmore IB[1]	501	882	57%	436	939	46%
22 Fillmore OB[1]	340	882	39%	400	939	43%
48 Quintara/24th Street IB	119	252	47%	160	252	63%
48 Quintara/24th Street OB	199	252	79%	213	252	85%
T Third IB	1,097	3,808	29%	1,940	3,808	51%
T Third OB	1,931	3,808	51%	1,742	3,808	46%

Notes:

1. *Ridership and capacity for the 22 Fillmore include both the 22 Fillmore and the 33 Stanyan routes, since they will both provide complimentary service to and from the project area.*

Bold indicates capacity utilization of 85 percent or greater.

Source: Fehr & Peers, 2016. See Appendix D in the Transportation Impact Study, Appendix B to this EIR, for Transit Line Capacity Calculations.

The regional transit screenline ridership and capacity utilization with Baseline Conditions are shown in Table 4.E.10: Regional Transit Screenlines – Baseline Conditions. As under Existing Conditions, the a.m. peak hour screenline to the East Bay would continue to exceed the 100 percent capacity utilization threshold while all other screenlines would continue to operate within their capacity utilization standards. The East Bay screenline shows 109 percent capacity utilization in the a.m. peak hour for BART and 102 percent overall capacity utilization in the a.m. peak hour. The East Bay screenline shows 105 percent capacity utilization in the p.m. peak hour for BART and 96 percent overall capacity utilization in the p.m. peak hour.

Bicycle Network Baseline

The San Francisco Bicycle Plan (Bike Plan) includes several near-term improvements to the City's bicycle network within the transportation study area. The new bicycle lanes on Second Street between King Street and Market Street are included in the EIR's Baseline Conditions. These bicycle lanes are part of an initial phase of the Second Street Improvement project. The initial phase of bicycle lanes was completed in 2016, and a longer-term project to widen sidewalks and construct one-way cycle tracks is scheduled to begin construction in early 2017. Other near-term improvements in the Bike Plan on Fifth Street, Fremont Street, and 16th Street, are not funded and therefore are included in Cumulative Conditions.

Table 4.E.10: Regional Transit Screenlines – Baseline Conditions

Regional Screenline	A.M. Peak Hour (Inbound)			P.M. Peak Hour (Outbound)		
	Ridership	Capacity	Utilization	Ridership	Capacity	Utilization
East Bay						
BART	28,000	25,680	**109%**	27,000	25,680	**105%**
AC Transit	1,596	2,829	56%	2,297	3,926	59%
Ferries	818	1,170	70%	813	1,615	50%
Screenline Total	*30,414*	*29,679*	***102%***	*30,110*	*31,221*	*96%*
North Bay						
Golden Gate Transit Bus	1,344	2,543	53%	1,399	2,817	50%
Ferries	1,088	1,959	56%	973	1,959	50%
Screenline Total	*2,432*	*4,502*	*54%*	*2,372*	*4,776*	*50%*
South Bay						
BART	16,000	21,400	75%	15,000	21,400	70%
Caltrain	2,258	3,100	73%	2,472	3,100	80%
SamTrans	266	520	51%	147	320	46%
Ferries	-	-	-	-	-	-
Screenline Total	*18,524*	*25,020*	*74%*	*17,619*	*24,820*	*71%*
Regional Screenlines Total	*51,370*	*29,201*	*87%*	*50,101*	*60,817*	*82%*

Note:
Bold indicates capacity utilization of 100 percent or greater.

Sources: San Francisco Planning Department, "Transit Data for Transportation Impact Studies," May 2015 and October 2016

REGULATORY FRAMEWORK

This section provides a summary of the plans and policies of the City and County of San Francisco, and regional, State, and Federal agencies that have policy and regulatory control over the project site. These plans and policies include the *San Francisco General Plan*, the *San Francisco Bicycle Plan*, and the Transit First Policy.

FEDERAL

There are no Federal transportation regulations applicable to the Proposed Project.

STATE

Senate Bill 743 and Public Resources Code Section 21099

In 2013, the California State Legislature passed Senate Bill (SB) 743, which added Section 21099 to CEQA. Section 21099(b)(1) requires that the State Office of Planning and Research (OPR) develop revisions to the CEQA Guidelines establishing criteria for determining the significance of transportation impacts of projects within transit priority areas. Specifically, SB 743 called on OPR to study the removal of automobile delay as a metric for evaluating transportation impacts and to develop alternative metrics that better match the State's policies around promoting infill development, public health through active transportation, and greenhouse gas emissions.

Additionally, SB 743 requires changes to the analysis of parking impacts for certain urban infill projects in transit priority areas.[10] Public Resources Code Section 21099(d), effective January 1, 2014, provides that "… parking impacts of a residential, mixed-use residential, or employment center project on an infill site located within a transit priority area shall not be considered significant impacts on the environment." Accordingly, parking is no longer to be considered in determining whether a project has the potential to result in significant environmental effects for projects that meet all three criteria established in the statute.

REGIONAL

San Francisco Bay Trail Plan

The Association of Bay Area Governments (ABAG) administers the San Francisco Bay Trail Plan. The Bay Trail is a multi-purpose recreational trail that, when complete, would encircle San Francisco Bay and San Pablo Bay with a continuous 500-mile network of bicycling and hiking trails; to date, about 340 miles of the alignment have been completed. The 2005 Gap Analysis Study, prepared by ABAG for the entire Bay Trail area, attempted to identify the remaining gaps in the Bay Trail system; classify the gaps by phase, county, and benefit ranking; develop cost estimates for individual gap completion; identify strategies and actions to overcome gaps; and present an overall cost and timeframe for completion of the Bay Trail system. The Bay Trail in this portion of San Francisco is along Illinois Street on the western border of the project site. Therefore, the 2005 Gap Analysis Study did not identify the project site as a gap segment of the Bay Trail. The Port's *Pier 70 Preferred Master Plan* articulates the goal of including the project site as part of the Bay Trail network.

[10] A "transit priority area" is defined as an area within 0.5 mile of an existing or planned major transit stop. A "major transit stop" is defined in California Public Resources Code Section 21064.3 as a 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 frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods. A map of San Francisco's Transit Priority Areas is available online at http://sfmea.sfplanning.org/Map%20of%20San%20Francisco%20Transit%20Priority%20Areas.pdf.

LOCAL

Transit First Policy

In 1998, the San Francisco voters amended the City Charter (Charter Article 8A, Section 8A.115) to include a Transit First Policy, which was first articulated as a City priority policy by the Board of Supervisors in 1973. The Transit First Policy is a set of principles which underscore the City's commitment that travel by transit, bicycle, and foot be given priority over the private automobile. These principles are embodied in the policies and objectives of the Transportation Element of the *San Francisco General Plan*. All City boards, commissions, and departments are required, by law, to implement transit-first principles in concluding City affairs.

San Francisco General Plan

The Transportation Element of the *San Francisco General Plan* is composed of objectives and policies that relate to the eight aspects of the citywide transportation system: General Regional Transportation, Congestion Management, Vehicle Circulation, Transit, Pedestrian, Bicycles, Citywide Parking, and Goods Management. The Transportation Element references San Francisco's "Transit First" Policy in its introduction, and contains the following objectives and policies that are directly pertinent to consideration of the Proposed Project:

Objective 2: Use the transportation system as a means for guiding development and improving the environment.

- Policy 2.1: Use rapid transit and other transportation improvements in the city and region as the catalyst for desirable development, and coordinate new facilities with public and private development.
- Policy 2.4: Organize the transportation system to reinforce community identity, improve linkages among interrelated activities, and provide focus for community activities.
- Policy 2.5: Provide incentives for the use of transit, carpools, vanpools, walking, and bicycling and reduce the need for new or expanded automobile and automobile parking facilities.

Objective 8: Maintain and enhance regional pedestrian, hiking, and biking access to the coast, the Bay, and ridge trails.

- Policy 8.1: Ensure that the Coast Trail, Bay Trail, and Ridge Trail remain uninterrupted.

Objective 11: Establish public transit as the primary mode of transportation in San Francisco and as a means through which to guide future development and improve regional mobility and air quality.

Policy 11.3: Encourage development that efficiently coordinates land use with transit service, requiring that developers address transit concerns as well as mitigate traffic problems.

Objective 14: Develop and implement a plan for operational changes and land use policies that will maintain mobility and safety, despite a rise in travel demand that could otherwise result in system capacity deficiencies.

Policy 14.2: Ensure that traffic signals are timed and phased to emphasize transit, pedestrian, and bicycle traffic as part of a balanced multimodal transportation system.

Policy 14.3: Improve transit operation by implementing strategies that facilitate and prioritize transit vehicle movement and loading.

Policy 14.4: Reduce congestion by encouraging alternatives to the single-occupancy auto through the reservation of right-of-way and enhancement of other facilities dedicated to multiple modes of transportation.

Policy 14.7: Encourage the use of transit and other alternative modes of travel to the private automobile through the positioning of building entrances and the convenient location of support facilities that prioritizes access from these modes.

Objective 16: Develop and implement programs that will efficiently manage the supply of parking at employment centers throughout the city so as to discourage single-occupant ridership and encourage ridesharing, transit and other alternatives to the single-occupant automobile.

Policy 16.5: Reduce parking demand through limiting the absolute amount of spaces and prioritizing the spaces for short-term and ride-share uses.

Policy 16.6: Encourage alternatives to the private automobile by locating public transit access and ride-share vehicle and bicycle parking at more close-in and convenient locations on-site, and by locating parking facilities for single-occupant vehicles more remotely.

Objective 18: Establish a street hierarchy system in which the function and design of each street are consistent with the character and use of the adjacent land.

Policy 18.2: Design streets for a level of traffic that serves, but will not cause a detrimental impact on, adjacent land uses or eliminate the efficient and safe movement of transit vehicles and bicycles.

Policy 18.5: Mitigate and reduce impacts of automobile traffic in and around parks and along shoreline recreation area.

Objective 23: Improve the city's pedestrian circulation system to provide for efficient, pleasant, and safe movement.

Policy 23.2: Widen sidewalks where intensive commercial, recreational, or institutional activity is present and where residential densities are high.

Policy 23.3: Maintain a strong presumption against reducing sidewalk widths, eliminating crosswalks, and forcing indirect crossings to accommodate automobile traffic.

Policy 23.6: Ensure convenient and safe pedestrian crossings by minimizing the distance pedestrians must walk to cross a street.

Objective 24: Improve the ambiance of the pedestrian environment.

Objective 28: Provide secure and convenient parking facilities for bicycles.

Policy 28.1: Provide secure bicycle parking in new governmental, commercial, and residential developments.

Policy 28.3: Provide parking facilities which are safe, secure, and convenient.

Objective 30: Ensure that the provision of new or enlarged parking facilities does not adversely affect the livability and desirability of the city and its various neighborhoods.

Policy 30.1: Assure that new or enlarged parking facilities meet need, locational, and design criteria.

Policy 30.5: In any large development, allocate a portion of the provided off-street parking spaces for compact automobiles, vanpools, bicycles, and motorcycles commensurate with standards that are, at a minimum, representative of their proportion of the city's vehicle population.

Policy 30.8: Consider lowering the number of automobile parking spaces required in buildings where Class I bicycle parking is provided.

Objective 34: Relate the amount of parking in residential areas and neighborhood commercial districts to the capacity of the city’s street system and land use patterns.

Policy 34.1: Regulate off-street parking in new housing so as to guarantee needed spaces without requiring excesses and to encourage low auto ownership in neighborhoods that are well served by transit and are convenient to neighborhood shopping.

Policy 34.3: Permit minimal or reduced off-street parking for new buildings in residential and commercial areas adjacent to transit centers and along transit preferential street.

Objective 35: Meet short-term parking needs in neighborhood shopping districts consistent with preservation of a desirable environment for pedestrians and residents.

Policy 35.1: Provide convenient on-street parking specifically designed to meet the needs of shoppers dependent upon automobiles.

Policy 35.2: Assure that new neighborhood shopping district parking facilities and other auto-oriented uses meet established guidelines.

San Francisco Bicycle Plan

The *San Francisco Bicycle Plan* (*Bike Plan*) describes a City program to provide the safe and attractive environment needed to promote bicycling as a transportation mode. The *Bike Plan* identifies the citywide bicycle route network, and establishes the level of treatment (i.e., Class I, Class II, or Class III facility) on each route. The *Bike Plan* also identifies near-term improvements that could be implemented within the next 5 years, as well as policy goals, objectives, and actions to support these improvements. It includes long-term improvements, and minor improvements that would be implemented to facilitate bicycling in San Francisco.

Better Streets Plan

The *San Francisco Better Streets Plan* focuses on creating a positive pedestrian environment through measures such as careful streetscape design and traffic calming measures to increase pedestrian safety. The *Better Streets Plan* includes guidelines for the pedestrian environment, defined as the areas of the street where people walk, sit, shop, play, or interact. Generally speaking, the guidelines are for design of sidewalks and crosswalks; however, in some cases the *Better Streets Plan* includes guidelines for other areas of the roadway, particularly at intersections.

Vision Zero

Vision Zero is a policy adopted by both the San Francisco Board of Supervisors and SFMTA to eliminate all traffic deaths in San Francisco by the year 2024. The goal of Vision Zero is also to reduce severe injury inequities across neighborhoods, transportation modes, and populations. Some actions SFMTA has and will take to improve pedestrian safety include safer signal timing at intersections, adding "continental" crosswalks (crosswalks with zebra striping), "leading" pedestrian signals that allow pedestrians to get a head start at signalized intersections, red zones at intersections to improve visibility, and pedestrian bulbs to shorten pedestrian crossing distances.

Transportation Sustainability Program

The Transportation Sustainability Program is an effort to reconcile the increasing demand for transportation within San Francisco with the very limited right-of-way available. The Program aims to achieve a more efficient transportation system through a three-pronged approach. The Program calls for improved investment in transportation infrastructure, alignment of the City's environmental review processes with City policies, and adopting new practices supporting a shift in travel from single-occupant vehicles to other, more space-efficient modes of travel. Two of the three prongs of the Program have been adopted by the Board of Supervisors and or Planning Commission, an updated and expanded transportation impact fee (Transportation Sustainability Fee) and a change to the City's transportation significance thresholds. The third prong, a Transportation Demand Management (TDM) ordinance, is described further below.

Transportation Demand Management Ordinance

The San Francisco Planning Commission has recently recommended that the Board of Supervisors approve an amendment to the City's Planning Code requiring most new development projects in San Francisco to incorporate "design features, incentives, and tools" intended to reduce VMT. New development projects would be required to choose from a menu of options to develop an overall plan of TDM elements. Each development project's TDM plan will require routine monitoring and reporting to the Planning Department to demonstrate compliance. As of the preparation of this document, the ordinance has been continued at the Board of Supervisors Land Use and Transportation Committee to January 23, 2017.

Climate Action Plan

In response to overwhelming scientific evidence suggesting that human behavior is accelerating climate change, the City adopted a *Climate Action Plan* to address actions the City could take to reduce its contribution to climate change. The *Climate Action Plan* describes the effects that climate change may have on San Francisco based on scientific research and presents an inventory of San Francisco's contribution to greenhouse gas emissions – the leading human contributor toward accelerating climate change. The *Plan* also recommends a greenhouse gas reduction target and describes specific measures that the City could take to reach its target – including recommendations for reducing trips by automobile.

Waterfront Transportation Assessment

SFMTA and the Transportation Authority have been working with the other City agencies, regional transportation providers, and community members to assess future transportation system needs along the east side of the City, beginning in 2012. Phase 2 of the Waterfront Transportation Assessment (WTA) studies the SOMA Area, Mission Bay, and the Central Waterfront south to Cesar Chavez Street.[11] The Phase 2 report (WTA Phase 2) was completed in August 2015.

The purpose of the WTA is to identify future transportation facility needs to accommodate growth in the City and an expected increase in travel demand of approximately 50 percent in the SOMA and Central Waterfront area by the year 2040. The WTA Phase 2 concludes that mode shifts from car to other modes will be necessary if growth in transportation demand is to be accommodated, and that those shifts will need to be not only from car to transit but also from car to bicycle and walking. The necessary mode shifts are likely to occur only if there are

[11] SFMTA and the Transportation Authority, *Waterfront Transportation Assessment, Phase 2 SoMa, Mission Bay, Central Waterfront Transportation Analysis Final Report*, August 2015.

improvements to the transportation facilities (bicycle, pedestrian, and transit infrastructure) and their safety coupled with TDM strategies.[12]

The WTA is a planning tool with technical analysis support. The analysis supporting the conclusions accounts for the growth in jobs and population estimated to occur with implementation of the Pier 70 Mixed-Use District Project in the Central Waterfront Area.[13] The WTA does not present policies or objectives that would directly affect land use decisions. It does present recommendations for improvements that could support population and job growth in the Central Waterfront neighborhoods.

IMPACTS AND MITIGATION MEASURES

SIGNIFICANCE THRESHOLDS

The significance criteria listed below are organized by mode to facilitate the transportation impact analysis; however, the transportation significance thresholds are essentially the same as the ones in the environmental checklist (Appendix G of the State *CEQA Guidelines*) and incorporate San Francisco Planning Commission Resolution 19579 and supporting materials.[14] For the purpose of this analysis, the following applicable thresholds were used to determine whether implementing the proposed project would result in a significant impact on transportation and circulation:

- **Vehicle Miles Traveled** –
  - The project would have a significant effect on the environment if it would cause substantial additional VMT.
  - The project would have a significant effect on the environment if it would substantially induce additional automobile travel by increasing physical roadway capacity in congested areas (i.e., by adding new mixed-flow travel lanes) or by adding new roadways to the network.
- **Transit** – A project would have a significant effect on the environment if it would cause a substantial increase in transit demand that could not be accommodated by adjacent transit capacity, resulting in unacceptable levels of transit service; or cause a substantial increase in delays or operating costs such that significant adverse impacts in transit service levels could result. With the Muni and regional transit screenlines analyses, the project would have a significant effect on the transit provider if project-related transit trips would cause the capacity utilization standard to be exceeded during the peak hour. For screenlines that already operate above the utilization standard during the peak hour, a project would have a significant effect on the transit provider if project-related transit trips were more than 5 percent of total transit trips during the peak hour.

[12] SFMTA and the Transportation Authority, *Waterfront Transportation Assessment, Phase 2 SoMa, Mission Bay, Central Waterfront Transportation Analysis Final Report*, August 2015, p. 19.
[13] SFMTA, the Transportation Authority, ARUP, *Nelson/Nygaard*, *Waterfront Transportation Assessment, Phase 2 SoMa, Mission Bay, Central Waterfront Transportation Analysis, Appendix A: Technical Report*, August 2015, p. 5.
[14] San Francisco Planning Department, *Updated TIA Significance Thresholds*, September 13, 2016.

- **Pedestrians** – A project would have a significant effect on the environment if it would result in substantial overcrowding on public sidewalks, create potentially hazardous conditions for pedestrians, or otherwise interfere with pedestrian accessibility to the site and adjoining areas.
- **Bicycles** – A project would have a significant effect on the environment if it would create potentially hazardous conditions for bicyclists or otherwise substantially interfere with bicycle accessibility to the site and adjoining areas.
- **Loading** – A project would have a significant effect on the environment if it would result in a loading demand during the peak hour of loading activities that could not be accommodated within proposed on-site loading facilities or within convenient on-street loading zones, and if it would create potentially hazardous traffic conditions or significant delays affecting traffic, transit, bicycles, or pedestrians.
- **Traffic** – The project would have a significant adverse impact if it would cause major traffic hazards.
- **Emergency Vehicle Access** – A project would have a significant effect on the environment if it would result in inadequate emergency access.
- **Construction** – Construction of the project would have a significant effect on the environment if, in consideration of the project site location and other relevant project characteristics, the temporary construction activities' duration and magnitude would result in substantial interference with pedestrian, bicycle, or vehicle circulation and accessibility to adjoining areas thereby resulting in potential hazardous conditions.
- **Parking** – The project would have a significant effect on the environment if it would result in a substantial parking deficit that would create hazardous conditions or significant delays affecting traffic, transit, bicycles, or pedestrians and where particular characteristics of the project or its site demonstrably render use of other modes infeasible.

As described in the NOP/IS (provided in Appendix A in this EIR), the project site is not located within an area covered by an airport land use plan or within 2 miles of a public airport or public use airport; nor is it within the vicinity of a private airstrip. Therefore, implementation of the Proposed Project or its variants and alternatives would not result in a change in air traffic patterns, including either an increase in traffic levels, obstructions to flight, or a change in location, that results in substantial safety risks, and these issues are not addressed in this EIR.

PROJECT FEATURES

Development Program

The Proposed Project would develop the 28-Acre Site and the Illinois Parcels (the Hoedown Yard and 20th/Illinois Site). It provides for a phased and flexible land use program that would allow some of the parcels to be developed for either primarily commercial uses or residential uses. Two parcels are proposed to be designated for district structured parking, but either residential or commercial uses could be developed on one of the parcels and residential uses could be developed on the other, instead of parking. Thus, two development scenarios are analyzed

equally to provide the maximum range of transportation impacts from development of either more commercial or more residential space.

As noted in the Environmental Setting section, the project site currently hosts approximately 50 special events per year, which include evening happy hours, music concerts, fairs, and markets. Attendance levels can vary widely, but occasionally the largest events can draw up to 40,000 people.

The Proposed Project also includes open space programming elements that are anticipated to include art and cultural events, outdoor fairs, festivals and markets, outdoor film screenings, night markets, food events, street fairs or festivals, lecture series, art exhibitions, and theater performances during weekdays and weekends. Typical events at the Proposed Project, occurring up to an estimated three times per month, could have attendance of approximately 500 to 750 people, while larger-scale events, occurring approximately four times per year, could have attendance of up to 5,000 people.

As shown in Table 2.3: Project Summary - Maximum Residential Scenario, in Chapter 2, Project Description, p. 2.29, the Maximum Residential Scenario would provide up to 3,025 residential units (2,630,000 gross square feet [gsf]), 1,102,250 gsf of commercial space, 479,980 gsf of retail/arts/light-industrial (RALI) space[15], 9 acres of open space, and up to 3,370 off-street parking spaces. Existing buildings to be renovated and converted would house about 237,800 gsf of the residential, commercial, and/or RALI space. Total development would be about 4,212,230 gsf.

Table 2.4: Project Summary - Maximum Commercial Scenario, in Chapter 2, Project Description, p. 2.31, presents the land uses and square footage for the Maximum Commercial Scenario. This scenario would provide 1,645 residential units (1,430,000 gsf), 2,262,350 gsf of commercial space, almost the same amount of RALI space at 486,950 gsf, and up to 3,496 off-street parking spaces. The same buildings would be renovated and converted to residential, commercial, and/or RALI space as in the Maximum Residential Scenario. Total development would be about 4,179,300 gsf. The same 9 acres of open space is proposed as for the Maximum Residential Scenario.

For analysis purposes, it has been assumed that 33 percent of the total number of residential units under each scenario would be studio or one-bedroom units and 67 percent would be two or more bedrooms for each scenario.

[15] For transportation analysis purposes, the RALI space has been assumed to include production/distribution/repair (PDR) space, retail uses, and restaurant uses. The PDR space accounts for the light industrial uses and a portion of the arts uses that are not classed as retail. Restaurant and retail uses have trip generation and distribution rates that are different from each other and from light industrial and office uses and therefore needed to be separated from the other RALI uses.

Parcels C-1 and C-2 that could be developed with District Parking rather than residential or commercial uses have been analyzed as residential in the Maximum Residential Scenario and as residential and commercial in the Maximum Commercial Scenario to provide the highest amount of trip generation for each scenario. Rooftop open space has been assumed for these two parcels in both the Maximum Residential Scenario and Maximum Commercial Scenario

Transportation Improvements Assumed in the Analysis

Chapter 2, Project Description, summarizes the transportation and circulation improvements that are included in the Proposed Project, and presents the Transportation Plan, which includes a discussion of TDM strategies to discourage the use of automobiles and encourage transit and other modes of transportation. The roadway network improvements, transit improvements, bicycle circulation improvements, pedestrian circulation improvements, on-street loading provisions, and the TDM Plan that are assumed in the transportation and circulation analyses of the Proposed Project are reiterated and expanded on below.

Roadway Network Improvements

The project site would be accessible via Illinois Street at 20th Street, at 22nd Street, and at a new 21st Street connection. The existing 20th Street and 22nd Street rights-of-way within the project site would be improved. Three new internal north-south streets are proposed to break the site into more typical city blocks, these are, Michigan Street, Louisianan Street, and Maryland Street (see Figure 2.5: Proposed SUD Land Use Program, in Chapter 2, Project Description, p. 2.22). All streets would have sidewalks, ranging from 9 to 18 feet wide, all of which would have a minimum throughway of at least 6 feet. All streets except the portion of new Louisiana Street between 20th and 21st streets would be two-way with a single travel lane in each direction. That block of Louisiana Street would be one-way southbound with a single travel lane. Streets are proposed to be designed to the minimum width feasible to calm traffic and increase pedestrian safety while still accommodating fire trucks, transit vehicles, deliveries, and other required design vehicles – generally, between 27 and 38 feet in length. No improvements are proposed outside of the project site, other than signalization of the intersection of Illinois Street with 21st Street.

The Proposed Project would include a shared public way on Maryland Street between 21st Street and 22nd Street. This shared street would have limited vehicular traffic and would give priority to pedestrians over automobiles. This street would consist of a single shared paved surface with no curbs or gutters. The street would include raised domes, or another similar feature, to delineate the boundary between the pedestrian zone and traffic to allow for safe travel by those with visual impairment. Automobiles could access it from the adjoining streets by a curb-cut similar to a typical driveway. The proposed shared public way would allow for temporary closures of the street to vehicular traffic for markets and events. The shared public way is adjacent to the open space connecting to the Blue Greenway and the San Francisco Bay. The Blue Greenway is the

portion of the San Francisco Bay Trail that extends between Mission Creek and the southern City limits, through the Proposed Project, as discussed in "Bicycle Circulation Improvements" below.

Transit Improvements

The overall transit network serving the Proposed Project is shown in Figure 2.16: Proposed Roadway Network, in Chapter 2, Project Description, p. 2.50. No changes to the Muni system are proposed, although 22nd Street has been designed such that Muni could directly serve the project site if SFMTA chose to re-route an existing line, such as the 48 24th Street.

