IV.D Transportation and Circulation

IV.D.1 Introduction

Section IV.D, Transportation and Circulation, summarizes and incorporates by reference the results of the Transportation Impact Study (TIS) prepared by the transportation consultants for the Central SoMa Plan (Plan or proposed project) in accordance with the San Francisco Planning Department's *2002 Transportation Impact Analysis Guidelines for Environmental Review* (*SF Guidelines*).[181] The transportation analysis examines project impacts on vehicle miles traveled (VMT), traffic hazards, transit, pedestrians, bicycles, loading, emergency vehicle access, parking, as well as the impacts of construction activities on the transportation network. All of these transportation subtopics are considered in the discussions of existing conditions; existing plus Plan; and year 2040 cumulative conditions.

IV.D.2 Environmental Setting

The transportation study area is generally bounded by Market, Second, King, and Sixth Streets (see **Figure IV.D-1, Transportation Study Area**). However, because some of the proposed streetscape improvements extend beyond the area of proposed land use changes, and because some transportation effects of the proposed land use program may extend beyond the area to be rezoned, the transportation study area also includes:

- A western extension bounded by Mission, 12th, and Bryant Streets;
- An eastern extension bounded by Folsom Street, The Embarcadero, and Bryant Street; and
- A northern extension bounded by Market, Second, and Sixth Streets.