The Proposed Project would include a shuttle service, to be operated and maintained by a Pier 70 Transportation Management Agency (TMA), to connect the Pier 70 Mixed-Use District to regional transit hubs, like the Fourth & King Caltrain Station and 16th Street / Mission Street BART station.[16] Although the shuttle would not be operated by a transit agency, such as SFMTA, the shuttle is intended to improve connectivity for regional transit use; the shuttle service is not intended to replicate or duplicate Muni service for local trips. The shuttle service is part of the TDM Plan discussed below. It would be operated by the TMA through a third-party service provider and would have no fare associated with it. The TMA would be led by a board of directors that could include the Port, SFMTA, and representatives of various buildings constructed at the site. Exact routes and operating schemes would be determined at a later time, depending on factors such as peak period traffic congestion along specific streets and BART and Caltrain service plans, and schedules at specific stations. However, the service would be provided at a minimum of every 15 minutes during the extended weekday commute periods (7:00 a.m. to 10:00 a.m. and 3:00 p.m. to 7:00 p.m.) and would serve both trips leaving and accessing the project site during each peak period.

Bicycle Circulation Improvements

The bicycle circulation network in the vicinity of the Proposed Project, including improvements associated with the Proposed Project, is shown in Figure 2.18: Proposed Bicycle Network, in Chapter 2, Project Description, p. 2.54. The Proposed Project would include a separated bicycle and pedestrian facility along 20th Street at the water's edge to extend the Bay Trail/Blue Greenway continuously along the shore of the site. At the northern end, the Bay Trail would extend via 20th Street to Georgia Street and 19th Street. At the southern end, the trail would temporarily access Illinois Street via 22nd Street, but would be designed to connect to any future extension of the Bay Trail south of the project site. Class II bicycle lanes and Class III shared lanes are proposed throughout the Proposed Project. No improvements are proposed outside of the project site.

[16] A TMA is generally an organization of residents and/or businesses formed to promote or operate transportation programs for their members.

Pedestrian Circulation Improvements

Minimum sidewalk widths have been proposed for each street, ranging from 9 feet to 18 feet. The Bay Trail/Blue Greenway would extend through the project site and serve pedestrians as well as bicyclists, as noted above under "Bicycle Circulation Improvements." Curb extensions are planned at key locations on corners and mid-block locations wherever feasible in order to increase pedestrian visibility, shorten crossing distance, and decrease vehicle speeds. No improvements are proposed outside of the project site, except for signalization of the intersection of Illinois Street with 21st Street, which would also include construction of new curb ramps.

Loading Supply

Michigan Street, Louisiana Street, and new 21st Street are proposed to be designed as primary on-street loading corridors, with heavy loading (trucks up to 40 feet long) accommodated at Michigan Street and Louisiana Street near the Historic Core.

On- or off-street loading spaces would be required for each use based on the square footage of the buildings. All residential and arts/light industrial buildings greater than 50,000 square feet would have one to two loading spaces, which could be on- or off-street. Retail uses greater than 50,000 square feet would typically have one off-street loading space per every 25,000 square feet of gross leasable area. Commercial uses would typically have one to three off-street loading spaces. All buildings less than 50,000 square feet would use on-street loading.

Generally, the freight loading requirements for retail uses would be similar to the Planning Code requirements for retail uses in the Eastern Neighborhoods Mixed-Use District. The Proposed Project's freight loading requirements for commercial and RALI uses generally would be less than the requirements in the Planning Code for the Eastern Neighborhoods Mixed-Use District. The Proposed Project's freight loading requirements for residential uses would be similar to requirements in the Planning Code for residential development in the Downtown Residential District – the only portion of the City with residential off-street freight loading requirements in the Planning Code.

On-street loading spaces would be able to accommodate WB-40 vehicles (wheelbase of 40 feet) and would be a minimum of 75 feet long. Off-street loading spaces would be a minimum of 12 feet wide, 14 feet high, and 35 feet long, consistent with requirements in the Planning Code. The Maximum Residential Scenario would provide 28 off-street loading spaces and the Maximum Commercial Scenario would provide 25 off-street loading spaces.

There are no specific passenger loading supply requirements and no specific provisions for passenger loading have been identified. However, individual buildings would be able to apply to

SFMTA for a passenger loading zone permit in which on-street parking spaces could be converted to a white "passenger loading" zone.

Transportation Demand Management Plan

The Proposed Project includes a TDM Plan (within the Transportation Plan) that provides a comprehensive strategy to manage the transportation demands it would create. The TDM Plan incorporates transportation planning principles to address the transportation needs of the Proposed Project consistent with San Francisco's Transit First Policy, *Better Streets Plan*, *Climate Action Plan*, and Transportation Sustainability Program and associated policies; to encourage use of transit and other modes of transportation; and to discourage use of single-occupancy automobiles or automobiles in general. The improvements and TDM Plan would be the same for both the Maximum Residential Scenario and the Maximum Commercial Scenario.

While these measures are included as part of the Proposed Project, no attempt has been made to quantify the effect of specific measures at reducing automobile travel in the analysis. This discussion presents two sets of TDM measures: (1) those that are part of the Proposed Project, as described in the TDM Plan and summarized below, and (2) those that may be implemented as Mitigation Measures for Air Quality impacts as part of Mitigation Measure M-AQ-1f in Section 4.G, Air Quality, pp. 4.G.47-4.G.50. Although no specific TDM measures are required as part of Mitigation Measure M-AQ-1f, the measure does require the Proposed Project to supplement the measures in the TDM Plan with additional measures to achieve a specific reduction in overall project-generated vehicle trips compared to the forecasts in this chapter.

Key strategies in the TDM Plan include the following:

- Transportation Management Agency. The Project's TDM Plan would be administered and maintained by a TMA. The TMA for the Pier 70 Mixed-Use District Project would be funded by project-generated sources and would be responsible for working with future subtenants of the project site (e.g., employers, residents, etc.) to ensure that they are actively participating in the TDM program. Upon agreeing to lease property at the project site, subtenants would become "members" of the TMA and be able to take advantage of the TDM program services provided through the TMA. The TMA would be led by a board of directors that would be staffed by representatives from diverse stakeholders that could include the Port (as the current property owner), SFMTA (as the public agency responsible for oversight of transportation in the City), and representatives of various buildings that have been constructed at the site. The board of directors may also include representatives from commercial office tenants or homeowners' associations.
- On-site Transportation Coordinator. Day-to-day operations of the TMA would be handled by staff who would work under the high-level direction provided by the board of directors. The lead staff position would serve as the on-site Transportation Coordinator (TC), functioning as the TMA's liaison with subtenants in the implementation of the TDM program and as the TMA's representative in discussions with the City. Duties would include operation of the TMA website and ridematching services, distribution of

transportation information packets, preparation of TDM plans for large special events, development and management of a rewards program for employees who do not drive on their commute, monitoring and reporting, and management of the Proposed Project's shuttle service. The TC position would be funded by the TMA, which is funded through project-generated sources.

- Shuttle service. The TMA would be responsible for provision of shuttle service between the project site and local and regional transit hubs. The TMA is likely to provide this service through a contractual agreement with a third-party shuttle operator, similar to other existing shuttle services. The TMA would be responsible for devising the proposed service plan and ensuring that the proposed connecting shuttle service is operated in a matter that maximizes intermodal coordination with BART and Caltrain. Routes, vehicle size, and frequency would be augmented over build-out of the Proposed Project to respond to demand.
- Bikesharing stations to serve the project site. The TMA would work collaboratively with SFMTA and Bay Area Bike Share (BABS) representatives to finalize the design, location, installation timeline, and funding arrangements for both initial installation and ongoing operation and maintenance of any proposed bikesharing station, if the established BABS program expands into the surrounding area.
- Supplementary components. Supplementary components such as provision of passenger amenities, real-time occupancy data for shared parking facilities, on-street carshare spaces, unbundled parking for residents, and preferential treatment for high-occupancy vehicles would be coordinated and provided through the TMA.

In addition to the day-to-day TDM measures included as part of the Proposed Project, additional strategies may be appropriate for special events held at Pier 70. As noted earlier, events at the project site with the Proposed Project would not be as large as the larger events currently held at the site. However, events occurring approximately three times per month could have an attendance of approximately 500 to 750 people, while larger events, occurring approximately four times per year, could have attendance of up to 5,000 people.

As with how things operate under existing conditions, as explained above on p. 4.E.8 events at the Pier 70 site currently require and would continue to require City permits, and event organizers would continue to develop event-specific TDM Plans to ensure that the flow of people into and out of the site would be managed similar to current conditions.

APPROACH TO ANALYSIS

The section presents the analysis methodologies, the approach to developing the travel demand forecasts for the two project scenarios, and the cumulative 2040 conditions including reasonably foreseeable development projects and transportation improvements.

Analysis Methodology

This section presents the methodology for analyzing transportation impacts and information considered in developing travel demand for the Proposed Project. The impacts of the Proposed

Project on the surrounding roadways were analyzed using the guidelines set forth in the *SF Guidelines* and Planning Commission Resolution 19579 and supporting materials, including a Categorical Exemption Determination, incorporated herein by reference, all of which provide direction for analyzing transportation conditions and identifying the transportation impacts of a proposed project in San Francisco.

The analysis of the Proposed Project was conducted for the Baseline Conditions described above under the "Baseline Conditions" discussion, pp. 4.E.28-4.E.33, plus full build-out of each of the Proposed Project scenarios, and for future year 2040 conditions with build-out of each of the Proposed Project scenarios. The baseline plus project conditions assess the near-term effects of the two scenarios, while the 2040 cumulative plus project scenarios assess the long-term effects of these scenarios in combination with other known and forecast development. The year 2040 was selected because it is the latest year that travel demand forecasts are available from the Transportation Authority travel demand forecasting model, SF-CHAMP.

Senate Bill 743 and Public Resources Code Section 21099

As discussed in Section 4.A, Introduction to Chapter 4, pp. 4.A.3-4.A.5 and above in the Regulatory Framework subsection, p. 4.E.34, Senate Bill 743 amended CEQA by adding Public Resources Code Section 21099 regarding the analysis of parking impacts for certain urban infill projects in transit priority areas.[17] Accordingly, parking is no longer to be considered in determining if a project has the potential to result in significant environmental effects for projects that meet all three criteria established in the statute. The Proposed Project meets all of the criteria, and thus the transportation impact analysis does not consider the adequacy of parking in determining the significance of project impacts under CEQA. However, the Planning Department acknowledges that parking conditions may be of interest to the public and the decision-makers. Therefore, this EIR presents a parking demand analysis for informational purposes and considers any secondary physical impacts associated with constrained supply (e.g., queuing by drivers waiting for scarce on-site parking spaces that affects the public right-of-way) as applicable in the following transportation impact analysis.

Additionally, CEQA Section 21099(b)(1) requires that OPR develop revisions to the *CEQA Guidelines* establishing criteria for determining the significance of transportation impacts of projects within transit priority areas that promote the "reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses." Potential

[17] A "transit priority area" is defined as an area within one-half mile of an existing or planned major transit stop. A "major transit stop" is defined in California Public Resources Code Section 21064.3 as a 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 frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods. A map of San Francisco's Transit Priority Areas is available online at http://sfmea.sfplanning.org/Map%20of%20San%20Francisco%20Transit%20Priority%20Areas.pdf.

metrics OPR may recommend to measure transportation impacts may include vehicle miles traveled, vehicle miles traveled per capita, automobile trip generation rates, or automobile trips generated. CEQA Section 21099(b)(2) states that upon certification of the revised *CEQA Guidelines* for determining transportation impacts pursuant to Section 21099(b)(1), automobile delay, as described solely by level of service (LOS) or similar measures of vehicular capacity or traffic congestion, shall not be considered a significant impact on the environment under CEQA. Section 21099(c) provides that OPR also may adopt guidelines with alternative metrics to use for traffic levels of service for transportation impacts that apply outside transit priority areas.

In January 2016, OPR published for public review and comment a *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA*[18] (proposed transportation impact guidelines) recommending that transportation impacts for projects be measured using vehicle miles traveled (VMT) as the primary metric. VMT measures the amount and distance that a project might cause people to drive, accounting for the number of passengers within a vehicle.

On March 3, 2016, the San Francisco Planning Commission, by Resolution No. 19579, adopted VMT as the principal criteria for determining transportation impacts. The Planning Commission's resolution:

- Found that OPR's proposed transportation impact guidelines, as described in the OPR Technical Advisory,[19] provide substantial evidence that VMT is an appropriate standard to use in analyzing transportation impacts to protect environmental quality and a better indicator of greenhouse gas, air quality, and energy impacts than automobile delay;
- Found that automobile delay, as described solely by LOS or similar measures of vehicular capacity or traffic congestion, will no longer be considered a significant impact on the environment pursuant to CEQA, because it does not measure environmental impacts and therefore it does not protect environmental quality;
- Directed the Environmental Review Officer to remove automobile delay as a factor in determining significant impacts pursuant to CEQA for all guidelines, criteria, and list of exemptions, and to update the Transportation Impact Analysis Guidelines for Environmental Review and Categorical Exemptions from CEQA to reflect this change; and
- Directed the Environmental Planning Division and Environmental Review Officer to replace automobile delay with VMT criteria which promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses that are consistent with proposed and forthcoming changes to the *CEQA Guidelines* by OPR.

[18] This document is available online at: https://www.opr.ca.gov/s_sb743.php.

[19] *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA: Implementing Senate Bill 743*, State of California, Governor's Office of Planning and Research, January 20, 2016. Available online at https://www.opr.ca.gov/s_sb743.php.

In connection with the adoption of Planning Commission Resolution No. 19579 adopting VMT to measure transportation impacts, for localized circulation impact analysis (e.g., to analyze potential impacts to walking, bicycling, riding transit, freight and passenger loading, emergency vehicle access, construction site circulation and access, and compliance with local plans, ordinances and policies related to transportation) the Planning Department continues to use trip generation rates and trip distribution identified in the SF Guidelines.[20]

Planning Commission Resolution No. 19579 became effective immediately for all projects that have not received a CEQA determination and all projects that have previously received CEQA determinations but require additional environmental analysis.

Accordingly, this EIR contains a focused discussion of whether the addition of project vehicle trips may impact bicycle or pedestrian safety, transit operations, and emergency and private vehicle access, but does not include a discussion of potential impacts to drivers associated with automobile delay.

Automobile delay may be considered by decision-makers, independent of the environmental review process, as part of their decision to approve, modify, or disapprove the Proposed Project.

Prior to the Planning Commission's action on March 3, 2016, some projects, including the Pier 70 Mixed-Use District Project, were in the process of environmental review, and had substantively completed draft Transportation Impact Studies using methodology and the LOS CEQA significance criteria formerly used by the San Francisco Planning Department (*2002 San Francisco Transportation Impact Analysis Guidelines for Environmental Review* [*SF Guidelines*]). The *Pier 70 Mixed-Use District Project Transportation Impact Study* (TIS) included as Appendix B to this EIR, has been updated to reflect the adopted change from LOS to VMT and the associated removal of automobile delay as a significance criterion. However, Section 7 of the TIS includes a discussion of LOS conditions, including intersections that are estimated to operate at or beyond LOS E or F under project and cumulative conditions, and improvement measures that would address such effects under those conditions. Although no longer part of the CEQA transportation impacts assessment, localized volumes are described in the TIS to inform transportation improvement projects proposed/agreed to by the project sponsor, and to help inform related topics such as air quality and noise.[21]

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[20] San Francisco Planning Department, *Executive Summary: Resolution Modifying Transportation Impact Analysis, Hearing Date: March 3, 2016*, Attachment E: *Screening Criteria for Circulation Analysis and Methodology for Travel Demand,* and Attachment F: *Methodologies, Significance Criteria, Thresholds of Significance, and Screening Criteria for Vehicle Miles Traveled and Induced Automobile Travel Impacts,* which includes an appendix from the San Francisco County Transportation Authority.

[21] See, e.g., Caltrans, *Local Development – Intergovernmental Review Program Interim Guidance: Implementing Caltrans Strategic Management Plan 2015-2020 Consistent with SB 743 (Steinberg, 2013),* approved Sept. 2, 2016, Appendix D, p. 2 ("increased traffic volumes from high-VMT

Vehicle Miles Traveled Analysis

As noted above, the Planning Commission's Resolution No. 19579 is consistent with the direction of CEQA Section 21099(b)(2), and OPR's proposed transportation impact guidelines. Moreover, it is based upon and consistent with the authority and deference CEQA provides to local agencies to identify the methodology to analyze and environmental impact.[22] Residential and office projects located in areas with low VMT, and that incorporate similar features (i.e., sufficient density, mix of uses, transit accessibility) will tend to exhibit similarly low VMT. OPR's Technical Advisory recognizes that there are various methods for assessing VMT, and specifically acknowledged the efficacy of a map-based screening approach. The City uses this approach.

San Francisco, and other lead agencies, such as Oakland and Pasadena, use maps illustrating areas that exhibit below threshold VMT to screen out projects that may not require a detailed VMT analysis. Under this approach, travel demand models or survey data provide the existing residential or office VMT, which can be modified for mixed use projects by using each use-based map as a screen for the respective use-portion of the project, to then develop maps illustrating VMT for different areas in the city. Thus, the maps demonstrate whether a proposed project is in a transportation-efficient location, (e.g., transit-oriented infill), with safe and adequate access to a multi-modal transportation system and key destinations, and that will help the city, region, and state reach their GHG reduction targets under AB 32.

This mapping approach for VMT screening has also been recently acknowledged in the Caltrans Local Development Intergovernmental Review Program, Interim Guidance, approved September 2, 2016. This Caltrans Guidance provides further support for use of a map-based screening approach. (The Interim Caltrans Guidelines replaces Caltrans' 2002 Guidelines, and is part of Caltrans' effort to support smart growth and efficient development. It is intended to help ensure that greenhouse gas emissions reduction, good community design, improved proximity to key destinations, and a safe multimodal transportation system are all integral parts of the land use decision-making process.)

The Transportation Authority uses SF-CHAMP to estimate VMT by private automobiles and taxis for different land use types within individual TAZs. Travel behavior in SF-CHAMP is calibrated by Transportation Authority staff based on observed behavior from the California Household Travel Survey 2010-2012, Census data regarding automobile ownership rates and county-to-county worker flows, and observed vehicle counts and transit boardings. SF-CHAMP

development and/or high speeds can exacerbate safety concerns . . . that may affect adjacent pedestrian facilities. Similarly, increasing traffic volumes at uncontrolled turn-movement points or in locations without adequate modal separation/refuge can increase the vulnerability for all modes, especially pedestrians and bicyclists").

[22] California Public Resources Code Section 21099(b)(1); 14 Cal. Code Regs., Section 15064(b).

uses a synthetic population, which is a set of individual actors that represents the Bay Area's actual population, who make simulated travel decisions for a complete day. The Transportation Authority uses tour-based analysis for office and residential uses, which examines the entire chain of trips over the course of a day, not just trips to and from the project. For retail uses, the Transportation Authority uses trip-based analysis, which counts VMT from individual trips to and from the project (as opposed to entire chain of trips). A trip-based approach, as opposed to a tour-based approach, is necessary for retail projects because a tour is likely to consist of trips stopping in multiple locations, and the summarizing of tour VMT to each location would over-estimate VMT.[23,24]

The following identifies thresholds of significance and screening criteria used to determine if a land use project or plan would result in significant impacts under the VMT metric.

For residential projects, a project would generate substantial additional VMT if it exceeds the regional household VMT per capita minus 15 percent. This metric is consistent with OPR's proposed transportation impact guidelines stating that a project would cause substantial additional VMT if it exceeds both the existing City household VMT per capita minus 15 percent and existing regional household VMT per capita minus 15 percent. In San Francisco, the City's average VMT per capita (8.4) is lower than the regional average (17.2). Therefore, the City average is irrelevant for the purposes of the analysis.

For office projects, a project would generate substantial additional VMT if it exceeds the regional VMT per employee minus 15 percent.

For retail projects, the Planning Department uses a VMT efficiency metric approach for retail projects: a project would generate substantial additional VMT if it exceeds the regional VMT per retail employee minus 15 percent.

For mixed-use projects, each proposed land use is evaluated independently, per the significance criteria described above.

This approach is consistent with CEQA Section 21099 and the thresholds of significance for other land uses recommended in OPR's *Revised Proposal on Updates to the CEQA Guidelines on*

[23] Retail travel is not explicitly captured in SF-CHAMP, rather, there is a generic "Other" purpose which includes retail shopping, medical appointments, visiting friends or family, and all other non-work, non-school tours. The retail efficiency metric captures all of the "Other" purpose travel generated by Bay Area households. The denominator of employment (including retail; cultural, institutional, and educational; and medical employment; school enrollment, and number of households) represents the size, or attraction, of the zone for this type of "Other" purpose travel.

[24] San Francisco Planning Department, Executive Summary: Resolution Modifying Transportation Impact Analysis, Appendix F, Attachment A, March 3, 2016.

Evaluating Transportation Impacts in CEQA[25] ("proposed transportation impact guidelines"). OPR described a 15 percent threshold below existing development as being "both reasonably ambitious and generally achievable" for the following reasons.

First, Section 21099/SB 743 states that the criteria for determining significance must "promote the reduction in greenhouse gas emissions." SB 743 also states the Legislature's intent that the analysis of transportation in CEQA better promote the State's goals of reducing greenhouse gas emissions. It cites in particular the reduction goals in the Global Warming Solutions Act and the Sustainable Communities and Climate Protection Act, both of which call for substantial reductions. The California Air Resources Board established long-term reduction targets for the largest regions in the tate that ranged from 13 to 16 percent.

Second, Caltrans has developed a statewide VMT reduction target in its Strategic Management Plan. Specifically, it calls for a 15 percent reduction in per capita VMT, compared to 2010 levels, by 2020.

Third, according to the California Air Pollution Control Officers Association (CAPCOA), 15 percent reductions in VMT are typically achievable at the project level in a variety of place types.[26]

Fourth, the *First Update to the AB 32 Scoping Plan* states, "[r]ecognizing the important role local governments play in the successful implementation of AB 32, the initial Scoping Plan called for local governments to set municipal and communitywide GHG reduction targets of 15 percent below then-current levels by 2020, to coincide with the statewide limit."[27]

The VMT significance standards, and a comparison of these standards to TAZ 559, in which the project site is located, are summarized in Table 4.E.11, Daily Vehicle Miles Traveled.

In addition to the map-based screening criterion, OPR has a Proximity to Transit Stations screening criterion that the City uses. OPR recommends that residential, retail, and office projects, as well projects that are a mix of these uses, proposed within 0.5 mile of an existing major transit stop (as defined by CEQA Section 21064.3) or an existing stop along a high quality transit corridor (as defined by CEQA Section 21155) would not result in a substantial increase in VMT. However, this presumption would not apply if the project would: have a floor area ratio of less than 0.75; (2) include more parking for use by residents, customers, or employees of the

[25] This document is available online at: https://www.opr.ca.gov/s_sb743.php, Page III:20.
[26] CAPCOA, *Quantifying Greenhouse Gas Measures*, 2010, p. 55. Available online at https://www.arb.ca.gov/cc/scopingplan/document/updatedscopingplan2013.htm.
[27] *First Update to the AB 32 Scoping Plan*, p. 113.

project than required or allowed, without a conditional use; or (3) is inconsistent with the applicable Sustainable Communities Strategy.[28]

Table 4.E.11 Daily Vehicle Miles Traveled

Land Use	Bay Area VMT		TAZ 559
	Regional Average	Regional Average minus 15%	
Households (Residential)	17.2	14.6	8.8
Employment (Office)	19.1	16.2	14.6
Visitors (Retail)	14.9	12.6	10.8

Source: San Francisco Planning Department, sftransportationmap.org, Accessed October 3, 2016.

OPR's proposed transportation impact guidelines do not provide screening criteria or thresholds of significance for other types of land uses, other than those projects that meet the definition of a small project, which does not apply to the Proposed Project. Therefore, the Planning Department provides additional screening criteria and thresholds of significance to determine if land uses similar in function to residential, office, and retail would generate a substantial increase in VMT.[29]

The Planning Department applies the Map-Based Screening and Proximity to Transit Station screening criteria to the following land use types:

- Tourist Hotels, Student Housing, Single Room Occupancy Hotels, and Group Housing – Trips associated with these land uses typically function similarly to and generate a comparable number of vehicle trips as multi-family residential uses. Therefore, these land uses are treated as residential for screening and analysis.
- Childcare, K-12 Schools, Medical, Post-Secondary Institutional (non-student housing), and Production, Distribution, and Repair (PDR) – Trips associated with these land uses typically function similarly to office. While some of these uses may have some visitor/customer trips associated with them (e.g., childcare and school drop-off, patient visits, etc.), those trips are often a side trip within a larger tour. For example, the visitor/customer trips are influenced by the origin (e.g., home) and/or ultimate destination (e.g., work) of those tours. Therefore, these land uses are treated as office for screening and analysis.

[28] A project is considered to be inconsistent with the Sustainable Communities Strategy if development is located outside of areas contemplated for development in the Sustainable Communities Strategy.

[29] San Francisco Planning Department, Executive Summary: Resolution Modifying Transportation Impact Analysis, Appendix F, Attachment A, March 3, 2016.

- Grocery Stores, Local-Serving Entertainment Venues, Religious Institutions, Parks, and Athletic Clubs – Trips associated with these land uses typically function similar to retail. Therefore, these types of land uses are treated as retail for screening and analysis.

Induced Automobile Travel Analysis

The Proposed Project is a mixed-use development project that includes the creation of an internal street network, pedestrian and bicycle facilities, traffic calming measures, and intersection traffic control devices including traffic signals and stop controls.

A proposed project would not result in a substantial increase in VMT if it would include the following components and features:

- Active Transportation, Rightsizing (aka Road Diet), and Transit Projects:
  - Infrastructure projects, including safety and accessibility improvements, for people walking or bicycling
  - Installation or reconfiguration of traffic calming devices
  - Creation of new or expansion of existing transit service
  - Creation of new or addition of roadway capacity on local or collector streets provided the project also substantially improves conditions for people walking, bicycling, and, if applicable, riding transit (e.g., by improving neighborhood connectivity or improving safety)
- Other Minor Transportation Projects:
  - Rehabilitation, maintenance, replacement and repair projects designed to improve the condition of existing transportation assets (e.g., highways, roadways, bridges, culverts, tunnels, transit systems, and bicycle and pedestrian facilities) and that do not add additional motor vehicle capacity
  - Installation, removal, or reconfiguration of traffic lanes that are not for through traffic, such as left, right, and U-turn pockets, or emergency breakdown lanes that are not used as through lanes
  - Installation, removal, or reconfiguration of traffic control devices, including Transit Signal Priority (TSP) features
  - Timing of signals to optimize vehicle, bicycle or pedestrian flow on local or collector streets
  - Addition of transportation wayfinding signage
  - Removal of off- or on-street parking spaces
  - Adoption, removal, or modification of on-street parking or loading restrictions (including meters, time limits, accessible spaces, and preferential/reserved parking permit programs)

Transit Analysis

The impact of additional transit ridership generated by the Proposed Project on local and regional transit providers was assessed using screenlines. The concept of screenlines is used to describe

the magnitude of travel to or from the greater Downtown area of San Francisco and to compare estimated transit volumes to available capacities. Screenlines are hypothetical lines that would be crossed by persons traveling between Downtown San Francisco and its vicinity (Superdistrict 1) to or from other parts of San Francisco and the region (Superdistricts 2, 3, and 4). Four screenlines have been established in Downtown San Francisco to analyze potential impacts of projects on Muni service: northeast, northwest, southwest, and southeast, with sub-corridors within each screenline. The bus routes and light rail lines used in this screenline analysis are listed in Table 4.E.6, p. 4.E.6, and are considered the major commute routes to and from the Downtown area. Other bus routes, such as those with greater than 10-minute headways, are not included due to their generally lower ridership. Three regional screenlines have been established around San Francisco to analyze impacts on the regional transit agencies: North Bay, East Bay, and Peninsula and South Bay. Both sets of screenlines focus on transit trips into Downtown San Francisco in the morning (inbound) and out of Downtown in the evening (outbound), because these are the most congested directions and times.

In addition, impacts on local Muni transit service were assessed by comparing the projected ridership from each of the project scenarios to the available transit capacity at the MLP of various transit corridors, described above in the subsection on Existing Conditions under the "Transit Facilities" discussion, p. 4.E.10. Capacity utilization for a.m. and p.m. peak hours was determined at the MLP for each route serving the study area. As explained in the "Existing Conditions" section, p. 4.E.11, the MLP for Muni routes is not located in the transportation study area for the Proposed Project but is located closer to Downtown. Capacity utilization relates the number of passengers per transit vehicle to the design capacity of the vehicle.[30] Muni has established a capacity utilization standard of 85 percent, which was applied to the a.m. and p.m. weekday conditions analyzed. Because of the high amount of non-residential use proposed in both the Maximum Residential and Maximum Commercial scenarios, it is expected that many of the trips would be toward the project site in the a.m. peak and away from the project site in the p.m. peak. This directionality is counter to the direction in which the Downtown screenlines are assessed. Furthermore, based on the location of the project site outside of the Downtown screenlines, it is likely that some of the transit trips generated by the Proposed Project that do travel in the peak directions would occur after the MLP, at points where capacity is available. The analysis has not been adjusted to account for this likelihood, and therefore provides a conservative result.

The existing ridership data for the routes providing direct access to the project site were analyzed based on each route's peak capacity utilization at its MLP, obtained from SFMTA's automated

[30] The capacity per vehicle includes both seated and standing capacity, where standing capacity is between 30 and 80 percent of seated capacity (depending upon the specific transit vehicle configuration). The capacity of a light rail vehicle is 119 passengers, the capacity of a historic streetcar is 70 passengers, and the capacity of a standard bus is 63 passengers.

passenger count (APC) database in September/October 2013. The baseline was then calculated using information about the development projects expected to be completed by the time the Proposed Project is undertaken. The transit Baseline Conditions reflect Muni capacity that is expected to be available when the Central Subway project is completed and the T Third short line loop has been constructed to provide additional capacity during peak periods.

Future 2040 cumulative transit ridership projections were developed based on transit growth projections prepared for the Transit Effectiveness Project. Forecast future hourly ridership demand was then compared to expected capacity based on the likely route and headway changes identified in the Muni Forward program to estimate capacity utilization under 2040 cumulative conditions. The transit person-trips forecast to be generated by the Proposed Project were compared to the 2040 cumulative conditions at the screenlines and on specific Muni routes serving the project site.

The Proposed Project was determined to have a significant transit impact if project-generated transit trips would cause screenlines operating at less than the capacity utilization standard under Baseline Conditions to operate at more than the capacity utilization standard. The Proposed Project would also have a significant impact if project-generated transit trips would add more than 5 percent to a screenline or an individual route that already exceeds the capacity utilization standard under Baseline Conditions.

The Proposed Project would have a significant cumulative impact if the addition of Project trips to a Muni screenline or individual route would cause capacity utilization to exceed the 85 percent standard or would add more than 5 percent to a screenline or an individual route that would exceed the 85 percent capacity utilization standard under cumulative conditions without the Proposed Project.

Pedestrian Analysis

Pedestrian trips generated by the Proposed Project include walking trips to and from nearby land uses and to and from the local transit stops and the 22nd Street Caltrain station. A qualitative assessment of pedestrian conditions was conducted to determine whether pedestrian facilities would be adequate to accommodate pedestrian trips and whether any conditions hazardous to pedestrians would be created. No quantitative analysis was performed.

Bicycle Analysis

The transportation analysis includes a qualitative assessment of bicycle conditions as they relate to the project site and bicycle parking, and to bicycle circulation in the transportation study area. No quantitative analysis was performed. The analysis discusses bicycle safety and potential conflicts with traffic. The Proposed Project would result in a significant impact if it would

adversely affect bicycle facilities in the project study area or would create new hazardous conditions for bicycling.

Loading Analysis

The analysis of loading conditions includes quantification of loading demand during the peak hour of loading activities and a comparison of that demand to proposed on- and off-street loading facilities located within the project site. The Proposed Project would have a significant impact if it would result in a loading demand that could not be accommodated within proposed facilities such that potentially hazardous conditions for pedestrians or bicycles were created or substantial traffic or transit delay would occur.

Emergency Access

The qualitative discussion of emergency access addresses access to the project site and access for emergency vehicles within the planned circulation pattern.

Construction Analysis

The construction impact evaluation addresses temporary construction-related traffic from construction workers and materials delivery.

Parking Conditions

As explained in Section 4.A, Introduction to Chapter 4, p. 4.A.3-4.A.5, the EIR does not consider the adequacy of the parking supply in determining the significance of impacts of the Proposed Project. Because parking conditions are of interest to the public and decision-makers, a parking demand analysis is presented for informational purposes. The parking analysis quantifies the Proposed Project's parking demand under the Maximum Residential Scenario and the Maximum Commercial Scenario in relation to the proposed parking supply pursuant to the maximum permitted parking in the *Design for Development*, Section 5.4, Off-Street Parking, p. 152.

Travel Demand Analysis

Travel demand refers to the new vehicle, transit, bicycle, and pedestrian traffic that would be generated by the Proposed Project. Forecasts of travel demand from the Proposed Project development scenarios are presented in detail in a Travel Demand Memorandum, which is summarized here.[31] The forecasts are based on methodology in the *SF Guidelines* and supplemented with information that accounts for the large-scale and mixed-use qualities of the

[31] Adavant Consulting, *Pier 70 Special Use District Project – Estimation of Project Travel Demand*, September 4, 2015 (hereinafter "Travel Demand Memorandum").

Proposed Project. No "discount" was taken for trips associated with existing uses on the project site; therefore, the resulting travel demand for the Proposed Project scenarios is conservative.

Trip Generation

The first step in calculating travel demand is to determine the person-trip generation rate. Internal capture rates and mode splits are then applied to the person-trip generation rate.

The person-trip generation estimates for the two project scenarios include residents, employees, and visitors to the proposed development. The weekday daily and p.m. peak hour person-trip generation for the proposed uses at Pier 70 are based on the appropriate rates in Table C-1 in the *SF Guidelines*, except for person-trip generation by the Open Space, which was calculated based on trip rates contained in *Trip Generation*, published by the Institute of Transportation Engineers (ITE).[32] Trip generation has also been estimated for the weekday a.m. peak hour based on trip generation rates for the a.m. peak hour developed for this study using information obtained from ITE. The Proposed Project includes open space elements that would likely have special events ranging from a few hundred people a few times per month and up to approximately 5,000 people approximately four times per year. Because these events would be relatively infrequent and unlikely to occur during the typical weekday peak hours, they are not included in the travel demand calculations. However, the standard TDM measures that are part of the Proposed Project's TDM Plan would remain in place during events, and would serve to reduce the severity of effects on area transportation. Additionally, as noted above, events would require permits from the Port, and in some cases, the City. As part of the permitting process, the event sponsor must include a plan for managing travel to and from the event safely and with minimal effect to the surrounding neighborhoods. These management strategies may include special event shuttles, promotion of transit services, and parking management, such as valet parking.

Table 4.E.12: Person-Trip Generation (Internal and External Trips) presents the weekday daily, a.m. peak hour, and p.m. peak hour person-trip generation forecasts for the Proposed Project scenarios. The table presents trips that would occur within the project site (internal trips) and person-trips that would begin or end outside of the project site (external trips).

The Maximum Residential Scenario would generate 131,359 total daily person-trips on a typical weekday, 10,605 person-trips in the weekday a.m. peak hour, and 15,869 person-trips during the weekday p.m. peak hour (including both internal trips to the project site and external trips to or from locations outside of the project site). Of the total daily person-trips, 114,863 trips are attributable to the 28-Acre Site and 16,496 trips are attributable to the Illinois Parcels.

[32] Institute of Transportation Engineers, *Trip Generation*, 9th Edition, 2012.

Table 4.E.12: Person-Trip Generation (Internal and External Trips)

Land Use	Maximum Residential Scenario				Maximum Commercial Scenario			
	Size	Daily	A.M. Peak Hour	P.M. Peak Hour	Size	Daily	A.M. Peak Hour	P.M. Peak Hour
Residential (studio/1 bedroom)	1,000 units	7,500	1,067	1,298	545 units	4,088	582	707
Residential (2+ bedrooms)	2,025 units	20,250	2,882	3,503	1,100 units	11,000	1,565	1,903
Office	1,102,250 gsf	19,951	1,775	1,696	2,262,350 gsf	40,949	3,644	3,481
Light industrial and arts	143,110 gsf	2,590	231	220	143,110 gsf	2,590	231	220
General retail	269,495 gsf	40,424	941	3,638	275,075 gsf	41,261	961	3,714
Restaurant	67,375 gsf	40,425	3,657	5,457	68,765 gsf	41,259	3,733	5,570
Open Space	9 acres	219	51	57	9 acres	219	51	57
Total (internal + external trips)		**131,359**	**10,605**	**15,869**		**141,366**	**10,767**	**15,651**
Total from 28-Acre Site		114,863	8,977	13,531		121,077	9,047	13,185
Total from Illinois Parcels		16,496	1,628	2,338		20,289	1,720	2,466

Note:
Numbers may not sum to total due to rounding.

Source: Fehr & Peers, 2016; Adavant Consulting, 2015

The Maximum Commercial Scenario would generate 141,366 total daily person-trips on a typical weekday, 10,767 person-trips in the weekday a.m. peak hour, and 15,651 person-trips during the weekday p.m. peak hour (including both internal and external trips). The total daily person-trips are 121,077 trips from the 28-Acre Site and 20,289 trips from the Illinois Parcels.

The *SF Guidelines* do not provide a specific methodology to assess the number of trips that could remain within a large, mixed-use project site and would, therefore, be "double counted" with a literal application of the *SF Guidelines* trip generation methodology. Using sources including the National Cooperative Highway Research Program[33] and ITE[34] as an initial point of analysis and through an iterative process, appropriate internal trip capture rates were identified.

Similarly, the *SF Guidelines* do not provide for a methodology for estimating the number of "linked" trips, which are those trips that are made as intermediate stops on the way from an origin to a primary destination. Therefore, appropriate refinements to the standard travel demand analysis approach were made to account for the size and land use mix of the two Proposed Project scenarios, with their large proposed mixes of residential, retail, and office uses.

Table 4.E.13: Trip Generation Accounting for Internal Trips presents the weekday daily, a.m. peak hour, and p.m. peak hour internal and external person-trip generation forecasts for the Proposed Project. Internalization is dependent on the quantity and mix of uses, as well as the varying levels of activity they generate at various times of the day; as a result, the internalization percentage is different for each scenario and the peak periods. The Maximum Residential Scenario is estimated to generate a larger proportion and larger numbers of internal trips than would the Maximum Commercial Scenario on a daily basis and in the a.m. and p.m. peak hours. The internalization ratios selected were within the range of published observed internalization for various land uses published by the National Cooperative Highway Research Program and ITE, and are described more fully in the Travel Demand Memorandum.[35]

In the Maximum Residential Scenario, the Proposed Project would generate 107,059 external person-trips on a typical weekday, 8,809 external person-trips in the weekday a.m. peak hour, and 12,227 external person-trips during the weekday p.m. peak hour). Approximately 18.5 percent of daily person-trips are forecast to remain within the project site in the Maximum Residential Scenario.

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[33] Transportation Research Board, *Enhancing Internal Trip Capture Estimation for Mixed-Use Developments*, National Cooperative Highway Research Program Report 684, 2011.

[34] "Improved Estimation of Internal Trip Capture for Mixed-Use Development," ITE Journal, August 2010; and "Alternative Approaches to Estimating Internal Traffic Capture of Mixed-Use Project," ITE Journal, November 2011.

[35] Adavant Consulting, Travel Demand Memorandum.

Table 4.E.13: Trip Generation Accounting for Internal Trips

Scenario	Number and Proportion of Person-Trips[1]					
	Daily		A.M. Peak Hour		P.M. Peak Hour	
Maximum Residential Scenario						
Internal	24,300	18.5%	1,796	16.9%	3,643	23.0%
External	107,059	81.5%	8,809	83.1%	12,227	77.0%
Total	**131,359**	**100.0%**	**10,605**	**100.0%**	**15,870**	**100.0%**
Maximum Commercial Scenario						
Internal	14,099	10.0%	1,046	9.7%	2,844	18.2%
External	127,266	90.0%	9,721	90.3%	12,808	81.8%
Total	**141,365**	**100.0%**	**10,767**	**100.0%**	**15,652**	**100.0%**

Note:

[1] Numbers may not sum to total due to rounding

Sources: Fehr & Peers, 2016; Adavant Consulting, 2015

In the Maximum Commercial Scenario, the Proposed Project would generate 127,266 external person-trips on a typical weekday, 9,721 external person-trips in the weekday a.m. peak hour, and 12,808 external person-trips during the weekday p.m. peak hour. Approximately 10 percent of daily person-trips are forecast to remain within the project site in the Maximum Commercial Scenario.

As shown in Table 4.E.13, the Maximum Commercial Scenario would generate 20,207 (19 percent) more daily external person-trips than the Maximum Residential Scenario, 912 (10 percent) more external person-trips during the a.m. peak hour, and 581 (5 percent) more external person-trips during the p.m. peak hour.

Trip Distribution

The geographic distribution of project-generated residential trips was obtained from the *2009-2013 American Community Survey 5-Year Estimate for Census Tract 226*, which corresponds to the project site area, supplemented with information from the 1990 and 2000 U.S. Census. Trip distribution for office/PDR, restaurant, and retail uses was obtained from the *SF Guidelines* for land uses within Superdistrict 3 where the project site is located. Distributions are based on the origin/destination of the trip, and are separated into the four quadrants of San Francisco (Superdistricts 1 through 4), and the East Bay, North Bay, South Bay, and outside the region.

As shown in Table 4.E.14: Trip Distribution, the majority of the project-generated trips would be within San Francisco, with the greatest proportion of residential trips related to Superdistrict 1,

the northeast quadrant, and the greatest proportion of worker trips related to Superdistrict 3, the southeast quadrant. Worker trips to/from locations outside of San Francisco are nearly evenly divided between the East Bay and the Peninsula/South Bay. Visitor trips to/from the commercial uses would also be primarily within San Francisco, with the largest proportion traveling within Superdistrict 3. A substantial number of visitor trips from outside San Francisco would be to/from outside the region (12 percent of office/PDR/restaurant trips and 22 percent of retail trips). These patterns were used as the basis for assigning project-generated transit trips to individual transit lines for both project scenarios.

Table 4.E.14: Trip Distribution

Place of Trip End	Residential Trips[1]	Office/PDR/Restaurant Trips		Retail Trips	
		Workers[2]	Visitors[3]	Workers[2]	Visitors[4]
San Francisco	76.3%	53.2%	67.0%	53.2%	59.0%
Superdistrict 1 (Northeast Quadrant)	*53.4%*	*10.6%*	*17.5%*	*10.6%*	*12.5%*
Superdistrict 2 (Northwest Quadrant)	*3.8%*	*12.5%*	*14.0%*	*12.5%*	*8.0%*
Superdistrict 3 (Southeast Quadrant)	*15.3%*	*20.5%*	*28.5%*	*20.5%*	*34.5%*
Superdistrict 4 (Southwest Quadrant)	*3.8%*	*9.6%*	*7.0%*	*9.6%*	*4.0%*
East Bay	6.5%	18.4%	10.0%	18.4%	7.0%
North Bay	1.9%	5.9%	3.0%	5.9%	3.5%
South Bay	14.9%	20.6%	8.0%	20.6%	8.5%
Out of Region	0.4%	2.2%	12.0%	2.2%	22.0%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Notes:

[1] *2009-2013 American Community Survey 5-Year Estimate, Census* Tract 226, supplemented with information from the 1990 and 2000 U.S. Census (see summary in Appendix H).

[2] Adavant Consulting, Memorandum to San Francisco Planning Department, "Pier 70 Special Use District Project Estimation of Project Travel Demand," September 4, 2015, Appendix D in *Pier 70 Mixed-Use District Project Transportation Impact Study*, Fehr & Peers, December, 2016.

Source: Fehr & Peers, 2016; Adavant Consulting, 2015

Transit trips were assigned to specific routes based on the most direct transit route to and from the beginning and end of the trip. Trip assignments were made separately for the Maximum Residential Scenario and the Maximum Commercial Scenario.

Travel Modes

The project-generated person-trips were assigned to travel modes in order to determine the number of auto, transit, and "other" trips. The "auto" category includes those arriving at the site by private automobile and carpool, while the "transit" category includes those arriving to the site by means of public transportation. "Other" includes walking, bicycle, motorcycle, taxi, and additional modes.

Mode split information for the residential portion of each project scenario was based on data obtained from the U.S. Census, using data from Census Tract 226, in which the project site is located. Mode of travel assumptions for the office, retail, and restaurant uses were obtained from the *SF Guidelines* for employee and visitor trips using an average of Superdistrict 1 and Superdistrict 3. Adjustments were made to account for internal trips.

Table 4.E.15: Daily, A.M. Peak Hour, and P.M. Peak Hour Trip Generation by Mode for Maximum Residential Scenario, and Table 4.E.16: Daily, A.M. Peak Hour, and P.M. Peak Hour Trip Generation by Mode for Maximum Commercial Scenario, summarize the typical weekday daily, a.m. peak hour, and p.m. peak hour external trip generation by mode of travel for the Maximum Residential Scenario and the Maximum Commercial Scenario. Each table also shows the breakdown of travel between the 28-Acre Site and the Illinois Parcels for each scenario. The person-trips shown in the "Auto" columns reflect the total number of persons travelling by

Table 4.E.15: Daily, A.M. Peak Hour, and P.M. Peak Hour Trip Generation by Mode for Maximum Residential Scenario

Land Use	Person-Trips			
	Auto	**Transit**	**Other**	**Total**
Maximum Residential – Daily				
Residential (studio/1 bedroom)	2,444	1,859	573	4,875
Residential (2+ bedrooms)	6,599	5,018	1,546	13,163
Office	8,749	4,680	3,628	17,058
Light industrial and arts	1,136	608	471	2,215
General retail	17,527	5,129	12,109	34,765
Restaurant	17,527	5,130	12,109	34,766
Open Space	128	0	91	219
Total	***54,110 (50.5%)***	***22,423 (21.0%)***	***30,526 (28.5%)***	***107,059 (100.0%)***
28-Acre Site	47,821	19,347	27,390	94,558
Illinois Parcels	6,289	3,076	3,136	12,501

Table 4.E.15 Continued

Land Use	Person-Trips			
	Auto	**Transit**	**Other**	**Total**
Maximum Residential – A.M. Peak Hour				
Residential (studio/1 bedroom)	428	340	107	875
Residential (2+ bedrooms)	1,157	917	289	2,363
Office	876	541	181	799
Light industrial and arts	114	70	24	207
General retail	411	239	66	715
Restaurant	1,549	558	892	2,999
Open Space	30	0	21	51
Total	***4,564 (51.8%)***	***2,665 (30.3%)***	***1,579 (17.9%)***	***8,809 (100.0%)***
28-Acre Site	3,898	2,216	1,365	7,479
Illinois Parcels	666	449	215	1,330
Maximum Residential – P.M. Peak Hour				
Residential (studio/1 bedroom)	452	348	108	908
Residential (2+ bedrooms)	1,219	941	292	2,452
Office	767	462	127	1,357
Light industrial and arts	100	60	17	176
General retail	1,472	432	1,006	2,911
Restaurant	2,208	649	1,509	4,366
Open Space	33	0	24	57
Total	***6,251 (51.1%)***	***2,893 (23.7%)***	***3,083 (25.2%)***	***12,227 (100.0%)***
28-Acre Site	5,383	2,405	2,707	10,495
Illinois Parcels	868	487	376	1,732

Note:
Numbers may not sum to total due to rounding.

Sources: Fehr & Peers, 2016; Adavant Consulting, 2015

Table 4.E.16: Daily, A.M. Peak Hour, and P.M. Peak Hour Trip Generation by Mode for Maximum Commercial Scenario

Land Use	Person-Trips			
	Auto	Transit	Other	Total
Maximum Commercial – Daily				
Residential (studio/1 bedroom)	1,277	962	295	2,534
Residential (2+ bedrooms)	3,438	2,589	793	6,820
Office	19,392	10,606	8,904	38,901
Light industrial and arts	1,227	671	563	2,461
General retail	19,084	5,568	13,309	37,960
Restaurant	19,282	5,623	13,466	38,371
Open Space	128	0	91	219
Total	***63,827 (50.1%)***	***26,018 (20.5%)***	***37,421 (29.4%)***	***127,266 (100.0%)***
28-Acre Site	55,119	22,236	32,561	110,186
Illinois Parcels	8,708	3,782	4,860	17,350
Maximum Commercial – A.M. Peak Hour				
Residential (studio/1 bedroom)	228	180	57	465
Residential (2+ bedrooms)	614	485	153	1,252
Office	1,873	1,167	422	3,462
Light industrial and arts	118	74	27	219
General retail	483	287	104	874
Restaurant	1,741	623	1,033	3,397
Open Space	30	0	21	51
Total	***5,087 (52.3%)***	***2,818 (29.0%)***	***1,816 (18.7%)***	***9,721 (100.0%)***
28-Acre Site	4,315	2,353	1,551	8,219
Illinois Parcels	772	465	265	1,502

Table 4.E.16 Continued

Land Use	Person-Trips			
	Auto	**Transit**	**Other**	**Total**
Maximum Commercial – P.M. Peak Hour				
Residential (studio/1 bedroom)	199	146	44	389
Residential (2+ bedrooms)	536	393	118	1,047
Office	1,646	1,004	308	2,959
Light industrial and arts	104	64	19	187
General retail	1,646	481	1,141	3,268
Restaurant	2,469	722	1,711	4,902
Open Space	33	0	24	57
Total	***6,632 (51.8%)***	***2,809 (21.9%)***	***3,367 (26.3%)***	***12,809 (100.0%)***
28-Acre Site	5,668	2,365	2,901	10,934
Illinois Parcels	964	444	466	1,874

Note:
Numbers may not sum to total due to rounding.

Sources: Fehr & Peers, 2016; Adavant Consulting, 2015

automobile, not the total number of vehicle trips, as some vehicles would transport more than one person, each of whom is making a person-trip. Vehicle trip calculations are presented below.

Under the Maximum Residential Scenario during the weekday a.m. peak hour, the Proposed Project would generate 4,564 external person-trips by automobile (52 percent), 2,665 person-trips by transit (30 percent), and 1,579 person-trips by other modes, including walking (18 percent). During the weekday p.m. peak hour, the Maximum Residential Scenario would generate 6,251 external person-trips by automobile (51 percent), 2,893 person-trips by transit (24 percent), and 3,083 person-trips by other modes (25 percent). Overall, the Maximum Residential Scenario would generate 39 percent more external person-trips in the p.m. peak hour than in the a.m. peak hour, driven by the higher trip generation rate for retail and restaurant uses during the weekday p.m. peak hour.

Under the Maximum Commercial Scenario during the weekday a.m. peak hour, the Proposed Project would generate 5,087 external person-trips by automobile (52 percent), 2,818 person-trips by transit (29 percent), and 1,816 person-trips by other modes, including walking (19 percent). During the weekday p.m. peak hour, the Maximum Commercial Scenario would generate approximately 6,632 external person-trips by automobile (52 percent), 2,809 person-trips by

transit (22 percent), and 3,367 person-trips by other modes (26 percent). Overall, the Maximum Commercial Scenario would generate 32 percent more external person-trips in the p.m. peak hour than in the a.m. peak hour, driven by the higher trip generation rate for retail and restaurant uses during the weekday p.m. peak hour, as for the Maximum Residential Scenario.

As shown in Tables 4.E.15 and 4.E.16, the overall modal split for the two scenarios of the Pier 70 Mixed-Use District Project during the a.m. and p.m. peak hours would be relatively similar. As a percentage of the total, person-trips under the Maximum Residential Scenario would be approximately 1 to 2 percent more likely to travel by transit in the peak hours compared to the Maximum Commercial Scenario. Also, as shown in Tables 4.E.15 and 4.E.16, the overall daily transit use for the two scenarios would be very similar, at about 21 percent of total person-trips.

Average vehicle occupancies were applied to the auto person-trip data presented in Tables 4.E.15 and 4.E.16 to obtain vehicle trip estimates for the project scenarios. Average vehicle occupancy rates for the land uses in the project scenarios were obtained from the U.S. Census Bureau[36] for the census tract in which the project site is located, and from the *SF Guidelines* for land uses located within Superdistrict 1 and Superdistrict 3. The external vehicle trip generation results for the daily a.m. peak hour and p.m. peak hour are summarized in Table 4.E.17: Vehicle Trip Generation (External Trips).

The Maximum Residential Scenario would generate 31,016 external daily vehicle trips on a typical weekday, 3,254 external vehicle trips (60 percent inbound / 40 percent outbound) during the a.m. peak hour, and 3,930 external vehicle trips (48 percent inbound / 52 percent outbound) during the p.m. peak hour. The 28-Acre Site would generate the majority of the vehicle trips, with approximately 26,865 daily vehicle trips, 2,726 a.m. peak hour vehicle trips, and 3,309 p.m. peak hour vehicle trips. The Illinois Parcels would generate approximately 4,151 daily vehicle trips, 528 a.m. peak hour vehicle trips, and 621 p.m. peak hour vehicle trips.

The Maximum Commercial Scenario would generate 34,790 external daily vehicle trips on a weekday, 3,438 external vehicle trips (73 percent inbound / 27 percent outbound) during the a.m. peak hour, and 3,924 external vehicle trips (37 percent inbound / 63 percent outbound) during the p.m. peak hour. Similar to the Maximum Residential Scenario, the 28-Acre Site would generate the majority of the vehicle trips under the Maximum Commercial Scenario, with approximately 29,734 daily vehicle trips, 2,884 a.m. peak hour vehicle trips, and 3,317 p.m. peak hour vehicle trips. The Illinois Parcels would generate approximately 5,056 daily vehicle trips, 554 a.m. peak hour vehicle trips, and 607 p.m. peak hour vehicle trips.

[36] U.S. 2009-2013 American Community Survey 5-Year Estimates. Vehicle occupancy data were obtained from Census Tract 226, which corresponds to the area that includes the project site.

Table 4.E.17: Vehicle Trip Generation

Land Use	Vehicle Trips		
	Daily	**A.M. Peak Hour**	**P.M. Peak Hour**
Maximum Residential Scenario			
Residential (studio/1 bedroom)	2,179	382	403
Residential (2+ bedrooms)	5,883	1,031	1,087
Office	4,871	602	525
Light industrial and arts	632	78	68
General retail	8,664	285	726
Restaurant	8,664	835	1,089
Open Space	122	41	32
Total	***31,016***	***3,254***	***3,930***
Inbound	15,508 (50%)	1,951 (60%)	1,883 (48%)
Outbound	15,508 (50%)	1,303 (40%)	2,047 (52%)
28-Acre Site	26,865	2,726	3,309
Illinois Parcels	4,151	528	621
Maximum Commercial Scenario			
Residential (studio/1 bedroom)	1,139	204	177
Residential (2+ bedrooms)	3,065	548	478
Office	10,775	1,290	1,130
Light industrial and arts	682	82	71
General retail	9,453	337	814
Restaurant	9,554	938	1,221
Open Space	122	41	32
Total	***34,790***	***3,438***	***3,924***
Inbound	17,395 (50%)	2,506 (73%)	1,459 (37%)
Outbound	17,395 (50%)	933 (27%)	2,465 (63%)
28-Acre Site	29,734	2,884	3,317
Illinois Parcels	5,056	554	607

Note:
Numbers may not sum to total due to rounding.

Source: Fehr & Peers, 2016; Adavant Consulting, 2015

The Maximum Commercial Scenario would generate approximately 3,774 (13 percent) more daily external vehicle trips than would the Maximum Residential Scenario, 184 (6 percent) more external vehicle trips during the a.m. peak hour, and 6 fewer external vehicle trips during the p.m. peak hour.

Freight Delivery and Service Vehicle Demand

The delivery/service vehicle demand forecasts for the Proposed Project scenarios use the methodology and truck trip generation rates presented in the *SF Guidelines*. Delivery/service vehicle demand is based on the types and amount of land uses. As shown in Table 4.E.18: Delivery/Service Vehicle Trips and Loading Demand, the Maximum Residential Scenario would generate approximately 642 daily delivery/service vehicle trips consisting primarily of small trucks and vans. This would correspond to a demand for 30 loading spaces during an average hour of loading activities and 37 loading spaces during the peak hour of loading activities.

Table 4.E.18: Delivery/Service Vehicle Trips and Loading Demand

Land Use	Size	Daily Truck Trip Generation Rate[1]	Daily Truck Trip Generation	Average Hour Loading Space Demand	Peak Hour Loading Space Demand
Maximum Residential Scenario					
Residential	3,025 units	0.03	79	4	5
Office/PDR	1,102,250 gsf	0.21	262	12	13
Retail	269,495 gsf	0.22	59	3	3
Restaurant	67,375 gsf	3.60	243	11	14
Total	**-**	**-**	**642**	**30**	**37**
Maximum Commercial Scenario					
Residential	1,645 units	0.03	43	2	2
Office/PDR	2,262,350 gsf	0.21	505	23	29
Retail	275,075 gsf	0.22	61	3	4
Restaurant	68,765 gsf	3.60	248	11	14
Total	**-**	**-**	**856**	**40**	**50**

Notes:
Numbers may not sum to total due to rounding.
[1] *SF Guidelines*, Table H-1.

Sources: SF Guidelines, 2002; Fehr & Peers, 2016; Adavant Consulting, 2015

The Maximum Commercial Scenario would create a greater number of daily truck trips and a greater demand for loading spaces. This scenario would generate approximately 856 daily

truck/service vehicle trips, corresponding to a demand for 40 loading spaces during an average hour and 50 loading spaces during the peak hour of loading demand.

Future 2040 Cumulative Transportation Methodology

Cumulative SB 743 / VMT Methodology

OPR's proposed transportation impact guidelines do not specify a separate methodology for analyzing cumulative impacts using a VMT metric. Under CEQA, a project is considered to have "cumulatively considerable" impacts if the incremental effects of the individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects (CEQA Guidelines Section 15065(a)(3)).

VMT by its very nature is largely a cumulative impact. In general, no single project by itself would be sufficient in size to prevent the region or state from meeting its VMT (and GHG) reduction goals. Rather, an individual project's VMT contributes cumulatively to the physical secondary environmental impacts associated with the VMT resulting from the distance that existing, currently proposed and future projects would be expected to cause people to drive. VMT (and induced automobile travel) project-level significance thresholds are based on whether project VMT levels would be consistent with state and regional long-term greenhouse gas emission reduction targets and corresponding VMT per capita reduction targets.

The Planning Department has determined that a project's incremental VMT effects are not cumulatively considerable if the project site is located in an area where per capita VMT is more than 15 percent below the projected 2040 per capita regional averages for residential, office, and retail uses. This is an appropriate metric to assess cumulative VMT impacts, for the reasons set forth below.

As noted above, the Transportation Authority uses SF-CHAMP to estimate VMT for different land use types within individual TAZs. For the cumulative scenario, San Francisco 2040 cumulative VMT conditions, including cumulative VMT conditions for the TAZ in which the Project is located, were projected using a SF-CHAMP model run. This model run used the same methodology as outlined for existing conditions, but included forecasts of residential and job growth estimates and reasonably foreseeable transportation investments through 2040, based on the Association of Bay Area Governments (ABAG) most recent Projections (with projected citywide growth in population and employment allocated to individual TAZs by the Planning Department).

As stated above, OPR's proposed use of a VMT metric is intended to implement SB 743's mandate to establish criteria for determining the significance of projects' transportation impacts

that promote the "reduction of greenhouse gas emissions." Notably, San Francisco has been shown to have a significantly lower per-household carbon footprint than most other cities and counties in the San Francisco Bay Area region. Specifically, a December 2015 greenhouse gas consumption study published by the University of California, Berkeley, and funded by BAAQMD,[37] concluded that the average San Francisco household produces 38.7 metric tons of carbon dioxide equivalents (CO2e) annually, which is 12.7percent lower than the overall San Francisco Bay Area average household emissions of 44.3 metric tons of CO2e.

Maintaining per capita VMT that is 15 percent or more below the regional average is an essential component of the City's aggressive GHG reduction targets, detailed in Section H, Greenhouse Gas Emissions. Specifically, Ordinance No. 81-08, adopted in May 2008, established targets including: reduce GHG emissions by 25 percent below 1990 levels by 2017; reduce GHG emissions by 40 percent below 1990 levels by 2025; and reduce GHG emissions by 80 percent below 1990 levels by 2050 (which targets are consistent with – and in fact more ambitious than – those set forth in Governor Brown's recent EO B-30-15 by targeting a 40 percent reduction by 2025 rather than a 40 percent reduction by 2030).

Similarly, reducing per capita VMT is also a key component of the City's local GHG reduction plan, *Strategies to Address Greenhouse Gas Emissions*, recognized by BAAQMD as meeting the criteria of a qualified GHG Reduction Strategy. As further described in Section H, Greenhouse Gas Emissions), the City's Greenhouse Gas Reduction Strategy includes 30 specific regulations for new development that would reduce a project's GHG emissions. In fact, GHG reduction actions in San Francisco have resulted in a 23.3 percent reduction in GHG emissions in 2012 compared to 1990 levels, exceeding the year 2020 reduction goals in the BAAQMD's *Bay Area 2010 Clean Air Plan*, EOs S-3-05 and B-30-15, and AB 32. By complying with and exceeding Plan Bay Area targets, San Francisco is on a trajectory to meet the GHG reduction goals established by AB 32 and SB 375.

The Planning Department's cumulative significance threshold of 15 percent below 2040 per capita regional average VMT, and the proposed Project's VMT per capita, which is well below that threshold, are consistent with the adopted sustainability targets of the *Plan Bay Area*. The current *Plan Bay Area*, adopted on July 18, 2013 (Plan Bay Area 2013), is the region's Sustainable Communities Strategy for the San Francisco Bay Area 2013-2040. The current

[37] C. Jones, D. Kammen (2015). A Consumption-Based Greenhouse Gas Inventory of San Francisco Bay Area Neighborhoods, Cities and Counties: Prioritizing Climate Action for Different Locations. University of California, Berkeley, and Bay Area Air Quality Management District. Available online at http://www.baaqmd.gov/research-and-data/emission-inventory/consumption-based-ghg-emissions-inventory (last accessed 9/30/16).

update that began in Spring 2015 is called Plan Bay Area 2040, with release of the Draft Plan Bay Area 2040 and associated Draft EIR anticipated in March 2017.

Plan Bay Area 2013 is designed to reach greenhouse gas reductions established by CARB for the Bay Area region, which targets include a 7 percent per capita reduction by 2020 and a 15 percent per capita reduction by 2035.[38] Plan Bay Area 2013 identified 10 performance targets, which include both mandatory and voluntary targets. One of the mandatory performance targets requires the Bay Area to reduce its per-capita CO_2 emissions from cars and light duty trucks by 15 percent by 2040. Plan Bay Area achieves this milestone.[39] One of the voluntary targets includes decreasing automobile VMT per capita by 10 percent.[40] Plan Bay Area 2013 states that the average Bay Area resident traveled about 22 miles by car on a typical weekday in 2005; by 2040, the average resident is expected to travel 20 miles per day, a reduction of 9 percent. This near-achievement of the per-capita VMT target reflects the carefully targeted locations of envisioned housing and commercial development in Priority Development Areas with excellent transit service.[41] Even though Plan Bay Area achieves VMT reductions of 9 percent, which does not fully achieve the adopted 10 percent reduction target, Plan Bay Area nonetheless achieves the mandatory performance target to reduce per-capita CO_2 emissions from cars and light duty trucks by 15 percent by 2040[42].

Notably, the type of growth planned within the Port of San Francisco Priority Development Area (PDA), and growth within the City and County of San Francisco as a whole, will necessarily result in a population-based increased volume of VMT and GHG emissions, regardless of the City's GHG reduction targets and any new GHG reduction measures. Similarly, the population and economic activity associated with each project within the Port of San Francisco PDA, and within the City and County of San Francisco, will result in a total increase of VMT and GHG emissions. Certain projects may meet or exceed estimated population and/or employment growth identified for the Port of San Francisco PDA, while remaining within ABAG projections for the 2040 cumulative scenario. Notwithstanding such increased volume of GHG emissions and VMT, San Francisco complies with and exceeds Plan Bay Area GHG reduction targets, and is on a trajectory to meet the GHG reduction goals established by AB 32 and SB 375. Accordingly, consistency with *Plan Bay Area*, a plan designed to reach greenhouse gas reductions established by CARB for the Bay Area region, provides further support for the Planning Department's

[38] Association of Bay Area Governments and Metropolitan Transportation Commission, *Plan Bay Area*, July 18, 2013 (hereinafter "Plan Bay Area 2013," p. 4.
[39] Plan Bay Area 2013, p. 5.
[40] Ibid., p. 106.
[41] Ibid.
[42] Ibid., p. 5

adopted significance threshold for determining whether a project's incremental VMT effects are cumulatively considerable.

Future 2040 Transportation Network Improvements

There are several reasonably foreseeable improvements planned on the transportation network in the transportation study area. For the purposes of the transportation analysis for this EIR, the following transit improvements from Muni Forward were assumed to be in place as part of the 2040 cumulative conditions, in addition to those assumed to be in place for the Baseline Conditions:

- On the T Third light rail line, peak period headways would be reduced and trains would operate as two-car trains.[43]
- The 10 Townsend route would be rerouted off Townsend Street at Fourth Street. From Fourth Street, the route would extend through Mission Bay to new proposed street segments on Seventh Street between Mission Bay Boulevard and Hubble Street, on Hubble Street between Seventh and 16th streets, on 16th Street between Hubble and Connecticut streets, and on Connecticut Street between 16th and 17th streets. Peak period headways would be reduced from 20 to 6 minutes. Midday headways would be reduced from 20 to 12 minutes. The 10 Townsend would be renamed the 10 Sansome.
- The 48 Quintara/24th Street would operate all day from 48th Avenue to the Hunters Point Naval Shipyard. At 25th and Connecticut streets, this route would no longer follow the existing alignment and would change to follow the existing 19 Polk route to Hunters Point via Evans and Innes avenues. This would provide a new connection from the Mission District, Noe Valley, and the Sunset to Third Street and Hunters Point. The existing portion of the 48 Quintara/24th Street route east of Connecticut Street would be re-branded as the 58 as part of Muni Forward improvements.

Other transportation projects that were taken into consideration in the overall cumulative transportation analysis include the *San Francisco Bicycle Plan*, the Second Street Improvement Project, the Van Ness and Geary BRT Projects, and the Caltrain electrification program.

Future 2040 Development Projects

In addition to the transportation improvements listed above, the cumulative transportation impact analysis includes forecasted growth in jobs and employment in San Francisco by the year 2040. This growth includes, but is not limited to, the following reasonably foreseeable nearby development projects:

- Mission Bay Redevelopment Plans (the portions not yet built out)
- Candlestick Point-Hunters Point Shipyard Development Plan

[43] The assumptions for service increases as part of the Central Subway described herein are based on the Central Subway operating plan, which were developed and approved (including appropriate CEQA review) independent of and supersede assumptions for the T Third line outlined in Muni Forward.

- Development associated with nearby neighborhood plans, including the Eastern Neighborhoods Plans and the Western SOMA Plan
- Golden State Warriors Event Center and Mixed-Use Development
- Mission Rock Mixed-Use Project on Seawall Lot 337 and Pier 48
- Future Crane Cove Park
- India Basin
- Potrero Hope SF Master Plan

The cumulative transportation analysis is projection-based, rather than list-based; therefore, the projects listed here are simply examples of those that are accounted for in the growth forecast used in the travel demand forecasting model. The model includes a comprehensive projection of growth that is reasonably foreseeable in 2040, based on known and forecast development including growth under adopted area plans that could affect San Francisco's transportation network.

Cumulative Transportation Demand

Future year 2040 cumulative intersection traffic volumes were derived from outputs from the Transportation Authority's travel demand forecasting model (SF-CHAMP). The SF-CHAMP model is an activity-based travel demand model that has been validated to represent existing and future transportation conditions in San Francisco. The model predicts all person travels for a full day based on total and locations of population, housing units, and employment, which are then allocated to different periods throughout the day, using time of day sub-models. The model predicts person travel by mode for auto, transit, walk, and bicycle trips. The model also provides forecasts of vehicular traffic on regional freeways and major arterials and on the study area local roadway network, considering the available roadway capacity, origin-destination demand, and travel speeds when assigning the future travel demand to the roadway network.

Future year 2040 cumulative transit ridership projections were developed based on transit growth projections developed for the Transit Effectiveness Project and provided by the Planning Department. Forecast future hourly ridership demand was then compared to expected hourly capacity, as determined by the likely route and headway changes identified in Muni Forward, including those described above under the "Future 2010 Transportation Network Improvements" discussion, p. 4.E.74, to estimate capacity utilization under 2040 cumulative conditions.

IMPACT EVALUATION

CONSTRUCTION IMPACTS

Impact TR-1: Construction of the Proposed Project would not result in significant impacts on the transportation and circulation network because they would be of limited duration and temporary. (*Less than Significant*)

The discussion of construction impacts is based on currently available information from the project sponsors, summarized in Chapter 2, Project Description, and professional knowledge of typical construction practices in San Francisco. Build-out of the Proposed Project would occur in up to five phases over an approximately 11-year period, from about 2018 through about 2029. Infrastructure would be constructed in tandem with new and rehabilitated buildings and open space. Construction impacts would be the same for both the Maximum Residential Scenario and the Maximum Commercial Scenario.

Construction-related activities would generally occur Monday through Saturday, between 7:00 a.m. and 8:00 p.m., and the typical work shift for most construction workers would be from 7:00 a.m. to about 3:30 p.m. Construction is not anticipated to occur on Sundays or major legal holidays, but may occur on an as-needed basis. The hours of construction would be stipulated by the San Francisco Department of Building Inspection. Construction staging would occur within the project site.

The project sponsors and construction contractor(s) would be required to prepare traffic control plans for the various construction phases, which would be intended to reduce potential conflicts between construction activities and pedestrians, bicycles, transit, and autos at the project site and with other construction projects in the project vicinity that are expected to occur during the 11-year construction period. The exact routes that construction trucks would use would depend on the location of construction materials being transported to the project site and the location of the construction activities on the project site as well as the location of disposal sites for excavated soil and demolition debris. However, it is reasonable to assume that construction vehicles would typically use Third Street and 25th Street or Mariposa Street to access I-280 to travel south; Third Street and either Second or Fifth streets to reach the Bay Bridge and the East Bay; and Third Street, Howard Street, and Van Ness Avenue (U.S. 101) to travel to North Bay destinations. All of these streets have two or more travel lanes in each direction and are designed to handle truck traffic. The impact of construction traffic on these streets could be a slight lessening of their capacities due to slower-moving vehicles and would not substantially affect peak period conditions because construction work schedules do not typically coincide with the peak commute periods. Truck access routes would be reviewed with SFMTA as part of the traffic control plans.

If temporary traffic lane, parking lane, or sidewalk closures would be needed, the closures would be coordinated with City staff to minimize effects on local traffic and circulation. In general, lane and sidewalk closures are subject to review and approval by the City's Transportation Advisory Staff Committee (TASC) that consists of representatives of City departments, including SFMTA, Public Works, the Fire Department, the Police Department, the Health Department, the Port, and the Taxi Commission. There are no Muni bus stops adjacent to or on the project site, so none would need to be relocated.

The trip distribution and mode split of construction workers are speculative to estimate. However, it is anticipated that the addition of the worker-related vehicle or transit trips would not substantially affect transportation conditions, as impacts on local intersections or the transit network would be substantially less than those associated with the Proposed Project and would be temporary in nature. Construction workers who drive to the site and potential temporary parking restrictions along Illinois Street would cause a temporary increase in parking demand and a decrease in supply. Construction workers would need to park either on-street, in parking facilities that currently have availability during the day, or in temporary parking facilities established on vacant parcels. However, parking shortfalls would be temporary and are not considered a significant environmental impact.

Overall, construction-related transportation impacts of the Proposed Project would be less than significant and no mitigation measures would be required. However, the following Improvement Measure is identified to further reduce less-than-significant potential conflicts between construction activities and pedestrians, bicyclists, transit, and autos, and between construction activities and nearby businesses and residents:

Improvement Measure I-TR-A: Construction Management Plan

Traffic Control Plan for Construction – To reduce potential conflicts between construction activities and pedestrians, bicyclists, transit, and autos during construction activities, the project sponsors should require construction contractor(s) to prepare a traffic control plan for major phases of construction (e.g., demolition and grading, construction, or renovation of individual buildings). The project sponsors and their construction contractor(s) will meet with relevant City agencies to coordinate feasible measures to reduce traffic congestion, including temporary transit stop relocations and other measures to reduce potential traffic and transit disruption and pedestrian circulation effects during major phases of construction. For any work within the public right-of-way, the contractor would be required to comply with San Francisco's Regulations for Working in San Francisco Streets (i.e., the "Blue Book"), which establish rules and permit requirements so that construction activities can be done safely and with the least possible interference with pedestrians, bicyclists, transit, and vehicular traffic. Additionally, non-construction-related truck movements and deliveries should be restricted as feasible during peak hours (generally 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to

6:00 p.m., or other times, as determined by SFMTA and the Transportation Advisory Staff Committee [TASC]).

In the event that the construction timeframes of the major phases and other development projects adjacent to the project site overlap, the project sponsors should coordinate with City Agencies through the TASC and the adjacent developers to minimize the severity of any disruption to adjacent land uses and transportation facilities from overlapping construction transportation impacts. The project sponsors, in conjunction with the adjacent developer(s), should propose a construction traffic control plan that includes measures to reduce potential construction traffic conflicts, such as coordinated material drop offs, collective worker parking, and transit to job site and other measures.

Reduce Single Occupant Vehicle Mode Share for Construction Workers – To minimize parking demand and vehicle trips associated with construction workers, the project sponsors should require the construction contractor to include in the Traffic Control Plan for Construction methods to encourage walking, bicycling, carpooling, and transit access to the project construction sites by construction workers in the coordinated plan.

Project Construction Updates for Adjacent Residents and Businesses – To minimize construction impacts on access for nearby residences, institutions, and businesses, the project sponsors should provide nearby residences and adjacent businesses with regularly-updated information regarding construction, including construction activities, peak construction vehicle activities (e.g., concrete pours), travel lane closures, and lane closures via a newsletter and/or website.

OPERATIONAL IMPACTS

VMT IMPACTS

As noted in the Analysis Methodology section, San Francisco uses maps illustrating areas that exhibit below-threshold VMT. The maps demonstrate whether a proposed project is in a transportation-efficient location, (e.g., transit-oriented infill), and will help the City, region and state reach their GHG reduction targets under AB 32. The Transportation Authority has prepared SF-CHAMP model runs to estimate the existing VMT generated per capita within each of the City's TAZs for residential, office, and retail land uses. In those TAZs where land uses are estimated to generate VMT per capita at a rate no more than 15 percent lower than the regional average for that land use type, new proposed land uses are forecasted to also generate VMT per capita at no more than 15 percent lower than the regional average for that land use type, so long as the proposed land uses are relatively similar in transportation context to the existing surrounding land uses (i.e., similar parking ratios, scale, transportation amenities, etc.).

Impact TR-2: The Proposed Project would not cause substantial additional VMT nor substantially induce automobile travel. (*Less than Significant*)

As summarized in Table 4.E.3 above, existing average daily VMT per capita is more than 15 percent below the existing regional average daily VMT per capita for residential, office, and retail uses in TAZ 559 where the Proposed Project is located. Given that the project site is located in

an area where existing VMT is more than 15 percent below the existing regional average, the Proposed Project's residential, office, and retail (and thus, PDR, open space, and restaurant) uses would not result in substantial additional VMT and impacts would be less than significant. Furthermore, the project site meets the Proximity to Transit Stations screening criterion, which also indicates that the Proposed Project's uses would not cause substantial additional VMT.[44]

For the reasons set forth below, the amount of parking included in the Proposed Project would not result in VMT beyond the significance threshold.

As stated above, many factors affect travel behavior. These factors include density, diversity of land uses, design of the transportation network, access to regional destinations, distance to high-quality transit, development scale, demographics, and transportation demand management.[45] The Transportation Authority's SF-CHAMP accounts for a variety of these factors to estimate VMT throughout San Francisco. SF-CHAMP is not sensitive to site-level characteristics like TDM measures. The amount of parking provided on a site is considered a TDM measure.

As part of the "Shift" component of the Transportation Sustainability Program, the City is pursuing the San Francisco TDM Program. The purpose of the TDM Program is to reduce the VMT that otherwise would be forecast to occur from new development (in SF-CHAMP or other transportation modeling software) based upon the new development's TAZ location. In order to achieve this VMT reduction, the San Francisco TDM Program requires that property owners select from a menu of TDM measures, defined as measures that reduce VMT by residents, tenants, employees, and visitors and are under the control of the property owner. A reduction in VMT may result from shifting vehicle trips to sustainable travel modes or reducing vehicle trips, increasing vehicle occupancy, or reducing the average vehicle trip length.

The TDM Technical Justification document[46] provides the technical basis for the creation of the applicability, targets, and assignment of points to individual measures on the TDM menu used for the San Francisco TDM Program. Each of the TDM measures on the menu is assigned a number of points, reflecting its relative effectiveness in reducing VMT. This relative effectiveness determination is grounded in literature review, local data collection, best practices research, and professional transportation expert opinion. One of the individual measures in the TDM menu that was researched was parking supply, as described below.

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[44] San Francisco Planning Department, *Transit-Oriented Infill Project Eligibility Checklist*, Pier 70 Mixed-Use Project, Case No. 2014-001272ENV, dated November 18, 2015.

[45] California Smart-Growth Trip Generation Rates Study, Appendix A, University of California, Davis Institute of Transportation Studies, March 2013.

[46] San Francisco Planning Department, *Transportation Demand Management Technical Justification*, June 2016

In 2010, the California Air Pollution Control Officers Association (CAPCOA) published a report that quantifies project-level land use, transportation, energy use, and other measures effects on GHG emissions based upon a literature review of research conducted to date.[47] The CAPCOA report identifies a maximum of 12.5 percent reduction in VMT related to parking supply (PDT-1). Recent research, described further below, indicates that an area with more parking influences a higher demand for more automobile use.

A New York City study of three boroughs showed a clear relationship between guaranteed vehicular parking at home and a greater tendency to use the automobile for trips made to and from work, even when both work and home are well served by transit. The study also infers that driving to other non-work activities is also likely to be higher for households with guaranteed vehicular parking.[48] Related literature focused on the relationship between the availability of free on-street parking supply and the number of cars per household supports the findings that the availability of parking increases private car ownership by approximately nine percent.[49] A study of households within a two-mile radius of ten rail stations in New Jersey concluded that if development near transit stations is developed with a high parking supply (on- and off-street), then those developments will not reduce automobile use compared to developments located further away from transit stations, and that parking supply can undermine the incentive to use transit that proximity to transit provides.[50] A study of nine cities across the United States looked at the question of whether citywide changes in vehicular parking cause automobile use to increase, or whether minimum parking requirements an appropriate response the already rising automobile use. The study concluded that: "parking provision in cities is a likely cause of increased driving among residents and employees in those places".[51]

Research conducted in San Francisco focused on whether or not a relationship exists between the provision of off-street parking and the choice to drive among individuals traveling to or from the site (similar to the focus of one of the questions in the nine-city United States study). Following data collection and an empirical review of the data, this research found that reductions in off-street vehicular parking for office, residential, and retail developments reduce the overall automobile mode share associated with those developments, relative to projects with the same

[47] California Air Pollution Control Officers Association (CAPCOA), *Quantifying Greenhouse Gas Mitigation Measures: A Resource for Local Government to Assess Emission Reductions from Greenhouse Gas Mitigation Measures,* August 2010.

[48] Rachel Weinberger, "Death by a thousand curb-cuts: Evidence on the effect of minimum parking requirements on the choice to drive," *Transport Policy, 20,* March 2012.

[49] Guo Zhan, "Residential Street Parking and Car Ownership," *Journal of the American Planning Association, 79:1,* 32-48, May 9, 2013.

[50] Daniel Chatman, "Does Transit-Oriented Development Need the Transit?", Access, Fall 2015.

[51] Chris McCahill, et al., "Effects of Parking Provision on Automobile Use in Cities: Inferring Causality," Transportation Research Board, November 13, 2015.

land uses in similar contexts that provide more off-street vehicular parking.[52] In other words, more off-street vehicular parking is linked to more driving and that people without dedicated parking spaces are less likely to drive.

Based upon the recent research, a reduced parking supply is one the most effective TDM measure available in the menu for the TDM Program. Eleven options (with points associated with them) are provided for this TDM measure in the TDM Program, depending upon the development project's parking supply[53] compared to the neighborhood parking rate. The neighborhood parking rate is number of existing parking spaces provided per dwelling unit or per 1,000 square feet of non-residential uses for each TAZ within San Francisco.

Using the neighborhood parking rate as a basis for assigning points accounts for the variability in geography throughout San Francisco and the effect this can have on travel behavior. Although parking supply is not an input into SF-CHAMP, based upon the recent research, the existing parking supply within a TAZ has a relationship with the VMT for that TAZ. Therefore, a new development would mostly likely not reduce VMT as it relates to parking supply if the new development is not parked at least at or below the neighborhood parking rate.

In this instance, the existing neighborhood parking rate for the project site (TAZ 559) is 0.72 spaces per residential unit and 0.04 per 1,000 square feet of non-residential space. The parking rate takes into account the amount of parking and residential units and non-residential square footage in the TAZ itself and other nearby accessible TAZs within a 0.75 mile network-based walking distance, with more distant parking and residential units and non-residential square footage within that walking distance given decreasing weight. Therefore, although the project site is relatively underutilized and only contains non-residential uses, the neighborhood parking rate accounts for residential units and non-residential square footage nearby. These rates, and in particular, the rate for non-residential space are substantially lower than elsewhere in the City, likely due to the prevalence of large industrial warehousing spaces in the neighborhood that tend to have large square footages with relatively low travel activity, and thus require low amounts of off-street parking, particularly when on-street parking exists.

In addition, even though parking is not specifically an input into SF-CHAMP, the existing parking is captured in the estimates of VMT outputs from SF-CHAMP because it is an existing condition on the ground. As mentioned above, existing average daily VMT per capita, per employee, and per retail employee in TAZ 559 is below the existing regional average daily VMT per capita, per employee, and per retail employee, respectively. Therefore, in order to exceed the

[52] Fehr and Peers, *Parking Analysis and Methodology Memo – Final*, April 2015.
[53] This refers to accessory (or off-street) parking supply, which is defined in the TDM Program Standards.

threshold of 15 percent below regional averages, the project would have to substantially increase VMT per capita, per employee, and per retail employee.

In typical conditions, a proposed project would be relatively similar in land use mix to the surrounding neighborhood's land uses. Under these circumstances, in order to account for an increase or decrease in VMT per capita from the project's parking supply, the project's parking rate is compared to the neighborhood parking rate.

The Proposed Project includes up to 3,496 parking spaces. Maximum parking supply rates per land use are 0.75 spaces per residential unit and 1.0 spaces per 1,000 square feet for non-residential uses. The residential parking rate is slightly higher than the neighborhood average rate; however, it is very close to the neighborhood average, and to the extent such a small difference may affect VMT, it is not likely to increase VMT to the point where it would exceed the threshold since the residential VMT per capita is expected to be 49 percent below the regional average.

The Proposed Project's parking supply rates for non-residential uses are higher than the neighborhood average, which could indicate that the Proposed Project's non-residential uses may be expected to generate higher VMT rates than the forecasts from SF-CHAMP (which are designed to project the "average" project) would otherwise suggest. However, the overall premise of the above discussion of parking is that for similar land uses, with all other factors held constant, an increase in parking supply would tend to increase VMT per capita and a decrease in parking supply would tend to decrease VMT per capita. In the case of the Proposed Project, the existing neighborhood non-residential parking supply, expressed as a rate per 1,000 square feet of development, is highly influenced by the prevalence of large industrial warehouses which have large square footages and relatively little transportation activity per square foot. In contrast, the Proposed Project would consist primarily of residential, retail, office, and light industrial uses, which would result in a higher population (employees and visitors) per square foot than large warehouses. Thus, the fact that the Proposed Project's non-residential parking supply rates, which are based on retail, office, and light industrial uses are higher than the existing neighborhood's non-residential parking ratio, which consists of primarily large industrial warehouses, does not necessarily suggest that the Proposed Project's land uses would generate VMT per capita for office and retail uses at a higher rate than forecasted by SF-CHAMP. In this case, because there is relatively little office and retail use in the study area comparable to the Proposed Project, a comparison to the neighborhood average is not as meaningful.

Further, as noted at the end of this Chapter, under Parking Information, pp. 4.E.124-4.E.126, for both residential and non-residential uses, the Proposed Project's parking supply is forecasted to be less than the forecasted parking demand, meaning that parking is constrained and likely contributing to decreases in VMT compared to conditions with an unconstrained parking supply.

Thus, the parking at the Proposed Project is not likely to be readily available and travelers would likely experience parking shortfalls during peak times. As a result, even though parking ratios may be higher than the neighborhood average, the effect of a parking supply that does not meet forecasted demand suggests that the VMT rates forecasted by SF-CHAMP should not be adjusted upward to account for an abundant parking supply.

Additionally, the above discussion does not fully account for the reduction in VMT likely to occur due to the Proposed Project's TDM Plan, which includes robust measures (such as shuttles, participation in the regional bikeshare program, unbundled parking supply, and the establishment of a site-wide Transportation Management Agency) to reduce VMT. The TDM Technical Justification document includes documentation regarding the estimated VMT reduction from many of the measures included in the Proposed Project's TDM Plan. Therefore, the VMT impacts of the Proposed Project would be less than significant.

Although the VMT impacts would be less than significant, implementation of the Air Quality Mitigation Measure M-AQ-1f: Transportation Demand Management, pp. 4.G.47-4.G.50, would likely further reduce the Proposed Project's less-than-significant impacts related to VMT such that it would be lower than the forecasts discussed above, if implemented. Generally, Mitigation Measure M-AQ-1f would require the reduction of single-occupant automobile trips through TDM elements that would supplement those outlined in the Proposed Project's TDM Plan. As noted earlier, the City is in the process of adopting a TDM Ordinance, requiring new development projects to implement a specific level of TDM measures. Because the Proposed Project is part of a proposed Special Use District, the Proposed Project would not be subject to the TDM Ordinance. However, the Proposed Project's TDM Plan would be required to achieve a similar policy goal to the TDM Ordinance. The Mitigation Measure described above would further enhance the level of TDM measures implemented.

Finally, the Proposed Project is not a transportation project. However, the Proposed Project would include features that would alter the transportation network. The features are new sidewalks and sidewalk widening, bicycle facilities, on-street loading zones and curb cuts, new internal roadways, on-street safety strategies, and intersection signalization described in Chapter 2, Project Description. These features fit within the general types of projects identified above that would not substantially induce automobile travel as they do not create substantial increases in roadway capacity.[54] Therefore, impacts would be less than significant.

[54] San Francisco Planning Department, Executive Summary: Resolution Modifying Transportation Impact Analysis, Appendix F, Attachment A, March 3, 2016.

TRAFFIC IMPACTS

The Proposed Project would have a significant impact on traffic if it created or contributed to a major traffic hazard in the study area. In general, the Proposed Project would add vehicle trips to the surrounding roadways; however, a general increase in traffic in and of itself would not be considered a traffic hazard.

Impact TR-3: The Proposed Project would not create major traffic hazards. (*Less than Significant*)

Existing vehicle, pedestrian, and bicycle volumes on Illinois Street, 20th Street, 22nd Street, and other streets near the project site are low (with the exception of Third Street). The Proposed Project would add vehicle trips to the surrounding roadways; however, a general increase in traffic would not be considered a traffic hazard. The Proposed Project's new internal street system is currently under development; however, the final designs would be subject to approval by the SFMTA, San Francisco Fire Department, and the Department of Public Works to ensure that the streets are designed consistent with City policies and design standards. Overall, the Proposed Project's street network has been designed to minimize street widths and provide ample sidewalk space, which serves to calm traffic, shorten pedestrian crossing distances, and encourage use of walking and bicycling.

When events are planned at the Pier 70 site, the event sponsors would be required to obtain permits from the Port of San Francisco; these permits will include strategies to enhance transportation conditions in Mission Bay and nearby neighborhoods.[55] The site's TDM coordinator should participate as a member of the Mission Bay Ballpark Transportation Coordination Committee (MBBTCC) and provide notification prior to the start of any event that would overlap with an event at the Warriors arena.

Because the Proposed Project's roadway network is designed to prioritize safe bicycle and pedestrian travel within the site, traffic speeds are likely to be relatively slow within the project site. Further, the Proposed Project would install traffic control devices within and adjacent to the project site that would further enhance safety for all users based on forecasted traffic conditions. As a result, the Proposed Project is not expected to create a major traffic hazard, and the Proposed Project's traffic impacts are considered less than significant.

[55] All new parks constructed as part of the Proposed Project would be owned by the Port of San Francisco and events would be required to go through the Port's permitting process on a case-by-case basis. For private parcels within the Proposed Project, no event venues are proposed. Generally, events with fewer than 2,000 attendees would be managed via the strategies included in the Proposed Project's TDM plan and would be expected to be operated in a manner similar to the way events on Pier 70 are currently managed. However, events with more than 2,000 attendees may require additional strategies to improve transportation conditions that would be developed through the MBBTCC.

TRANSIT IMPACTS

The Proposed Project would generate 2,665 person-trips on transit during the weekday a.m. peak hour and 2,893 person-trips on transit during the weekday p.m. peak hour in the Maximum Residential Scenario. In the Maximum Commercial Scenario, the Proposed Project would generate similar totals for transit ridership – 2,818 person-trips on transit during the weekday a.m. peak hour and 2,809 person-trips on transit during the weekday p.m. peak hour. Transit trips to and from the project site would use nearby Muni routes (T Third, 10 Townsend, 22 Fillmore, or 48 Quintara/24th Street) or the Proposed Project's shuttle system to connect to and from regional transit providers.

The Proposed Project would include a shuttle service, operated and maintained by the Pier 70 TMA, to connect the Pier 70 Mixed-Use District to regional transit hubs. The primary goal of the proposed shuttle service at Pier 70 is to provide a first-mile / last-mile connection for transit riders traveling to or from the project site, particularly for riders needing to use frequent local and regional transit. These riders would be expected to take regional transit services operated by BART, Caltrain, AC Transit, Golden Gate Transit, SamTrans, or other regional transit providers, but would need an additional connection to access these services when traveling to or from Pier 70.

The exact structure of any shuttle service provided for the Proposed Project site has not been established and would depend on factors that are not known at this time. For planning and analysis purposes, two routes have been preliminarily identified; however, final service routes and stops would be determined based on rider feedback and demand, peak period traffic congestion on local streets, and BART and Caltrain schedules and service plans at specific stations. The two preliminary routes assumed for this analysis are:

- 22nd Street, Mississippi Street, and 16th Street to access the 22nd Street Caltrain Station and the 16th Street / Mission BART station
- Third Street, 16th Street, and King Street to access the Fourth and King Caltrain Station (with some trips extending to the Transbay Transit Center)

While shuttle riders would have the option of taking local transit services operated by Muni, the shuttle system would offer complimentary service to meet the needs of these users, similar to the way in which the Mission Bay TMA shuttle system enhances existing Muni service. For the purposes of this analysis, residents and employees at the project site were forecast to use the shuttle to get to the regional transit service hubs (e.g., BART and Caltrain). All transit trips not associated with a regional service connection were assumed to be via Muni routes, rather than on the shuttle, because the shuttle is not intended to replicate Muni's local service. The proposed 15-minute headways of the shuttles would be similar to the existing 10 Townsend, 22 Fillmore, or 48

Quintara/24th Street headways. However, the shuttle service would be free to residents, employees, and other visitors.

The shuttle service would enroll in the SFMTA Commuter Shuttle Program. The Commuter Shuttle Program includes minor modifications to the existing roadways to install new commuter shuttle stops, as well as the installation of minor improvements such as signage, traffic islands, and bus bulbs. The shuttle would follow all policies set forth by the Commuter Shuttle Program. The Commuter Shuttle Program was environmentally cleared on October 22, 2015.[56]

The Baseline Conditions assume completion of the Central Subway, which is planned to open in 2019 and would supplement the existing Muni routes. After the service changes being implemented as part of the Muni Forward campaign, the 22 Fillmore and 33 Stanyan will provide service in the 16th Street corridor at 6- to 8-minute headways and 12-minute headways, respectively, during the peak periods. The 58 24th Street route (replacing portions of the 48 Quintara/24th Street) would be the least frequent Muni route serving Pier 70, but is still proposed for weekday headways of 15 minutes during the a.m. and p.m. peak periods and midday period. These service changes were also assumed in the Baseline Conditions analysis.

The additional project-generated transit trips would follow the geographic trip distribution patterns described earlier throughout San Francisco and the region. Transit trips were assigned to the individual transit routes based on the likely origins and destinations of the trips and the available capacity on each route. Table 4.E.19: Muni Downtown Screenlines – A.M. Peak Hour and Table 4.E.20: Muni Downtown Screenlines – P.M. Peak Hour present the ridership and capacity utilization at Muni screenlines and on individual Muni routes with project-generated transit trips added to the baseline ridership in the a.m. and p.m. peak periods.

As shown in the tables, with the addition of project-generated transit trips, some Muni transit corridors and individual routes would exceed Muni's capacity utilization standard of 85 percent, although no screenlines would exceed the standard.

Overall, two of the primary routes serving the study area (the T Third and the 22 Fillmore) would operate in dedicated rights-of-way and therefore are not likely to be affected by project-related traffic congestion. The 48 Quintara/24th Street will not operate on major streets in the vicinity of the Proposed Project and as such, its route is not likely to be affected by project-generated traffic congestion either. Thus, the Proposed Project's impacts on transit delay are expected to be minor and are not discussed in detail in this analysis.

[56] San Francisco Planning Department Case No. 2015-007975ENV, SFMTA – Commuter Shuttle Program, Certificate of Determination – Exemption from Environmental Review, October 2015.

Table 4.E.19: Muni Downtown Screenlines – A.M. Peak Hour

Muni Screenline	Baseline			Baseline Plus Project – Residential			Baseline Plus Project – Commercial		
	Ridership	Capacity	Utilization	Project Trips	Ridership	Utilization	Project Trips	Ridership	Utilization
Northeast									
Kearny/Stockton	2,273	3,157	72%	0	2,273	72%	0	2,273	72%
Other lines	710	1,141	62%	54	764	67%	37	747	65%
Screenline Total	*2,983*	*4,298*	*69%*	*54*	*3,037*	*71%*	*37*	*3,020*	*70%*
Northwest									
Geary	2,302	3,764	61%	0	2,302	61%	0	2,302	61%
California	1,436	2,010	71%	0	1,436	71%	0	1,436	71%
Sutter/Clement	514	630	82%	0	514	82%	0	514	82%
Fulton/Hayes	1,505	2,237	67%	0	1,505	67%	0	1,505	67%
Balboa	553	1008	55%	0	553	55%	0	553	55%
Screenline Total	*6,310*	*9,649*	*65%*	*0*	*6,310*	*65%*	*0*	*6,310*	*65%*
Southeast									
Third Street	1,025	3,808	27%	215	1,240	33%	152	1,177	31%
Mission	2,155	2,632	82%	0	2,155	82%	0	2,155	82%
San Bruno/Bayshore	1,867	2,197	**85%**	0	1,867	**85%**	0	1,867	**85%**
Other lines	1,577	1,756	**90%**	81	1,658	**94%**	101	1,678	**96%**
Screenline Total	*6,624*	*10,393*	*64%*	*296*	*6,920*	*67%*	*253*	*6,877*	*66%*
Southwest									
Subway lines	6,783	7,020	**97%**	323	7,106	**101%**	410	7,193	**102%**
Haight/Noriega	1,178	1,596	74%	0	1,178	74%	0	1,178	74%
Other lines	474	560	**85%**	0	474	**85%**	0	474	**85%**
Screenline Total	*8,435*	*9,176*	***92%***	*323*	*8,758*	***95%***	*410*	*8,845*	***96%***
Muni Screenlines Total	*24,352*	*33,515*	*73%*	*673*	*25,025*	*75%*	*700*	*25,052*	*75%*

Table 4.E.19 Continued

Muni Screenline	Baseline			Baseline Plus Project – Residential			Baseline Plus Project – Commercial		
	Ridership	Capacity	Utilization	Project Trips	Ridership	Utilization	Project Trips	Ridership	Utilization
Individual Muni Routes									
22 Fillmore IB	501	882	57%	163	664	75%	129	630	71%
22 Fillmore OB	340	882	39%	245	585	66%	350	690	78%
48 Quintara / 24th Street IB	119	252	47%	149	268	**106%**	118	237	**94%**
48 Quintara / 24th Street OB	199	252	79%	224	423	**168%**	319	518	**206%**
KT Third Ingleside IB	1,097	3,808	29%	323	1,420	37%	410	1,507	40%
KT Third Ingleside OB	1,931	3,808	51%	215	2,146	56%	152	2,083	55%

Notes:
Bold indicates capacity utilization of 85 percent or greater.

Source: Fehr & Peers, 2016. See Appendix C in the Transportation Impact Study for Transit Line Capacity Calculations.

Table 4.E.20: Muni Downtown Screenlines – P.M. Peak Hour

Muni Screenline	Baseline			Baseline Plus Project – Residential			Baseline Plus Project – Commercial		
	Ridership	Capacity	Utilization	Project Trips	Ridership	Utilization	Project Trips	Ridership	Utilization
Northeast									
Kearny/Stockton	2,444	3,327	73%	0	2,444	73%	0	2,444	73%
Other lines	903	1,155	78%	71	974	84%	51	954	83%
Screenline Total	*3,347*	*4,482*	*75%*	*71*	*3,418*	*76%*	*51*	*3,398*	*76%*
Northwest									
Geary	2,913	3,621	80%	0	2,913	80%	0	2,913	80%
California	1,349	1,752	77%	0	1,349	77%	0	1,349	77%
Sutter/Clement	523	630	83%	0	523	83%	0	523	83%
Fulton/Hayes	1544	1,838	84%	0	1,544	84%	0	1,544	84%
Balboa	537	974	55%	0	537	55%	0	537	55%
Screenline Total	*6,866*	*8,815*	*78%*	*0*	*6,866*	*78%*	*0*	*6,866*	*78%*

Table 4.E.20 Continued

Muni Screenline	Baseline			Baseline Plus Project – Residential			Baseline Plus Project – Commercial		
	Ridership	Capacity	Utilization	Project Trips	Ridership	Utilization	Project Trips	Ridership	Utilization
Southeast									
Third Street	1,836	3,808	48%	280	2,116	56%	208	2,044	54%
Mission	1,927	2,632	73%	0	1,927	73%	0	1,927	73%
San Bruno/Bayshore	1,761	2,134	83%	0	1,761	83%	0	1,761	83%
Other lines	1,213	1,675	72%	76	1,289	77%	87	1,300	78%
Screenline Total	*6,737*	*10,249*	*66%*	*356*	*7,093*	*69%*	*295*	*7,032*	*69%*
Southwest									
Subway lines	5,433	6,804	80%	304	5,737	84%	354	5,787	**85%**
Haight/Noriega	1,065	1,596	67%	0	1,065	67%	0	1,065	67%
Other lines	655	840	78%	0	655	78%	0	655	78%
Screenline Total	*7,153*	*9,240*	*77%*	*304*	*7,457*	*81%*	*354*	*7,507*	*81%*
Muni Screenlines Total	*24,103*	*32,786*	*74%*	*731*	*24,834*	*76%*	*700*	*24,803*	*76%*
Individual Muni Routes									
22 Fillmore IB	436	939	46%	230	666	71%	301	737	78%
22 Fillmore OB	400	939	43%	213	613	65%	177	577	61%
48 Quintara/24th Street IB	160	252	63%	211	371	**147%**	274	434	**172%**
48 Quintara/24th Street OB	213	252	**85%**	196	409	**162%**	161	374	**148%**
T Third IB	1,940	3,808	51%	280	2,220	58%	208	2,148	56%
T Third OB	1,742	3,808	46%	304	2,046	54%	354	2,096	55%

Notes:
Bold indicates capacity utilization of 85 percent or greater.

Source: Fehr & Peers, 2016. See Appendix D in the Transportation Impact Study for Transit Line Capacity Calculations.

Impact TR-4: The Proposed Project would not result in any Muni screenlines exceeding 85 percent capacity utilization nor would it increase ridership by more than five percent on any Muni screenline forecast to exceed 85 percent capacity utilization under Baseline Conditions without the Proposed Project. (*Less than Significant*)

As shown on pp. 4.E.87-4.E.88, capacity utilization at the four Downtown Muni screenlines would range from 65 percent at the northwest screenline in the a.m. peak hour to 92 percent at the southwest screenline in the a.m. peak hour under Baseline Conditions. Both the Maximum Residential Scenario and Maximum Commercial Scenario would add riders to the northeast, southeast, and southwest screenlines. The addition of riders from the Proposed Project would increase capacity utilization but would not cause any of the screenlines that operate below 85 percent capacity utilization to exceed the 85 percent standard. Some sub-corridors within the screenlines would exceed 85 percent capacity utilization. Specifically, the "other lines" sub-corridor within the Southeast screenline would operate at 94 percent and 96 percent in the Maximum Residential and Maximum Commercial scenarios, respectively, in the a.m. peak hour. However, the overall screenline would operate within the 85 percent capacity utilization standard and conditions on this screenline are considered acceptable.

Capacity utilization at the southwest screenline would increase from 92 percent to 95 percent under the Maximum Residential Scenario and 96 percent under the Maximum Commercial Scenario in the a.m. peak hour. Furthermore, the "subway lines" sub-corridor within the southwest screenline would increase capacity utilization in the a.m. peak hour from 95 percent under Baseline Conditions to 101 percent and 102 percent capacity utilization under the Maximu Residential and Maximum Commercial scenarios, respectively. However, the Proposed Project would add less than 5 percent to the baseline ridership at the overall screenline. Therefore, because the Proposed Project would not cause any screenline to exceed its capacity utilization threshold and because the Proposed Project would not increase capacity utilization by more than 5 percent on any screenline forecasted to exceed its capacity utilization threshold under Baseline Conditions without the Proposed Project, the impact would be less than significant and no mitigation is required.

Impact TR-5: The Proposed Project would cause one individual Muni route to exceed 85 percent capacity utilization in the a.m. and p.m. peak hours in both the inbound and outbound directions. (*Significant and Unavoidable with Mitigation*)

The T Third light rail line (renamed from the KT Third/Ingleside route following completion of the Central Subway) as well as the 22 Fillmore and the 48 Quintara/24th Street bus routes under Baseline Conditions operate within the capacity utilization standard of 85 percent in the a.m. and p.m. peak period. With ridership generated by the Maximum Residential Scenario and Maximum

Commercial Scenario, the T Third light rail line and 22 Fillmore bus route would continue to operate below 85 percent capacity utilization. However, the 48 Quintara/24th Street routes would exceed 85 percent capacity utilization inbound and outbound with project implementation. This would occur in the a.m. and p.m. peak hours.

Maximum Residential Scenario

The Proposed Project would cause the capacity utilization of the 48 Quintara/24th Street to increase from 47 percent to 106 percent in the inbound direction and from 79 percent to 168 percent in the outbound direction in the a.m. peak hour under the Maximum Residential Scenario. Under this same scenario, in the p.m. peak hour, the Proposed Project would cause the capacity utilization of the 48 Quintara/24th Street to increase from 63 percent to 147 percent in the inbound direction and from just under 85 percent to 162 percent in the outbound direction. Project-generated ridership would be 56 percent of the inbound 48 Quintara/24th Street ridership and 53 percent of the outbound ridership on the 48 route at the MLP in the a.m. peak hour. In the p.m. peak hour, project-generated ridership would be 57 percent of the ridership on the 48 Quintara/24th Street route in the inbound direction and 48 percent in the outbound direction.

Maximum Commercial Scenario

The Proposed Project would cause the capacity utilization of the 48 Quintara/24th Street to increase from 47 percent to 94 percent in the inbound direction and from 79 percent to 206 percent in the outbound direction in the a.m. peak hour under the Maximum Commercial Scenario. Under this same scenario, in the p.m. peak hour, the Proposed Project would cause the capacity utilization of the 48 Quintara/24th Street to increase from 63 percent to 172 percent in the inbound direction and from just under 85 percent to 148 percent in the outbound direction. Project-generated ridership would be 50 percent of the inbound 48 Quintara/24th Street ridership and 62 percent of the outbound ridership on the 48 route in the a.m. peak hour. In the p.m. peak hour, project-generated ridership would be 63 percent of the ridership on the 48 Quintara/24th Street route in the inbound direction and 43 percent in the outbound direction.

This would be a significant impact on this Muni route under either scenario of the Proposed Project. In order to reduce this impact to less-than-significant levels, additional transit capacity along the 48 Quintara/24th Street bus route would be required.

Mitigation Measure M-TR-5: Monitor and increase capacity on the 48 Quintara/24th Street bus routes as needed.

Prior to approval of the Proposed Project's phase applications, project sponsors shall demonstrate that the capacity of the 48 Quintara/24th Street bus route has not exceeded 85 percent capacity utilization, and that future demand associated with build-out and occupancy of the phase will not cause the route to exceed its utilization. Forecasts of

travel behavior of future phases could be based on trip generation rates forecast in the EIR or based on subsequent surveys of occupants of the project, possibly including surveys conducted as part of ongoing TDM monitoring efforts required as part of Air Quality Mitigation Measure M-AQ-1f: Transportation Demand Management, p. 4.G.47-4.G.50.

If trip generation calculations or monitoring surveys demonstrate that a specific phase of the Proposed Project will cause capacity on the 48 Quintara/24th Street route to exceed 85 percent, the project sponsors shall provide capital costs for increased capacity on the route in a manner deemed acceptable by SFMTA through the following means:

- The project sponsors shall pay the capital costs for additional buses (up to a maximum of four in the Maximum Residential Scenario and six in the Maximum Commercial Scenario). While the project sponsors could assist with purchasing the buses, SFMTA would need to find funding to pay for the added operating cost associated with operating increased service made possible by the increased vehicle fleet. The source of that funding has not been established.

Alternatively, if SFMTA determines that other measures to increase capacity along the route would be more desirable than adding buses, the project sponsors shall pay an amount equivalent to the cost of the required number of buses toward completion of one or more of the following, as determined by SFMTA:

- Convert to using higher-capacity vehicles on the 48 Quintara/24th Street route. In this case, the project sponsors shall pay a portion of the capital costs to convert the route to articulated buses. Some bus stops along the route may not currently be configured to accommodate the longer articulated buses. Some bus zones could likely be extended by removing one or more parking spaces; in some locations, appropriate space may not be available. The project sponsors' contribution may not be adequate to facilitate the full conversion of the route to articulated buses; therefore, a source of funding would need to be established to complete the remainder, including improvements to bus stop capacity at all of the bus stops along the route that do not currently accommodate articulated buses.
- SFMTA may determine that instead of adding more buses to a congested route, it would be more desirable to increase travel speeds along the route. In this case, the project sponsors' contribution would be used to fund a study to identify appropriate and feasible improvements and/or implement a portion of the improvements that would increase travel speeds sufficiently to increase capacity along the bus route such that the project's impacts along the route would be determined to be less than significant. Increased speeds could be accomplished by funding a portion of the planned bus rapid transit system along 16th Street for the 22 Fillmore between Church and Third streets. Adding signals on Pennsylvania Street and 22nd Street may serve to provide increased travel speeds on this relatively short segment of the bus routes. The project sponsors' contribution may not be adequate to fully achieve the capacity increases needed to reduce the project's impacts and SFMTA may need to secure additional sources of funding.
- Another option to increase capacity along the corridor is to add new a Muni service route in this area. If this option is selected, project sponsors shall fund

purchase of the same number of new vehicles outlined in the first option (four for the Maximum Residential Alternative and six for the Maximum Commercial Alternative) to be operated along the new route. By providing an additional service route, a percentage of the current transit riders on the 48 Quintara/24th Street would likely shift to the new route, lowering the capacity utilization below the 85 percent utilization threshold. As for the first option, funding would need to be secured to pay for operating the new route.

Implementing any of the components of Mitigation Measure M-TR-5 would allow Muni to maintain transit headways, and would reduce the Proposed Project's impact to less-than-significant levels. Implementation of features of the mitigation measure above that would require discretionary approval actions by the SFMTA or other public agencies (including allocation of funds to operate increased frequencies) is considered uncertain because public agencies subject to CEQA cannot commit to implementing any part of a proposed project, including proposed mitigation measures, until environmental review is complete. Thus, while the SFMTA has reviewed the feasibility of the options listed above, implementation of these measures cannot be assured until after certification of this EIR. Because it is unknown whether M-TR-5 would be implemented, project-related impacts on the 48 Quintara/24th Street would be significant and unavoidable.

Impact TR-6: Two individual Muni routes would continue to operate within the 85 percent capacity utilization standard in the a.m. and p.m. peak hours in both the inbound and outbound directions with addition of the Proposed Project. (*Less than Significant*)

With implementation of the Proposed Project, both the T Third light rail and the 22 Fillmore bus route would operate within the 85 percent capacity utilization in the a.m. and p.m. peak hours in both the inbound and outbound directions under both the Maximum Residential and Maximum Commercial scenarios. As a result, the Proposed Project's impacts on those individual routes would be less than significant.

Impact TR-7: The Proposed Project would not cause significant impacts on regional transit routes. (*Less than Significant*)

As shown in Table 4.E.21: Regional Transit Screenlines – Baseline Plus Project (A.M. Peak Hour) and Table 4.E.22: Regional Transit Screenlines – Baseline Plus Project (P.M. Peak Hour), transit carriers to the North Bay and South Bay and Peninsula do not exceed their established capacity utilization standards under Baseline Conditions in the a.m. or p.m. peak hour. The East Bay screenline does exceed its established capacity utilization threshold in the a.m. peak hour (primarily due to overcrowding on BART). The East Bay screenline operates within its established capacity utilization threshold in the p.m. peak hour (although BART remains overcrowded during that peak hour between San Francisco and the East Bay).

Table 4.E.21: Regional Transit Screenlines – Baseline Plus Project (A.M. Peak Hour)

Regional Screenline	Baseline (Inbound)			Baseline Plus Project – Residential (Inbound)			Baseline Plus Project – Commercial (Inbound)		
	Ridership	Capacity	Utilization	Project Trips	Ridership	Utilization	Project Trips	Ridership	Utilization
East Bay									
BART	28,000	25,680	**109%**	137	28,137	**110%**	177	28,177	**110%**
AC Transit	1,596	2,829	56%	16	1,612	57%	21	1,617	57%
Ferries	818	1,170	70%	8	8126	71%	10	828	71%
Screenline Total	30,414	29,679	**102%**	*161*	*30,575*	***103%***	*208*	*30,622*	***103%***
North Bay									
Golden Gate Transit Bus	1,344	2,543	53%	66	1,410	55%	80	1,424	56%
Ferries	1,088	1,959	56%	0	1,088	56%	0	1,088	56%
Screenline Total	*2,432*	*4,502*	*54%*	*66*	*2,498*	*55%*	*80*	*2,512*	*56%*
South Bay									
BART	16,000	21,400	75%	53	16,053	75%	61	16,061	75%
Caltrain	2,258	3,100	73%	435	2,693	87%	516	2,774	89%
SamTrans	266	520	51%	11	277	53%	12	278	53%
Screenline Total	18,524	25,020	74%	*499*	*19,023*	*76%*	*589*	*19,113*	*76%*
Regional Screenlines Total	51,370	59,201	87%	*726*	*52,096*	*88%*	*877*	*52,247*	*88%*

Notes:

Bold indicates capacity utilization of 100 percent or greater.

Source: Fehr & Peers, 2016. See Appendix D in the Transportation Impact Study for Transit Line Capacity Calculations.

Table 4.E.22: Regional Transit Screenlines – Baseline Plus Project (P.M. Peak Hour)

Regional Screenline	Baseline (Outbound)			Baseline Plus Project – Residential (Outbound)			Baseline Plus Project – Commercial (Outbound)		
	Ridership	Capacity	Utilization	Project Trips	Ridership	Utilization	Project Trips	Ridership	Utilization
East Bay									
BART	27,000	25,680	**105%**	119	27,119	**106%**	89	27,089	**105%**
AC Transit	2,297	3,926	59%	14	2,311	59%	11	2,308	59%
Ferries	813	1,615	50%	7	820	51%	5	818	51%
Screenline Total	30,110	31,221	96%	*140*	*30,250*	*97%*	*105*	*30,215*	*97%*
North Bay									
Golden Gate Transit Bus	1,399	2,817	50%	57	1,456	52%	41	1,440	51%
Ferries	973	1,959	50%	0	973	50%	0	973	50%
Screenline Total	2,372	4,776	50%	*57*	*2,429*	*51%*	*41*	*2,413*	*51%*
South Bay									
BART	15,000	21,400	70%	46	15,046	70%	31	15,031	70%
Caltrain	2,472	3,100	80%	379	2,851	92%	261	2,733	88%
SamTrans	147	320	46%	9	156	49%	6	153	48%
Screenline Total	*17,619*	*24,820*	*71%*	*434*	*18,053*	*73%*	*298*	*17,917*	*72%*
Regional Screenlines Total	*50,101*	*60,817*	*82%*	*631*	*50,732*	*83%*	*444*	*50,545*	*83%*

Notes:

Bold indicates capacity utilization of 100 percent or greater.

Source: Fehr & Peers, 2016. See Appendix D in the Transportation Impact Study for Transit Line Capacity Calculations.

Maximum Residential Scenario

Development under the Maximum Residential Scenario would generate 161 transit person-trips from the East Bay, 66 transit person-trips from the North Bay, and 499 transit person-trips from the South Bay in the inbound direction in the a.m. peak hour. In the outbound direction in the p.m. peak hour, the Maximum Residential Scenario would generate 140 transit person-trips to the East Bay, 57 transit person-trips to the North Bay, and 434 transit person-trips to the South Bay. The East Bay regional screenline would exceed its capacity utilization threshold in the a.m. peak hour. However, the Proposed Project would not increase the ridership by more than 5 percent during the a.m. peak hour. Although the BART line to the East Bay would exceed its capacity utilization threshold in the p.m. peak hour, the overall East Bay regional screenline would not exceed its capacity utilization threshold in the p.m. peak hour with the addition of project-related

trips. None of the other regional screenlines would exceed capacity utilization standards in either the a.m. or p.m. peak with the addition of project-generated trips.

The Maximum Residential Scenario would not result in a significant impact on regional transit service, and no mitigation would be necessary.

Maximum Commercial Scenario

Development under the Maximum Commercial Scenario would generate 208 transit person-trips from the East Bay, 80 transit person-trips from the North Bay, and 589 transit person-trips from the South Bay in the inbound direction in the a.m. peak hour. In the outbound direction in the p.m. peak hour, the Proposed Project would generate 105 transit person-trips to the East Bay, 41 transit person-trips to the North Bay, and 288 transit person-trips to the South Bay. The East Bay regional screenline would exceed its capacity utilization threshold in the a.m. peak hour. However, similar to the Maximum Residential Scenario, the Proposed Project would not increase the ridership by more than 5 percent during the a.m. peak hour under the Maximum Commercial Scenario. Also similar to the Maximum Residential Scenario, the East Bay BART line would exceed its capacity utilization threshold in the p.m. peak hour. However, the overall East Bay regional screenline would not exceed its capacity utilization threshold in the p.m. peak hour with the addition of project-related trips.

Thus, with the exception of the East Bay regional screenline in the a.m. peak hour, none of the regional screenlines would exceed capacity utilization standards in either the a.m. or p.m. peak hours with the addition of project-generated trips. Although the East Bay regional screenline would exceed its capacity utilization threshold in the a.m. peak hour, the Proposed Project would not increase ridership by more than 5 percent.

The Maximum Commercial Scenario would not result in a significant impact on regional transit service, and no mitigation would be necessary.

PEDESTRIAN IMPACTS

The Proposed Project includes sidewalks throughout the project site, with widths ranging between 9 and 18 feet, including on new internal streets and on the existing streets on the perimeter of the project site. The Proposed Project would also complete the portion of the proposed Blue Greenway, a planned multi-use path along the eastern waterfront of San Francisco, along the project site's eastern frontage. The proposed sidewalk network is intended to comply with City standards for sidewalks on residential streets pursuant to the *Better Streets Plan*.

Pedestrian trips generated by the Proposed Project would include walking trips to and from the local and regional transit stops, as well as walking trips to and from nearby complementary land

uses. As shown in Table 4.E.15, the Proposed Project would generate 1,579 non-auto, non-transit trips in the a.m. peak hour and 3,083 during the weekday p.m. peak hour with the Maximum Residential Scenario. As shown in Table 4.E.16, the Proposed Project would generate 1,816 non-auto, non-transit trips in the a.m. peak hour and 3,367 during the weekday p.m. peak hour with the Maximum Commercial Scenario. Many of these trips would be pedestrian trips. In addition, many transit trips also end or begin with a walking trip to get to or from the transit stop and many of the internal trips identified would also be by foot. Non-auto, non-transit trips include walking, bicycle, motorcycle, taxi, and trips on other transportation modes.

Impact TR-8: Pedestrian travel generated by the Proposed Project could be accommodated on the new roadway and sidewalk network proposed for the project site. (*Less than Significant*)

The Proposed Project site plan and roadway improvements would provide for sidewalks along all streets on the project site. Sidewalks would range from 9 to 18 feet and would comply with City standards for sidewalks on residential streets. New intersections would be designed to City standards, as compact as possible and with all-way stop control, to provide a pedestrian-friendly design. The Proposed Project also includes a shared street treatment on Maryland Street. This street would have no curbs and would be designed to prioritize pedestrian travel.

The Proposed Project's parking structures would be dispersed throughout the site, with access points and driveways that could create conflicts with pedestrians. These conflicts are generally expected and a necessary part of provision of off-street parking, and garage entrances would comply with appropriate design standards, which are meant to provide for the safety of all roadway users.

Thus, the pedestrian-related features of the proposed site plan would not result in hazardous pedestrian conditions or present barriers to pedestrian accessibility. The Proposed Project would accommodate the pedestrian trips it would generate. Therefore, the impact would be less than significant and no mitigation is required.

Although, as noted above, the Proposed Project's parking facility access points would comply with appropriate design standards, the less-than-significant effect of vehicle queuing across sidewalks would be minimized with implementation of Improvement Measure I-TR-B: Queue Abatement, to ensure that pedestrian travel is unimpeded.

Improvement Measure I-TR-B: Queue Abatement

It should be the responsibility of the owner/operator of any off-street parking facility with more than 20 parking spaces (excluding loading and car-share spaces) to ensure that vehicle queues do not occur regularly on the public right-of-way. A vehicle queue is defined as one or more vehicles (destined to the parking facility) blocking any portion of

any public street, alley, or sidewalk for a consecutive period of 3 minutes or longer on a daily or weekly basis.

If a recurring queue occurs, the owner/operator of the parking facility should employ abatement methods as needed to abate the queue. Appropriate abatement methods will vary depending on the characteristics and causes of the recurring queue, as well as the characteristics of the parking facility, the street(s) to which the facility connects, and the associated land uses (if applicable).

Suggested abatement methods include but are not limited to the following: redesign of facility to improve vehicle circulation and/or on-site queue capacity; employment of parking attendants; installation of LOT FULL signs with active management by parking attendants; use of valet parking or other space-efficient parking techniques; use of off-site parking facilities or shared parking with nearby uses; use of parking occupancy sensors and signage directing drivers to available spaces; TDM strategies such as additional bicycle parking, customer shuttles, delivery services; and/or parking demand management strategies such as parking time limits, paid parking, time-of-day parking surcharge, or validated parking.

If the Planning Director, or his or her designee, suspects that a recurring queue is present, the Planning Department should notify the property owner in writing. Upon request, the owner/operator should hire a qualified transportation consultant to evaluate the conditions at the site for no less than 7 days. The consultant should prepare a monitoring report to be submitted to the Planning Department for review. If the Planning Department determines that a recurring queue does exist, the facility owner/operator should have 90 days from the date of the written determination to abate the queue.

Impact TR-9: Existing pedestrian facilities in the vicinity of the project site, while incomplete, would not pose substantial hazards to pedestrian traffic generated by the Proposed Project. (*Less than Significant*)

The Proposed Project does not include improving pedestrian facilities outside the project site, except for improvements along its frontage to Illinois Street, as discussed above on pp. 4.E.45. There are sidewalks along most of the streets in the area surrounding the project site. Existing pedestrian conditions near the project site occasionally lack fully accessible facilities such as curb ramps. The Proposed Project would generate pedestrian trips to and from transit stops at 20th and Third streets for the T Third Muni light rail line, and on 22nd Street under the I-280 freeway for Caltrain. The addition of pedestrians to the sidewalks on 20th and 22nd streets is not expected to result in substantial overcrowding or otherwise create potentially hazardous conditions for pedestrians. Additionally, the 22 Fillmore terminal stop at 20th and Tennessee streets and the 48 Quintara/24th Street terminal stop at 20th and Third streets have substantial sidewalk space for waiting passengers.

In addition, as part of a separate and ongoing planning effort, the City is conducting a planning process, led by the Planning Department, to improve the public realm in the Central Waterfront and Dogpatch neighborhoods, known as the Central Waterfront/Dogpatch Public Realm Plan.

The Plan area includes the blocks between Illinois Street, Cesar Chavez Street, I-280, and Mariposa Street. This planning process is generally designed to improve sidewalks, pedestrian crossings, and lighting in the area, as well as enhance streetscape features. Upon completion, the Plan will consist of a comprehensive set of smaller projects, prioritized so that as funding becomes available, the individual components of the plan may be constructed over time. As the study area becomes more fully built out, pedestrian conditions will further improve.

Although the Central Waterfront/Dogpatch Public Realm Plan would improve conditions for pedestrians, the existing conditions provide adequate pedestrian circulation in the study area, and the Proposed Project's impact would be less than significant and no mitigation is required.

Impact TR-10: Existing pedestrian facilities at the Proposed Project's access points would present barriers to accessible pedestrian travel. (*Less than Significant with Mitigation*)

The Proposed Project's access points would use existing stop-controlled intersections on Illinois Street at 20th Street and 22nd Street and a new intersection at the new 21st Street to be added west of Illinois Street. Several barriers to accessible pedestrian travel currently exist between these intersections, including missing ADA curb ramps at the intersection of 22nd Street and Illinois Street and a narrow stretch of sidewalk with obstructions mid-block on Illinois Street between 22nd and 20th streets. This lack of an accessible path of travel to and from the project site would be a significant impact. Additionally, the Proposed Project's transit riders would cross Illinois Street at the intersections with 20th, 21st, and 22nd streets. Although the Proposed Project is proposing to construct a new signal at the new intersection at Illinois Street and 21st Street, pedestrian crossings at the all-way stop controlled intersections along Illinois Street at 20th and 22nd streets would be particularly challenging, given forecasted increases in traffic along Illinois Street. This would also be a significant impact.

In order to improve pedestrian circulation and safety adjacent to the project site, new traffic signals, ADA curb ramps and improved sidewalks would be required to be constructed along the project's Illinois Street frontage.

Mitigation Measure M-TR-10: Improve pedestrian facilities on Illinois Street adjacent to and leading to the project site.

As part of construction of the Proposed Project roadway network, the project sponsors shall fund the following improvements:

- Install ADA curb ramps on all corners at the intersection of 22nd Street and Illinois Street
- Signalize the intersections of Illinois Street with 20th and 22nd streets.
- Modify the sidewalk on the east side of Illinois Street between 22nd and 20th streets to a minimum of 10 feet. Relocate obstructions, such as fire hydrants and

power poles, as feasible, to ensure an accessible path of travel is provided to and from the Proposed Project.

With implementation of this mitigation measure, the Proposed Project would provide appropriate pedestrian access along the boundary of the project site and along corridors to nearby transit stops. The impact would be reduced to less-than-significant levels.

BICYCLE IMPACTS

Impact TR-11: The Proposed Project would not create potentially hazardous conditions for bicyclists and would not interfere with bicycle accessibility to the project site or adjoining areas. (*Less than Significant*)

The Proposed Project would provide bicycle parking in compliance with the requirements of the San Francisco Planning Code. Under either the Maximum Residential Scenario or the Maximum Commercial Scenario, residential buildings with more than 50 residential units would be required to provide 25 Class 1 bicycle parking spaces (lockers, monitored bike parking, or other restricted-access parking areas) plus one additional Class 1 space for every four residential units after the first 50 units.[57] Commercial uses would be required to provide three bicycle parking spaces for buildings with 10,000 to 20,000 square feet of professional services space or 20,000 to 50,000 square feet of restaurant or personal services space; six bicycle parking spaces for buildings with 20,000 to 50,000 square feet of professional services space or 50,000 to 100,000 square feet of restaurant or personal services space; and 12 spaces for buildings with over 50,000 square feet of professional services space or 100,000 square feet of restaurant or personal services space. The Maximum Residential Scenario proposes 1,142 Class 1 bicycle parking spaces and 514 Class 2 (unprotected bike racks) bicycle parking spaces. The Maximum Commercial Scenario proposes 995 Class 1 and 475 Class 2 bicycle parking spaces. These amounts of bicycle parking would meet or exceed Planning Code requirements.

On the project site, bicycle facilities are proposed along 20th Street, 22nd Street, and Maryland Street. The same facilities would be provided with both the Maximum Residential Scenario and the Maximum Commercial Scenario. These roadways provide direct connections to and from external roadways such as Illinois Street for travel to and from the project site. The proposal for 22nd Street between Illinois Street and the new Louisiana Street includes a Class III shared bicycle lane in the eastbound direction and a striped and signed Class II bicycle lane in the westbound direction. The bicycle facilities on other streets on the project site would be Class III shared bicycle lanes with sharrows painted on the roadway surface. The Proposed Project also includes a bi-directional bicycle path along the east side of the project site on the waterfront, separate from

[57] Thus, a 100-unit residential building would be required to provide a total of 38 Class I bicycle parking spaces (25 for the first 50 residential units plus 12.5 for the remaining 50 units).

any vehicle travel lane, to be part of the Blue Greenway and Bay Trail and connecting the eastern waterfront with The Embarcadero.

The project site is within convenient bicycling distance of office and retail uses in the Dogpatch, Mission Bay, Mission, Potrero Hill, SOMA, and Bayview neighborhoods. There are bicycle routes near the project site, including bicycle lanes on Illinois Street (Route 5), Terry A Francois Boulevard (Route 5), 16th Street (Route 40), Fourth Street (Route 40), and several blocks of Cesar Chavez Street (Route 60), and bicycle routes on Indiana Street (Route 7), a portion of Mariposa Street and Minnesota Street (Route 7), and Cesar Chavez Street (Route 60).

Bicyclists heading to or from the south would use Illinois Street, the current alignment of the Bay Trail, to connect to Route 60, which provides connections to farther destinations and designated bicycle routes. Bicyclists heading to or from the north would use Terry A Francois Boulevard or Fourth Street, both designated bicycle routes, to connect to Routes 11, 36, and 40 that provide connections to farther destinations and designated bicycle routes. Routes 40, 44, and 60 provide east-west connections that cross I-80 into the Mission District. While the existing bicycle network does not include a designated east-west route that connects to the project site between Mariposa Street and Cesar Chavez Street, bicyclists can use 20th Street, a two-lane roadway with stop-controlled intersections that travels through residential areas and small neighborhood commercial districts, to travel to and from the Potrero Hill neighborhood directly to the project site. The intersection of 20th Street and the proposed Louisiana Street on the project site would allow bicyclists to connect to the proposed Blue Greenway and Bay Trail along the shoreline.

As discussed above, the Proposed Project would comply with the Planning Code requirements for bicycle parking, would not increase bicycle traffic to a level that adversely affects bicycle facilities in the area (the bicycle mode share of the Proposed Project would be similar to the mode share in other parts of San Francisco with substantial bicycle infrastructure), and would not create a new hazard or substantial conflict for bicycling. The Proposed Project would not adversely affect bicycle accessibility to the project site or adjoining areas. Thus, the Proposed Project's impact on bicycle facilities and circulation would be less than significant.

LOADING IMPACTS

Impact TR-12: The Proposed Project's loading demand during the peak loading hour would not be adequately accommodated by proposed on-site/off-street loading supply or in proposed on-street loading zones, which may create hazardous conditions or significant delays for transit, bicycles or pedestrians. (*Significant and Unavoidable with Mitigation*)

To minimize conflicts with pedestrians and bicyclists, a maximum of one loading access point would be permitted for each building frontage where off-street loading is planned. This

requirement would minimize curb cuts and prioritize pedestrian movement where a sidewalk is present. Exterior loading docks, where loading and unloading occurs outside of a building, would not be permitted, and commercial loading entries would be required to be at least 60 feet from the corner of an intersection. Waste collection facilities would be provided separately for each building and would be visually screened from the public right-of-way, minimizing conflicts with travelways. For the residential trash/recycling pickup, trash containers would be transported by the building staff from the trash rooms to the curb at the time of trash pickup and returned following pickup, or Recology personnel would access the trash rooms to retrieve the trash containers. For the commercial/non-residential uses, trash would be carted to the curb by building management or tenants of the commercial spaces, or Recology personnel would access the trash rooms to retrieve trash containers. Building management would coordinate with the appropriate disposal and recycling company regarding the specific locations of garbage containers.

The Proposed Project includes a shared street treatment on Maryland Street that would allow limited or no vehicular access at some times, either for special events or at designated times of day. However, for all buildings fronting Maryland Street service entrances would be provided on 21st, Louisiana, and 22nd streets (although on-street loading could still occur from Maryland Street during periods when the shared street was open to vehicular access). Thus, limiting or prohibiting delivery vehicles from accessing Maryland Street from time to time would not result in a significant impact because building service access would be retained.

Despite the fact that the Proposed Project would minimize loading conflicts with bicycles and pedestrians and would not result in significant loading impacts on the shared street, there would be a loading supply shortfall that would result in significant impacts.

Overall, the Maximum Residential Scenario would generate a demand for approximately 640 daily delivery and service vehicle trips, and the Maximum Commercial Scenario would generate a demand for approximately 855 daily delivery vehicle and service vehicle trips. Deliveries would be primarily small trucks and vans, typical of deliveries throughout the City.

The residential units in the Maximum Residential Scenario would generate a demand for four loading spaces in the average loading hour and five loading spaces in the peak loading hour (generally 1 hour between the hours of 10:00 a.m. and 1:00 p.m.). The residential units in the Maximum Commercial Scenario would generate a demand for two loading spaces in both the average and peak loading hours (see Table 4.E.23: Delivery/Service Vehicle Trips and Loading Demand).

The demand for loading spaces for non-residential uses would range from 26 spaces in the Maximum Residential Scenario to 38 spaces in the Maximum Commercial Scenario in the

average loading hour. In the peak loading hour, the demand for non-residential uses would be for 32 loading spaces in the Maximum Residential Scenario and 48 loading spaces in the Maximum Commercial Scenario.

Table 4.E.23: Delivery/Service Vehicle Trips and Loading Demand

Land Use	Size	Daily Truck Trip Generation Rate	Daily Truck Trip Generation[1]	Average Hour Loading Space Demand	Peak Hour Loading Space Demand
Maximum Residential Scenario					
Residential	3,025 units	0.03	79	4	5
Office/PDR	1,102,250 gsf	0.21	262	12	13
Retail	269,495 gsf	0.22	59	3	3
Restaurant	67,375 gsf	3.60	243	11	14
Total	**-**	**-**	**642**	**30**	**37**
Maximum Commercial Scenario					
Residential	1,645 units	0.03	43	2	2
Office/PDR	2,262,350 gsf	0.21	505	23	29
Retail	275,075 gsf	0.22	61	3	4
Restaurant	68,765 gsf	3.60	248	11	14
Total	**-**	**-**	**856**	**40**	**50**

Note: The sums of individual land use loading demands may not add to the total shown due to rounding.
[1] *SF Guidelines*, Table H-1.

Sources: SF Guidelines, 2002; Fehr & Peers, 2016; Adavant Consulting, 2015

The Proposed Project would include on-street and/or off-street loading spaces based on square footage of gross leasable area.[58] Table 4.E.24: Proposed Loading Space Ratios presents the minimum loading requirements that would be applicable to new uses on the project site under both the Maximum Residential Scenario and the Maximum Commercial Scenario as described in the Proposed Project's Design for Development guidelines. Each residential building would include one or two on-street or off-street loading spaces, depending on the size of the building. Commercial/office buildings with under 50,000 square feet of gross leasable area would not be required to provide loading spaces; between 50,001 and 100,000 square feet, one on-street loading space would be required; between 100,001 and 250,000 square feet, one off-street loading space would be required; between 250,001 and 500,000 square feet, two off-street loading spaces would be required; and over 500,000 square feet, three off-street loading spaces would be

[58] Forest City, *Pier 70 Design Guidelines*, Section 9.9 Loading and Services, p. 262-263. DRAFT April 1, 2015.

required. These requirements are similar to, but not the same as, Planning Code requirements for loading.

Table 4.E.24: Proposed Loading Space Ratios

Use	Gross Leasable Area	Minimum	Loading Space Type
Commercial/Office	0-50,000 GLA	Not Required	
	50,001-100,000 GLA	1	On-street
	100,001-250,000 GLA	1	Off-street
	250,001-500,000 GLA	2	Off-street
	500,001 and above GLA	3	Off-street
Retail	0-10,000 GLA	Not Required	
	10,001-30,000 GLA	1	On-street
	30,001-50,000 GLA	2	Off-street
	50,001 GLA and above	1 per 25,000 GLA	Off-street
Residential	0-225,000 GLA	1	On-street or Off-Street
	225,001 GLA and above	2	On-street or Off-street
RALI (Retail/Arts/Light Industrial)	0-50,000 GLA	Not required	
	50,001-150,000 GLA	1	On-street
	150,001-250,000 GLA	2	Off-street

Note:
GLA = Gross Leasable Area.

Source: Forest City, *Pier 70 SUD Design Guidelines*, DRAFT April 1, 2016.

When applied to the specific buildings proposed as part of the Proposed Project, the Proposed Project's loading supply would be 28 spaces in the Maximum Residential Scenario and 25 spaces in the Maximum Commercial Scenario. This would result in a shortfall of nine loading spaces during the peak hour of loading for the Maximum Residential Scenario and a shortfall of 25 loading spaces during the peak hour of loading for the Maximum Commercial Scenario.

Most residential loading demand would be generated when tenants move in and out of a residential unit. This loading would be either from off-street loading facilities or on-street, likely near the building entrances, depending on the size of building and loading facilities provided in the building. For residential buildings with off-street facilities, new tenants would coordinate with building management to reserve space at the off-street loading facilities provided by that building. For residential buildings with no off-street facilities, new tenants would either use on-street loading facilities, if available, or they could apply for a temporary "no parking" permit with SFMTA, which prohibits on-street public parking for a temporary period to allow for moving vans and trucks to park. Residential move-ins and move-outs are typically a relatively infrequent occurrence, except when a building is first occupied, such that the off-street loading facilities and

on-street curb space would likely be adequate for move-ins and move-outs. Residential buildings would generate parcel delivery vehicles (e.g., United Parcel Service and Federal Express vans) in addition to large moving vans. These parcel deliveries are usually short and would not substantially affect circulation around the project site. The one or two on-street or off-street loading spaces that would be required for each residential building would likely satisfy the residential loading demand. Therefore, extra on-street loading spaces would not be necessary in residential areas of the project site.

Non-residential deliveries of goods to businesses such as restaurants and retail tenants would occur at on-street loading spaces at least 75 feet long or in off-street loading areas as required for buildings serving commercial/office and RALI uses with more than 100,000 gross leasable square feet. Given the forecast loading space shortfalls for both the Maximum Residential Scenario and the Maximum Commercial Scenario, service and delivery vehicles may occasionally park in regular public parking spaces or double-park and partially block local streets while loading and unloading goods. Although this is a relatively common occurrence in San Francisco and a small shortfall would not be unusual, the scale of the Proposed Project's loading shortfall combined with its relatively narrow streets would constitute a significant impact.

Other than increasing the off-street loading space requirements in the Design for Development documentation to better match demand, it may be beyond the project sponsors' control to fully mitigate the significant impact. However, there are measures the project sponsors could take to reduce the severity of the impact. Those measures are outlined in Mitigation Measure M-TR-12, below.

Mitigation Measure M-TR-12A: Coordinate Deliveries

The Project's Transportation Coordinator shall coordinate with building tenants and delivery services to minimize deliveries during a.m. and p.m. peak periods.

Although many deliveries cannot be limited to specific hours, the Transportation Coordinator shall work with tenants to find opportunities to consolidate deliveries and reduce the need for peak period deliveries, where possible.

Mitigation Measure M-TR-12B: Monitor loading activity and convert general purpose on-street parking spaces to commercial loading spaces, as needed.

After completion of the first phase of the Proposed Project, and prior to approval of each subsequent phase, the project sponsors shall conduct a study of utilization of on- and off-street commercial loading spaces. The methodology for the study shall be reviewed and approved by the Planning Department prior to completion. If the result of the study indicates that fewer than 15 percent of the commercial loading spaces are available during the peak loading period, the project sponsors shall incorporate measures to convert existing or proposed general purpose on-street parking spaces to commercial parking spaces in addition to the required off-street spaces.

Implementation of Mitigation Measures M-TR-12A and M-TR-12B may not fully resolve the loading shortfall, as the project's Transportation Coordinator may not be able to shift on-site delivery times. Additionally, there may not be an adequate supply of on-street general purpose parking spaces to convert to commercial loading spaces such that the loading shortfall can be accommodated on-street. Thus, even with implementation of Mitigation Measures M-TR-12A and M-TR-12B, the Proposed Project's loading impacts would remain significant and unavoidable.

EMERGENCY ACCESS

Impact TR-13: The Proposed Project would not result in significant impacts on emergency access to the project site or adjacent locations. (*Less than Significant*)

Emergency access to the project site would remain essentially unchanged compared to existing conditions. Emergency vehicles would continue to access the site from Third Street, Illinois Street, 20th Street, and 22nd Street. Additionally, the Proposed Project would add a new connection to the site from Illinois Street at 21st Street. Aside from the general increase in vehicle traffic described in the Proposed Project's Transportation Impact Study that would result from the additional activity at the site, the Proposed Project would not inhibit emergency access to the project site.

Internal to the project site, most roadways are proposed to have at least 22 feet curb-to-curb width to accommodate emergency vehicles (including bicycle lanes but not including parking bays). A portion of the new 21st Street between Louisiana Street and the waterfront open space would have a clear right-of-way of about 20 feet. Also, between 20th and 21st streets, Louisiana Street would have a single 15-foot travel lane and one 12-foot loading bay. The Design for Development document (*Pier 70 SUD Design Guidelines*) presents turning radii analyses completed for WB-40 (wheelbase of 40 inches), WB-50, and WB-62 design vehicles (i.e., large semi-trailer trucks) that shows all vehicle movements could be achieved with the proposed network.[59] Standard emergency vehicles in San Francisco typically have better maneuverability than these design vehicles; thus, emergency vehicle turning radii would be accommodated by the Proposed Project's street layout.

As discussed for loading, if Maryland Street is to be closed to vehicular access on some occasions, the planned service passageways would provide access to emergency services providers during those temporary closure periods.

[59] *Transportation Impact Study* Section 5.7, p. 125, citing Forest City, *Pier 70 Design Guidelines*, p. 262 DRAFT, April 1, 2015.

Development of the project site, and associated increases in vehicles, pedestrians, and bicycle travel would not substantially affect emergency vehicle access to other buildings and areas within adjacent Mission Bay, including the UCSF campus, which is just over 0.5 mile from the project site. The UCSF Medical Center Phase 1 contains an emergency room and urgent care center for the UCSF Children's Hospital at the southern end of the hospital complex, with access from Fourth Street, north of Mariposa Street. Access to the Fourth Street urgent care center is directly from Mariposa Street, or from Owens Street via the Southern Connector Road (an internal road within the Medical Center campus site that provides access between the south Medical Center entrance and the parking facilities). Owens Street can be accessed from 16th Street, the I-280 northbound off-ramp, and Mariposa Street. A number of roadway improvements are currently under construction as part of Phase 1 of the UCSF Medical Center that enhance access to UCSF and critical hospital services, including extending Owens Street between Mariposa and 16th streets, widening Mariposa Street to five lanes, installing a new signal at the Mariposa Street and Owens Street intersection, adding a lane on the I-280 northbound off-ramp at Mariposa Street, and constructing a new signal at Mariposa Street at the I-280 northbound off-ramp. On Mariposa Street, if necessary, emergency vehicles and other persons accessing the emergency room and urgent care center in their personal vehicles during an emergency would be able to travel within the center left-turn lane to access the intersection of Fourth and Mariposa streets. Therefore, circulation in the area is expected to improve with completion of these new roadway connections within Mission Bay. Further, an emergency route along Mariposa Street (the center left-turn lane) and along Third Street (the transit-only lanes) would be available along key corridors in the study area. Therefore, the Proposed Project would not result in substantial increases in vehicle delay for emergency vehicles or other persons accessing the emergency room and urgent care center in their personal vehicles.

During events at AT&T Park, approximately 1.5 miles from the project site, pre-event and post-event vehicular traffic are managed to minimize impacts on emergency vehicle circulation and access. During pre-event conditions at AT&T Park, up to 21 Parking Control Officers (PCOs) are stationed at 17 locations. During post-event conditions, up to 19 PCOs are stationed at 14 locations. This includes intersections along Third Street, Mission Rock Street, and Terry A Francois Boulevard. If necessary, emergency vehicles would be able to travel on Muni's light rail right-of-way in the median of Third Street. Persons accessing the UCSF Medical Center emergency room and urgent care center in their personal vehicles during an emergency would, if necessary, also be able to utilize the transit-only lanes to bypass congested segments on 16th Street. On Mariposa Street, emergency vehicles and other persons accessing the emergency room and urgent care center in their personal vehicles during an emergency would be able to travel within the center left-turn lane to access the intersection of Fourth and Mariposa streets. PCOs deployed for major events at AT&T Park would have the capability to respond to conflicts between event center traffic and UCSF hospital access. PCOs also have the capability to radio

ahead to other downstream PCOs to inform them of approaching vehicles requiring emergency access. Although the Proposed Project may increase traffic in the vicinity of AT&T Park on event days, the Proposed Project's increment of increase is likely small relative to the event-related traffic, and the event traffic management systems described above are designed to adapt to changes in traffic and would remain effective with implementation of the Proposed Project.

In the circumstance of simultaneous events at AT&T Park and the Proposed Project site, the event sponsors at the Proposed Project would be required to develop a TDM Plan as noted earlier that accounts for projected congestion in the area. Additionally, event traffic management systems at AT&T Park are reviewed and refined continuously to plan for such simultaneous events. Therefore, both events would likely develop refinements to their plans that ensure emergency vehicle circulation is accommodated.

Although not required to address significant impacts, implementation of Improvement Measure I-TR-C: Strategies to Enhance Transportation Conditions During Events would ensure that events at Pier 70 are coordinated with events at AT&T Park to further reduce the less-than-significant effects of congestion on emergency vehicle circulation.

> **Improvement Measure I-TR-C: Strategies to Enhance Transportation Conditions During Events.**
>
> The project's Transportation Coordinator should participate as a member of the Mission Bay Ballpark Transportation Coordination Committee (MBBTCC) and provide at least 1-month notification where feasible prior to the start of any then known event that would overlap with an event at AT&T Park. The City and the project sponsors should meet to discuss transportation and scheduling logistics for occasions with multiple events in the area.

The San Francisco Fire Department will be required to review and approve the internal circulation plan for Pier 70 prior to construction of any roadways. Because the Proposed Project would not substantially interfere with emergency access and, with clearance from the Fire Department, the Proposed Project's street system would accommodate emergency vehicle circulation on-site, the Proposed Project would have a less-than-significant impact on emergency access.

CUMULATIVE IMPACTS

The geographic context for the analysis of cumulative impacts is the transportation study area shown on Figure 4.E.1: Transportation Study Area and Study Intersections, on p. 4.E.2. As discussed in Section 4.A, Introduction to Chapter 4, on pp. 4.A.12-4.A.18, the cumulative impacts analysis takes into account reasonably foreseeable future development projects in the study area that would contribute to use of the transportation system. The 2040 future cumulative baseline is

established using the SF-CHAMP travel demand model that uses a forecast of citywide growth. The cumulative analysis for transportation is, therefore, a projections approach rather than a list-based approach. However, the model has been reviewed to ensure that it includes travel from expected growth in and near the transportation study area in addition to projects included in the Baseline Conditions, including that from build-out of Mission Bay, the Golden State Warriors Event Center and Mixed-Use Development Project in Mission Bay, the UCSF Long Range Development Plan, the Mission Rock Mixed-Use Project, and various individual development projects in the Eastern Neighborhoods Plan area.

The 2040 SF-CHAMP model run also accounts for reasonably foreseeable transportation improvements. Key improvements assumed in addition to those in the Baseline Conditions are those in the *San Francisco Bicycle Plan* and Second Street Improvement Project, further transit improvements approved in Muni Forward (formerly the Transit Effectiveness Project), and further from the project site the Van Ness BRT project and the Geary BRT project.

Included in the list of reasonably foreseeable developments is the new Warriors Arena in Mission Bay. Because the Arena will affect conditions in the study area in Cumulative conditions, a summary of the ways in which the Arena intends to manage game day conditions is provided for informational purposes.[60]

During events with more than 12,500 attendees, traffic management procedures similar to those employed at AT&T Park on game days will be implemented, including PCOs stationed at key intersections in the project vicinity to manage vehicular, transit, bicycle, and pedestrian flows. SFMTA fare inspectors will be on-hand to manage flows of passengers onto the transit vehicles. Additionally, three permanent Variable Message Signs will be installed to provide traffic alerts, messages, and alternate driving routes for drivers traveling to the event center, to destinations in the vicinity, or through the area. Overall, the Warriors Arena project was found to have significant effects on the transportation and circulation network, which were evaluated and disclosed in that project's EIR.

[60] The following text is from *Event Center and Mixed-Use Development at Mission Bay Blocks 29-32 Subsequent Environmental Impact Report*, pp. 5.2-58 and 5.2-60, Planning Department Case No. 2014.1441E, State Clearinghouse No. 2014112045, certified November 3, 2015. Available at http://sf-planning.org/environmental-impact-reports-negative-declarations. Accessed 7/11/16.

CUMULATIVE CONSTRUCTION IMPACTS

Impact C-TR-1: Construction of the Proposed Project would occur over an approximately 11-year timeframe and may overlap with construction of other projects in the vicinity. (*Less than Significant*)

Construction staging for most or all of the proposed infrastructure, structures, and landscaping would occur on the project site, based on the size of the site. Construction activities for the Proposed Project would likely overlap with construction of the 20th Street Historic Core Project on Pier 70 and Crane Cove Park, both adjacent to the project site, one or more of the remaining development projects in Mission Bay, the new Warriors Arena, and the Mission Rock Mixed-Use Project, among other construction projects expected to occur in the vicinity in the next 10+ years. The precise timing of these projects is not known at present. Construction vehicles for the Proposed Project and other nearby projects would use many of the same roads and freeway ramps. As part of the construction permitting process, the construction manager for each project would be required to meet with various City departments and the TASC to develop a detailed plan that includes coordination with other nearby construction activities. The plan would address construction vehicle routing, traffic control, transit routes, and pedestrian movements adjacent to the construction area during any overlapping construction periods. Due to the detailed planning and coordination requirements described above, the Proposed Project would not contribute considerably to a significant cumulative impact in the area.

The less-than-significant impacts would be further reduced with implementation of Improvement Measure I-TR-A: Construction Management Plan identified above under Impact TR-1.

CUMULATIVE VMT MPACTS

Impact C-TR-2: The Proposed Project's incremental effects on regional VMT would not be significant, when viewed in combination with past, present, and reasonably foreseeable future projects. (*Less than Significant*)

San Francisco 2040 cumulative conditions were projected using an SF-CHAMP model run, using the same methodology as outlined for existing conditions, but including residential and job growth estimates and reasonably foreseeable transportation investments through 2040. Projected 2040 average daily VMT per capita for residential uses is 6.4 for the transportation analysis zone where the project site is located (TAZ 559). This is 60 percent below the 2040 projected regional average daily VMT per capita of 16.1 for residential uses. Projected 2040 average daily VMT per capita for office uses is 10.1 for the project site's TAZ. This is 41 percent below the 2040 projected regional average daily VMT per capita of 17.1 for office uses. Projected 2040 average daily VMT per capita for retail uses is 11.9 for the project site's TAZ. This is 18 percent below the 2040 projected regional average daily VMT per capita of 14.6 for retail uses.

Because the project site is located in an area where VMT is greater than 15 percent below the projected 2040 regional averages for residential, office, and retail uses, the Proposed Project's incremental effects would not be significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of reasonably foreseeable future projects

The Proposed Project is not a transportation project. However, the Proposed Project would include features that would alter the transportation network. As discussed in the evaluation of project impacts, these features fit within the general types of projects identified above that would not substantially induce automobile travel.[61] Therefore, the Proposed Project would not have a considerable contribution to any substantial cumulative increase in automobile travel.

Based on the above factors and data demonstrating San Francisco's low per-household GHG consumption, GHG reductions exceeding BAAQMD and state GHG reductions goals, and consistency with *Plan Bay Area*, the Planning Department has determined that regardless of any increased volume of VMT and GHG emissions, if a project is located within an area where the percent by which per capita VMT is more than 15 percent below the projected 2040 per capita regional averages for residential, office, and retail uses, the project's incremental effects would not be significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

Therefore, the proposed project would not have a considerable contribution to any substantial cumulative increase in automobile travel. Cumulative VMT impacts are considered ***less than significant***.

CUMULATIVE TRAFFIC IMPACTS

The Proposed Project would have a considerable contribution to a significant cumulative impact to traffic if it, in combination with other long-term forecasted growth by year 2040, contributed to a major traffic hazard in the study area. In general, the Proposed Project and other local and regional growth would add vehicle trips to the surrounding roadways; however, a general increase in traffic in and of itself would not be considered a traffic hazard.

Impact C-TR-3: The Proposed Project would not contribute to a major traffic hazard. (*Less than Significant*)

Consistent with the City's *Better Streets Plan* and Transit First Policy, roadway improvements throughout the City – including the study area – are contemplated to improve overall safety and encourage non-automobile modes of transportation. Although growth is expected to increase

[61] Ibid.

traffic volumes somewhat in the future, that increase alone is not considered a significant hazard. As described earlier, the Proposed Project's internal roadway system would be designed to reduce traffic speeds and promote walking and bicycling and is not expected to create a major traffic hazard. Other long-term forecasted changes to the study area are also anticipated to encourage bicycling, pedestrian, and transit use, and are expected to further enhance the area safety.

The new Warriors Arena will be constructed and operational in the Cumulative Conditions. However, that project includes a detailed transportation management plan to ensure that travelers to the area are accommodated efficiently with minimal disruptions to bicycle, pedestrian, transit, and emergency vehicle access in the study area. Thus, no significant cumulative long-term traffic hazards would be expected in the study area, and the Proposed Project would not contribute to any cumulative traffic hazard impacts.

CUMULATIVE TRANSIT IMPACTS

Future year 2040 Cumulative ridership projections were developed based on transit growth projections developed for the Transit Effectiveness Project (Muni Forward) and provided by the Planning Department. Forecast future hourly ridership demand was then compared to expected hourly capacity, as determined by the likely route and headway changes identified in the Muni Forward to estimate capacity utilization under 2040 Cumulative conditions. The year 2040 Cumulative analysis assumes changes to the capacity of the lines as identified by route changes and headway changes indicated in future improvements under Muni Forward. The changes incorporated in the Cumulative conditions analysis are:

- On the T Third Muni Metro line, peak period headways would be reduced and two-car trains would be operated.
- The 10 Townsend bus route would be rerouted off Townsend Street down Fourth Street. From Fourth Street, the route would extend through Mission Bay to new proposed street segments on Seventh Street between Mission Bay Boulevard and Hubble Street, on Hubble Street between Seventh and 16th streets, on 16th Street between Hubble and Connecticut streets, and on Connecticut Street between 16th and 17th streets. Peak period headways would be reduced from 20 to 6 minutes. Midday headways would be reduced from 20 to 12 minutes. The 10 Townsend would be renamed the 10 Sansome.
- The 22 Fillmore trolley bus route would extend down 16th Street and Third Street to the UCSF Mission Bay campus and is part of a BRT proposal that would remove a general-use travel lane on 16th Street through the study area. The 33 Stanyan would be re-routed from Potrero to cover the portion of the 22 route currently serving 18th Street.
- The 48 Quintara/24th Street bus route would operate all day from 48th Avenue to the Hunters Point Naval Shipyard. At 25th and Connecticut streets, this route would no longer follow the existing alignment and would change to follow the existing 19 Polk route to Hunters Point via Evans and Innes avenues. This would provide a new connection from the Mission District, Noe Valley, and the Sunset to Third Street and

Hunters Point. This route will also be re-branded as the 58 as part of Muni Forward improvements.

The transit person-trips forecast to be generated by the Proposed Project were compared to the projections for Cumulative conditions at the four Muni screenlines as well as on an individual route basis for the routes that serve the project site. Table 4.E.25: Muni Downtown Screenlines – Cumulative Conditions A.M. Peak Hour and Table 4.E.26: Muni Downtown Screenlines – Cumulative Conditions P.M. Peak Hour summarize Cumulative 2040 transit. A cumulatively significant impact would occur if reasonably foreseeable development (i.e., cumulative conditions) would cause any of the individual routes or Downtown screenlines to exceed their capacity utilization thresholds, or would increase ridership by more than 5 percent if individual routes or Downtown screenlines are already exceeding their capacity utilization thresholds under Baseline conditions. The Proposed Project would be considered to have a considerable contribution to a significant cumulative impact if it would contribute more than 5 percent of the forecasted cumulative growth in ridership to any of the individual routes serving the project site or to any Downtown screenlines that are projected to experience a significant cumulative impact.

Impact C-TR-4: The Proposed Project would contribute considerably to significant cumulative transit impacts on the 48 Quintara/24th Street and 22 Fillmore bus routes. (*Significant and Unavoidable with Mitigation*)

In combination with reasonably foreseeable development expected to occur under Cumulative Conditions, the Proposed Project would cause the 48 Quintara/24th Street bus route to exceed 85 percent utilization in both the Maximum Residential Scenario and the Maximum Commercial Scenario during the a.m. and p.m. peak hours. The Proposed Project would contribute 48 to 61 percent of the ridership on this bus route in the a.m. peak hour and 53 to 60 percent of the ridership in the p.m. peak hour. This would be a considerable contribution to a significant cumulative impact on individual transit routes.

Mitigation Measure M-TR-5, to increase capacity on the 48 Quintara/24th Street bus route, as presented above under Impact TR-5, could reduce the Proposed Project's contribution to this significant cumulative impact. Under the Maximum Commercial Scenario, Mitigation Measure M-TR-5 would be adequate to reduce the Proposed Project's contribution to the significant cumulative impact to not considerable. Under the Maximum Residential Scenario, the Proposed Project's contribution would remain considerable even with the implementation of Mitigation Measure M-TR-5. Therefore, additional mitigation would be necessary for the Maximum Residential Scenario to reduce the considerable contribution to the significant cumulative impact on Muni service on this route.

Table 4.E.25: Muni Downtown Screenlines – Cumulative Conditions A.M. Peak Hour

Muni Screenline	Baseline			Cumulative			Cumulative Plus Project – Residential			Cumulative Plus Project – Commercial		
	Ridership	Capacity	Utilization	Ridership	Capacity	Utilization	Project Trips	Ridership	Utilization	Project Trips	Ridership	Utilization
Northeast												
Kearny/Stockton	2,273	3,157	72%	7,394	9,473	78%	0	7,394	78%	0	7,394	78%
Other lines	710	1,141	62%	758	1,785	42%	54	812	45%	37	795	45%
Screenline Total	2,983	4,298	69%	*8,152*	*11,258*	*72%*	*54*	*8,206*	*73%*	*37*	*8,189*	*73%*
Northwest												
Geary	2,302	3,764	61%	2,673	3,763	71%	0	2,673	71%	0	2,673	71%
California	1,436	2,010	71%	1,989	2,306	**86%**	0	1,989	**86%**	0	1,989	**86%**
Sutter/Clement	514	630	82%	581	756	77%	0	581	77%	0	581	77%
Fulton/Hayes	1,505	2,237	67%	1,962	1,977	**99%**	0	1,962	**99%**	0	1,962	**99%**
Balboa	553	1,008	55%	690	1,008	68%	0	690	68%	0	690	68%
Screenline Total	6,310	9,649	65%	*7,895*	*9,810*	80%	*0*	*7,895*	*80%*	*0*	*7,895*	*80%*
Southeast												
Third Street	1,025	3,808	27%	2,422	5,712	42%	215	2,637	46%	152	2,574	45%
Mission	2,155	2,632	82%	3,117	3,008	**104%**	0	3,117	**104%**	0	3,117	**104%**
San Bruno/Bayshore	1,867	2,197	85%	1,952	2,197	**89%**	0	1,952	**89%**	0	1,952	**89%**
Other lines	1,466	1,756	83%	1,795	2,027	**89%**	81	1,876	**93%**	101	1,896	**94%**
Screenline Total	6,513	10,393	63%	*9,286*	*12,944*	72%	*296*	*9,582*	*74%*	*253*	*9,539*	*74%*

Table 4.E.25 Continued

Muni Screenline	Baseline			Cumulative			Cumulative Plus Project – Residential			Cumulative Plus Project – Commercial		
	Ridership	Capacity	Utilization	Ridership	Capacity	Utilization	Project Trips	Ridership	Utilization	Project Trips	Ridership	Utilization
Southwest												
Subway lines	6,783	7,020	97%	6,314	7,020	**90%**	323	6,637	**95%**	410	6,724	**96%**
Haight/Noriega	1,178	1,596	74%	1,415	1,596	**89%**	0	1,415	**89%**	0	1,415	**89%**
Other lines	474	560	85%	175	560	31%	0	175	31%	0	175	31%
Screenline Total	8,435	9,176	**92%**	*7,904*	*9,176*	**86%**	*323*	*8,227*	***90%***	*410*	*8,314*	***91%***
Muni Screenlines Total	24,352	33,515	73%	*33,237*	*43,188*	*77%*	*673*	*33,910*	*79%*	*700*	*33,937*	*79%*
Individual Routes												
22 Fillmore IB	501	882	57%	539	882	61%	163	702	80%	129	668	76%
22 Fillmore OB	340	882	39%	455	882	52%	245	700	79%	350	805	**91%**
48 Quintara / 24th Street IB	119	252	47%	95	252	38%	149	244	**97%**	118	213	85%
48 Quintara / 24th Street OB	199	252	79%	244	252	**97%**	224	468	**186%**	319	563	**223%**
T Third IB	1,097	3,808	29%	1,554	5,712	27%	323	1,877	33%	410	1,964	34%
T Third OB	1,931	3,808	51%	3,327	5,712	58%	215	3,542	62%	152	3,479	61%

Note:

Bold indicates capacity utilization of 85 percent or greater.

Source: San Francisco Planning Department, "Transit Data for Transportation Impact Studies," May 2015; Fehr & Peers, 2016. See Appendix D in the Transportation Impact Study for Transit Line Capacity Calculations.

Table 4.E.26: Muni Downtown Screenlines – Cumulative Conditions P.M. Peak Hour

Muni Screenline	Baseline			Cumulative			Cumulative Plus Project – Residential			Cumulative Plus Project – Commercial		
	Ridership	Capacity	Utilization	Ridership	Capacity	Utilization	Project Trips	Ridership	Utilization	Project Trips	Ridership	Utilization
Northeast												
Kearny/Stockton	2,444	3,327	73%	6,295	8,329	76%	0	6,295	76%	0	6,295	76%
Other lines	903	1,155	78%	1,229	2,065	60%	71	1,300	63%	51	1,280	62%
Screenline Total	*3,347*	*4,482*	*75%*	*7,524*	*10,394*	*72%*	*71*	*7,595*	*73%*	*51*	*7,575*	*73%*
Northwest												
Geary	2,913	3,621	80%	2,996	3,621	83%	0	2,996	83%	0	2,996	83%
California	1,349	1,752	77%	1,766	2,021	**87%**	0	1,766	**87%**	0	1,766	**87%**
Sutter/Clement	523	630	83%	749	756	**99%**	0	749	**99%**	0	749	**99%**
Fulton/Hayes	1,544	1,838	84%	1,762	1,878	**94%**	0	1,762	**94%**	0	1,762	**94%**
Balboa	537	974	55%	776	974	80%	0	776	80%	0	776	80%
Screenline Total	6,866	8,815	78%	*8,049*	*9,250*	**87%**	*0*	*8,049*	***87%***	*0*	*8,049*	***87%***
Southeast												
Third Street	1,836	3,808	48%	2,300	5,712	40%	280	2,580	45%	208	2,508	44%
Mission	1,927	2,632	73%	2,673	3,008	**89%**	0	2,673	**89%**	0	2,673	**89%**
San Bruno/Bayshore	1,761	2,134	83%	1,817	2,134	**85%**	0	1,817	**85%**	0	1,817	**85%**
Other lines	1,213	1,675	72%	1,582	1,927	82%	76	1,658	**86%**	87	1,669	**87%**
Screenline Total	*6,737*	*10,249*	*66%*	*8,372*	*12,781*	66%	*356*	*8,728*	*68%*	*295*	*8,667*	*68%*

Table 4.E.26 Continued

Muni Screenline	Baseline			Cumulative			Cumulative Plus Project – Residential			Cumulative Plus Project – Commercial		
	Ridership	Capacity	Utilization	Ridership	Capacity	Utilization	Project Trips	Ridership	Utilization	Project Trips	Ridership	Utilization
Southwest												
Subway lines	5,433	6,804	80%	5,692	6,804	84%	304	5,996	**88%**	354	6,046	**89%**
Haight/Noriega	1,065	1,596	67%	1,265	1,596	79%	0	1,265	79%	0	1,265	79%
Other lines	655	840	78%	380	840	45%	0	380	45%	0	380	45%
Screenline Total	*7,153*	*9,240*	*77%*	*7,337*	*9,240*	79%	*304*	*7,641*	*83%*	*354*	*7,691*	*83%*
Muni Screenlines Total	*24,103*	*32,786*	*74%*	*31,282*	*41,665*	75%	*731*	*32,013*	*77%*	*700*	*31,982*	*77%*
Individual Routes												
22 Fillmore IB	436	939	46%	549	939	58%	230	779	83%	301	850	**91%**
22 Fillmore OB	400	939	43%	512	939	55%	213	725	77%	177	689	73%
48 Quintara / 24th Street IB	160	252	63%	184	252	73%	211	395	**157%**	274	458	**182%**
48 Quintara / 24th Street OB	213	252	85%	175	252	69%	196	371	**147%**	161	336	**133%**
T Third IB	1,940	3,808	51%	3,758	5,712	66%	280	4,038	71%	208	3,966	69%
T Third OB	1,742	3,808	46%	2,219	5,712	39%	304	2,523	44%	354	2,573	45%

Note:

Bold indicates capacity utilization of 85 percent or greater.

Source: San Francisco Planning Department, "Transit Data for Transportation Impact Studies," May 2015; Fehr & Peers, 2016. See Appendix D in the Transportation Impact Study for Transit Line Capacity Calculations.

Mitigation Measure M-C-TR-4A: Increase capacity on the 48 Quintara/24th Street bus route under the Maximum Residential Scenario.

The project sponsors shall contribute funds for one additional vehicle (in addition to and separate from the four prescribed under Mitigation Measure M-TR-5 for the Maximum Residential Scenario) to reduce the Proposed Project's contribution to the significant cumulative impact to not cumulatively considerable. This shall be considered the Proposed Project's fair share toward mitigating this significant cumulative impact. If SFMTA adopts a strategy to increase capacity along this route that does not involve purchasing and operating additional vehicles, the Proposed Project's fair share contribution shall remain the same, and may be used for one of those other strategies deemed desirable by SFMTA.

The Proposed Project would also cause the 22 Fillmore bus route to exceed 85 percent utilization in the Maximum Commercial Scenario during the a.m. and p.m. peak hours. The Proposed Project would contribute 43 percent of the ridership on this bus route in the a.m. peak hour (outbound direction) and 35 percent of the ridership in the p.m. peak hour (inbound direction). This would be a considerable contribution to a significant cumulative impact on individual transit routes.

Therefore, additional mitigation would be necessary for the Maximum Commercial Scenario to reduce the considerable contribution to the significant cumulative impact on Muni service on this route.

Mitigation Measure M-C-TR-4B: Increase capacity on the 22 Fillmore bus route under the Maximum Commercial Scenario.

The project sponsors shall contribute funds for two additional vehicles to reduce the Proposed Project's contribution to the significant cumulative impact to not considerable. This shall be considered the Proposed Project's fair share toward mitigating this cumulative impact. If SFMTA adopts an alternate strategy to increase capacity along this route that does not involve purchasing and operating additional vehicles, the Proposed Project's fair share contribution shall remain the same, and may be used for one of those other strategies deemed desirable by SFMTA.

However, as with Mitigation Measure M-TR-5, because SFMTA cannot commit funding to operate additional buses on these routes, to expand bus zones, or to increase transit vehicle travel speeds until environmental review of the selected elements is complete, the implementation of Mitigation Measures M-C-TR-4A and M-C-TR-4B is uncertain, and the Proposed Project's contribution to the significant cumulative impact would remain significant and unavoidable under both project scenarios.

Impact C-TR-5: The Proposed Project would not contribute considerably to a significant cumulative impact on the T Third Muni line. (*Less than Significant*)

The T Third Muni Metro line would operate below its utilization threshold in the a.m. and p.m. peak hours under both cumulative scenarios (Maximum Residential and Maximum Commercial). Therefore, the Proposed Project would not contribute considerably to a significant cumulative impact on this transit line and its cumulative impact would be less than significant. No mitigation is necessary.

Impact C-TR-6: The Proposed Project would not contribute considerably to significant cumulative impacts at Muni Downtown screenlines. (*Less than Significant*)

The Northeast and Southeast Muni Downtown screenlines would operate below the 85 percent capacity utilization threshold under future 2040 Cumulative conditions in both the a.m. and p.m. peak hours. The Northwest Downtown screenline would operate below the 85 percent capacity utilization threshold under future 2040 Cumulative conditions in the a.m. peak hour. The Southwest Downtown screenline would operate below the 85 percent capacity utilization threshold under future 2040 Cumulative conditions in the p.m. peak hour. Cumulative impacts to these screenlines would be less than significant.

The Southwest Downtown screenline would operate above the 85 percent threshold in the a.m. peak hour both with and without the Proposed Project in year 2040. However, even with the Proposed Project (under either the Maximum Residential or Maximum Commercial scenario), the capacity utilization would be lower than the Baseline Condition, and therefore, considered a less-than-significant cumulative impact.

The Northwest Downtown screenline would operate above the 85 percent threshold in the p.m. peak hour without the Proposed Project, resulting in a significant cumulative impact. Because the Proposed Project is estimated to contribute no riders to this screenline, the Proposed Project would not contribute considerably to the significant cumulative impact. No mitigation is required.

Impact C-TR-7: The Proposed Project would not contribute considerably to significant cumulative impacts on regional transit routes. (*Less than Significant*)

As shown in Table 4.E.27: Regional Transit Screenlines – Cumulative Conditions (A.M. Peak Hour) and Table 4.E.28: Regional Transit Screenlines – Cumulative Conditions (P.M. Peak Hour), no regional providers are expected to exceed their established capacity utilization thresholds. Therefore, there would be no significant cumulative impacts on regional transit service. No mitigation is required.

Table 4.E.27: Regional Transit Screenlines – Cumulative Conditions (A.M. Peak Hour)

Regional Screenline	Baseline Conditions (Inbound)			Cumulative Conditions (Inbound)			Cumulative Plus Project Conditions (Inbound) – Residential			Cumulative Plus Project Conditions (Inbound) – Commercial		
	Ridership	Capacity	Utilization	Ridership	Capacity	Utilization	Project Trips	Ridership	Utilization	Project Trips	Ridership	Utilization
East Bay												
BART	28,000	25,680	109%	38,000	32,100	**118%**	137	38,137	**119%**	177	38,177	**119%**
AC Transit	1,596	2,829	56%	7,000	12,000	58%	16	7,016	58%	21	7,021	59%
Ferries	810	1,170	70%	4,682	5,940	79%	8	4,690	79%	10	4,692	79%
Screenline Total	*30,414*	*29,679*	*102%*	*49,682*	*50,040*	*99%*	*161*	*49,843*	*100%*	*208*	*49,890*	*100%*
North Bay												
Golden Gate Transit Bus	1,344	2,543	53%	1,990	2,543	78%	66	2,056	81%	80	2,070	81%
Ferries	1,088	1,959	56%	1,619	1,959	83%	0	1,619	83%	0	1,619	83%
Screenline Total	*2,432*	*4,502*	*54%*	*3,609*	*4,502*	*80%*	*66*	*3,675*	*82%*	*80*	*3,689*	*82%*
South Bay												
BART	16,000	21,400	75%	21,000	28,808	73%	53	21,053	73%	61	21,061	73%
Caltrain	2,258	3,100	73%	2,310	3,600	64%	435	2,745	76%	516	2,826	79%
SamTrans	266	520	51%	271	520	52%	11	282	54%	12	283	54%
Ferries	-	-	-	59	200	30%	0	59	30%	0	59	30%
Screenline Total	*18,524*	*25,020*	*74%*	*23,640*	*33,128*	*71%*	*499*	*24,139*	*73%*	*589*	*24,229*	*73%*
Regional Screenlines Total	*51,370*	*59,201*	*87%*	*76,931*	*87,670*	*88%*	*726*	*77,657*	*89%*	*877*	*77,808*	*89%*

Note:

Bold indicates capacity utilization of 100 percent or greater.

Source: San Francisco Planning Department, "Transit Data for Transportation Impact Studies," May 2015; Fehr & Peers, 2016. See Appendix D in the Transportation Impact Study for Transit Line Capacity Calculations.

Table 4.E.28: Regional Transit Screenlines – Cumulative Conditions (P.M. Peak Hour)

Regional Screenline	Baseline Conditions (Outbound)			Cumulative Conditions (Outbound)			Cumulative Plus Project Conditions (Outbound) – Residential			Cumulative Plus Project Conditions (Outbound) – Commercial		
	Ridership	Capacity	Utilization	Ridership	Capacity	Utilization	Project Trips	Ridership	Utilization	Project Trips	Ridership	Utilization
East Bay												
BART	27,000	25,680	105%	36,000	32,100	**112%**	119	36,119	**113%**	89	36,089	**112%**
AC Transit	2,297	3,926	59%	7,000	12,000	58%	14	7,014	58%	11	7,011	58%
Ferries	813	1,615	50%	5,319	5,940	90%	7	5,326	90%	5	5,324	90%
Screenline Total	*30,110*	*31,221*	*96%*	*48,319*	*50,040*	*97%*	140	48,459	*97%*	105	48,424	*97%*
North Bay												
Golden Gate Transit Bus	1,399	2,817	50%	2,070	2,817	73%	57	2,127	76%	41	2,111	75%
Ferries	973	1,959	50%	1,619	1,959	83%	0	1,619	83%	0	1,619	83%
Screenline Total	*2,372*	*4,776*	*50%*	*3,689*	*4,776*	*77%*	57	3,746	*78%*	41	3,730	*78%*
South Bay												
BART	15,000	21,400	70%	20,000	28,808	69%	46	20,046	70%	31	20,031	70%
Caltrain	2,472	3,100	80%	2,529	3,600	70%	379	2,908	81%	261	2,790	78%
SamTrans	147	320	46%	150	320	47%	9	159	50%	6	156	49%
Ferries	-	-	-	59	200	30%	0	59	30%	0	59	30%
Screenline Total	*17,619*	*24,820*	*71%*	*22,738*	*32,928*	*69%*	434	23,172	*70%*	298	23,036	*70%*
Regional Screenlines Total	*50,101*	*60,817*	*82%*	*74,746*	*87,744*	*85%*	631	75,377	*86%*	444	75,190	*86%*

Note:

Bold indicates capacity utilization of 100 percent or greater.

Source: San Francisco Planning Department, "Transit Data for Transportation Impact Studies," May 2015; Fehr & Peers, 2016. See Appendix D in the Transportation Impact Study for Transit Line Capacity Calculations.

Maximum Residential Scenario

The Maximum Residential Scenario would contribute 161 transit riders from the East Bay, 66 riders from the North Bay, and 499 riders from the South Bay in the inbound direction in the a.m. peak hour. In the outbound direction in the p.m. peak hour, the Proposed Project would contribute 140 riders to the East Bay, 57 riders to the North Bay, and 434 riders to the South Bay. Although the BART line within the East Bay regional screenline would exceed the capacity utilization threshold in the a.m. and p.m. peak hours, the additional riders from the Proposed Project would not contribute considerably to a significant cumulative impact because the regional screenlines would operate within established capacity utilization thresholds. No mitigation is required.

Maximum Commercial Scenario

The Maximum Commercial Scenario would contribute 208 transit riders from the East Bay, 80 transit riders from the North Bay, and 589 transit riders from the South Bay in the inbound direction in the a.m. peak hour. In the outbound direction in the p.m. peak hour, the Proposed Project would contribute 105 transit riders to the East Bay, 41 transit riders to the North Bay, and 298 transit riders to the South Bay. Although the BART line within the East Bay regional screenline would exceed the capacity utilization threshold in the a.m. and p.m. peak hours, the Proposed Project's additional riders would not contribute considerably to a significant cumulative impact because the regional screenlines would operate within established capacity utilization thresholds. No mitigation is required.

CUMULATIVE PEDESTRIAN, BICYCLE AND LOADING CONDITIONS

Impact C-TR-8: The Proposed Project would not contribute considerably to significant cumulative pedestrian impacts. (*Less than Significant*)

On-site pedestrian circulation is, by its nature, site-specific, and a project generally would not contribute to cumulative impacts from other development projects. Although the Proposed Project is expected to increase both pedestrian and vehicle travel in the area, the existing local roadways are generally designed to adopted design standards, which are developed to ensure the safe circulation for all modes, including conflicts between pedestrians and other modes. Therefore, there would be no significant cumulative pedestrian impacts in the study area. As indicated in the "Pedestrian Impacts" discussion, pp. 4.E.96-4.E.100, pedestrian travel from the Proposed Project would not result in overcrowding of crosswalks or sidewalks. Therefore, the Proposed Project would not contribute to significant cumulative impacts on pedestrian travel. No mitigation is necessary.

Impact C-TR-9: The Proposed Project would not contribute considerably to a significant cumulative bicycle impact. (*Less than Significant*)

Bicycle trips are expected to increase on the project site and in the vicinity of the project site in the future as a result of the Proposed Project, as well as overall growth in the Eastern Neighborhoods and Mission Bay, and growth elsewhere in the City. The increases in traffic predicted to result from the Proposed Project could result in an increase in vehicle-bicycle conflicts at intersections in the transportation study area. The Proposed Project would not create hazardous conditions for bicycles or otherwise interfere with bicycle access to the project site or surrounding areas, and would provide new bicycle facilities on the project site. Therefore, the Proposed Project would not contribute considerably to a significant cumulative bicycle impact. No mitigation is necessary.

Impact C-TR-10: The Proposed Project would not contribute to a significant cumulative loading impact. (*Less than Significant*)

Loading impacts are by their nature localized and site-specific. The Proposed Project would result in a significant loading impact based on the shortfall in on-street and off-street loading facilities proposed compared to the demand, as explained in Impact TR-12; however, the shortfall on the project site would not be expected to contribute to any loading impacts from other development projects near the project site. Overall, because loading tends to occur as close to the delivery point as possible, particularly in cases where loading occurs via double-parking, as may be the case within the project site, it is not expected that unmet loading demand associated with the Proposed Project would be accommodated outside of the project site. Similarly, it is not likely that unmet loading demand from past, present, and reasonably foreseeable development in other parts of the study area would substantially interfere with travel on or near the project site. Therefore, cumulative loading impacts would not be significant. Although the Proposed Project itself would have a significant project-related loading impact, it would not contribute to a significant cumulative loading impact and the impact would be less than significant.

CUMULATIVE EMERGENCY VEHICLE ACCESS

Impact C-TR-11: The Proposed Project would not contribute considerably to a significant cumulative impact on emergency vehicle access. (*Less than Significant*)

The Proposed Project would not contribute considerably to cumulative emergency vehicle access conditions in the area. With implementation of the Proposed Project, emergency vehicle access to the project site would remain essentially unchanged from existing conditions, except for the addition of the 21st Street connection with Illinois Street. With implementation of transit-only lanes and changes to the number and direction of travel lanes on streets in the vicinity of the Proposed Project, emergency vehicle providers may adjust travel routes to respond to incidents;

however, emergency vehicle access in the area would not be substantially affected. Emergency vehicles would be permitted full use of transit-only lanes and would not be subject to any turn restrictions.

With the addition of the Warriors Arena, just to the north of the project site, there will be additional periods of congestion in the area, to which the Proposed Project will contribute traffic. However, the Warriors Arena operators are required to provide comprehensive event transportation management strategies to reduce the overall effect of event-related congestion on bicycles, pedestrians, transit, and emergency vehicle operations. Additionally, although not required to address a significant project-related impact, Improvement Measure I-TR-C would require the project's TDM coordinator, or other designee, to participate in the Mission Bay Ballpark Transportation Coordination Committee (MBBTCC) to ensure that events at AT&T Park, the Warriors Arena, Pier 70, and other sites in the study area are coordinated insofar as feasible, and efforts can be made to avoid overlapping events.

Therefore, for the above reasons, the Proposed Project, in combination with past, present, and reasonably foreseeable development in San Francisco, would result in less-than-significant cumulative emergency vehicle access impacts.

PARKING INFORMATION

As discussed in Section 4.A, Introduction to Chapter 4, on pp. 4.A.3-4.A.5, SB 743 amended CEQA by adding Public Resources Code Section 21099 regarding analysis of parking impacts for urban infill projects in transit priority areas. Public Resources Code Section 21099(d), effective January 1, 2014, provides, in part, that ". . .parking impacts of a residential, mixed-use residential, or employment center project on an infill site located within a transit priority area shall not be considered significant impacts on the environment." The Proposed Project meets each of the three criteria: it is in a transit priority area because it is located within 0.5 mile of a major transit stop; it is on an infill site because it is located on a developed site in an urban area; it is a mixed-use residential project; and it would be an employment center proposed to provide space for approximately 5,600 to approximately 9,770 jobs and located in a transit priority area on an already developed site zoned for commercial uses. Therefore, this EIR does not consider parking in determining the significance of project impacts.

However, the Planning Department acknowledges that parking conditions may be of interest to the public and decision-makers. Additionally, even with adoption of SB 743, secondary physical impacts of parking shortages need to be addressed. Therefore, this parking discussion is presented below to identify whether there would be any secondary physical impacts associated with a constrained parking supply, such as queuing that would affect the public rights-of-way by drivers waiting for scarce parking.

Existing Parking Conditions

Based on information from *SFPark*, an SFMTA program, and surveys conducted by Fehr & Peers in September 2013, there are approximately 2,410 on-street parking spaces in the three-block radius around the project site, bounded by Mariposa Street, Indiana Street, 25th Street, and the Bay. On-street parking is available on most block faces in this area, but not along parts of Mariposa Street, Third Street, Illinois Street, and other nearby streets. Most of the on-street parking is unmetered and unrestricted. Residential permit parking (RPP) area "X" is designated along the west side of Minnesota Street (from 20th Street to 22nd Street), the east side of Minnesota Street (from 18th Street to Tubbs Street), the west side of Tennessee Street (from 19th Street to Tubbs Street), and the east side of Tennessee Street (from 20th Street to Tubbs Street). Over 80 percent of the on-street public parking spaces were occupied during the mid-day period (1:30 p.m. to 3:00 p.m.) and nearly 70 percent was occupied in the evening (6:30 p.m. to 8:00 p.m.).

There are no public, general-use off-street parking lots in the survey area. There are some lots for permit holders or customers of adjacent businesses. The public parking lot at the corner of Illinois and 20th streets would be removed as part of the Proposed Project and therefore was not included in the data about existing parking conditions.

Proposed Project Parking Information

The Proposed Project would provide 0.75 parking spaces per residential unit, and one space per 1,000 square feet of gross floor area for office/commercial uses and for RALI uses. The maximum amount of off-street parking that would be provided is 3,370 spaces for the Maximum Residential Scenario and 3,496 spaces for the Maximum Commercial Scenario. The Proposed Project would provide for approximately 285 on-street parking spaces along most of the streets internal to the project site (a net increase of 228 on-street spaces). The Maximum Residential Scenario would generate a peak demand for approximately 7,078 parking spaces and the Maximum Commercial Scenario would generate a peak demand for approximately 7,633 parking spaces. Thus, the estimated supply would not accommodate all of the Proposed Project's parking demand.

The lack of parking may result in motorists looking for parking outside of the project site. However, there is an existing RPP area along Minnesota and Tennessee streets in the vicinity, and a new RPP area is proposed for the Dogpatch area that is closer to the project site. These features would discourage spillover parking from the Proposed Project, and would thereby eliminate project-related secondary effects of parking shortfalls. Parking management programs for events held at the project site would be developed as part of the overall event-specific TDM Plans to be completed as part of the permitting process for those events. The extent to which event-specific

parking shortfalls may affect the neighborhood is not likely to be more severe than existing conditions and, in fact, may be less due to the smaller size of events anticipated at the project site than the large events (up to 40,000 attendees) that occasionally occur under existing conditions.

Some drivers would shift to public transit or other modes of travel such as bicycling, use carshare facilities when a vehicle is needed, and/or would not own a car. It is possible that such a shift from automobile use to transit would add an unknown amount of additional demand to public transit facilities. The impacts of project-related transit ridership have been addressed earlier in this document. To the extent more riders use transit than forecasted due to parking shortfalls on the site, mitigation measures for project transit impacts are generally to be implemented based on ongoing monitoring. Thus, mitigation measures will be implemented based on actual observed conditions and not forecasted conditions.