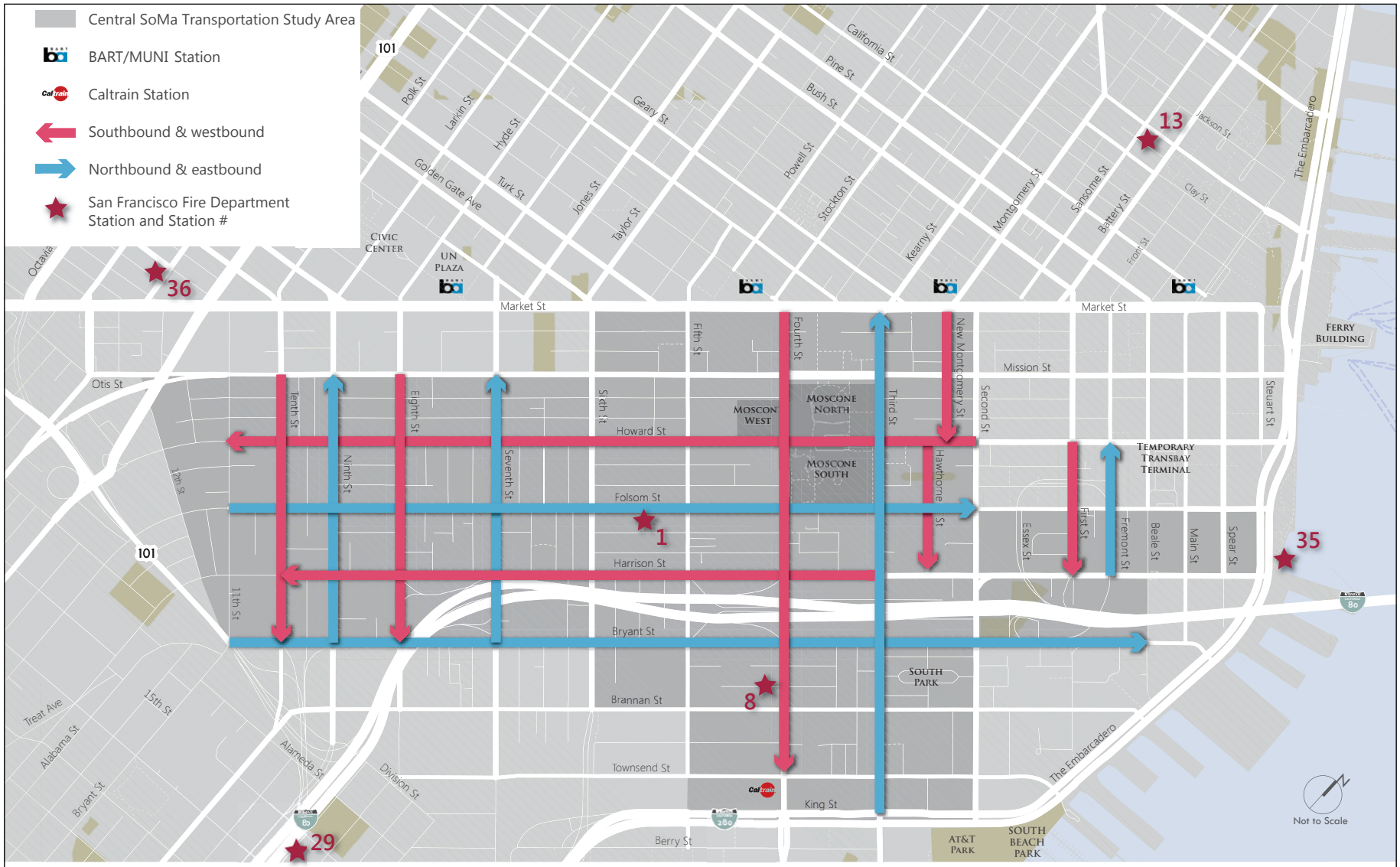
Regional and Local Roadways

Regional Access

Interstate 80 (I-80) provides the primary regional access to the transportation study area. I-80 runs through the southern portion of the transportation study area and connects San Francisco to the East Bay and other points east via the San Francisco-Oakland Bay Bridge. There are multiple on-ramps and off-ramps throughout the transportation study area that provide access to and from I-80 (i.e., at Ninth and 10th Streets at Bryant Street). Within the transportation study area, I-80 generally has eight travel lanes (four lanes in each direction).

U.S. Highway 101 (U.S. 101) provides access to the north and south of the transportation study area. I-80 joins U.S. 101 to the southwest of the transportation study area and provides access to the Peninsula and South Bay. U.S. 101 connects San Francisco and the North Bay via the Golden Gate Bridge. There is one on-ramp and one off-ramp in the transportation study area that provide access to U.S. 101. Within the northern part of

[181] Adavant Consulting/Fehr & Peers/LCW Consulting, *Central SoMa Plan Transportation Impact Study, Case No. 2011.1356E*, December, 2016 (hereinafter referred to as "TIS").



Note: Only one-way streets within study area are highlighted.

SOURCE: Fehr & Peers

Case No. 2011.1356E: Central SoMa Plan

Figure IV.D-1

Transportation Study Area

San Francisco, U.S. 101 operates on surface streets (i.e., Van Ness Avenue 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.

Interstate 280 (I-280) provides regional access from the South Bay and the Peninsula. I-280 and U.S. 101 have an interchange to the south of the transportation study area, and I-280 terminates just south of the study area at the intersection of King/Fifth. Access points to I-280 are located on Sixth Street at Brannan Street, and on King Street at Fifth Street. I-280 is generally a six-lane freeway in the vicinity of the transportation study area.

Local Access

Central SoMa streets are aligned on a grid system, and streets that run in the northwest/southeast direction are generally considered north/south streets, whereas streets that run in the southwest/northeast direction are generally considered east/west streets. The grid offers multiple route options for getting from place to place, with numerous one-way streets, as shown in Figure IV.D-1, and with multiple travel lanes. A number of north/south streets within Central SoMa serve as access routes to and from the regional highway network (e.g., Third, Fourth, Fifth, Sixth, Seventh, Eighth, Ninth, and 10th Streets). The San Francisco General Plan contains definitions and regulatory requirements for a variety of roadway classifications that make up the City's street network, and designation of streets.[182] Howard, Folsom, Harrison and Bryant Streets are identified as Major Arterials. Third, Fourth, 11th, Market, Mission, and portions of Harrison, Bryant, and King Streets are identified as Transit Preferential Streets. Market, Mission, Bryant, Harrison, Third, and Fourth Streets, and all north/south streets between Market and Mission Streets are identified as Neighborhood Pedestrian Streets.

Vehicle Miles Traveled

The San Francisco County Transportation Authority's (Transportation Authority) San Francisco Chained Activity Modeling Process (SF-CHAMP) travel demand model was used to estimate existing average daily VMT per capita for the traffic analysis zones (TAZs) that comprise the Central SoMa area. VMT per capita is used to measure the amount and distance that a resident, employee, or visitor drives, accounting for the number of passengers within a vehicle. **Table IV.D-1, Daily VMT per Capita—Existing Conditions**, presents the existing average daily VMT per capita for residents, employees, and visitors for the nine-county San Francisco Bay Area and for the 28 TAZs that comprise the Central SoMa area included in the VMT analysis (i.e., the area bounded by Market, Second, Townsend and Sixth Streets). As shown on Table IV.D-1, within Central SoMa, the current average daily VMT per capita is less than the citywide and regional Bay Area averages for the nine-county San Francisco Bay Area.

[182] City roadway designations include (listed in the order of potential vehicle capacity) Freeways, Major Arterials, Transit Conflict Streets, Secondary Arterials, Recreational Streets, Collector Streets, and Local Streets. Each of these roadways has a different potential capacity for mixed-flow traffic and for changes that might alter traffic patterns on the given roadway. The General Plan also identifies certain Transit Preferential Streets from among the city's various roadways, each of which is identified as a Primary Transit Street—Transit Oriented, Primary Transit Street—Transit Important, or Secondary Transit Street. The Pedestrian Network is a classification of streets throughout the city used to identify streets developed to be primarily oriented to pedestrian use, and includes Citywide Pedestrian Network Streets and Neighborhood Pedestrian Streets. City and County of San Francisco, San Francisco General Plan, 2007 Transportation Element. Available at http://www.sf-planning.org/ftp/General_Plan/I4_Transportation.htm.

TABLE IV.D-1 DAILY VMT PER CAPITA—EXISTING CONDITIONS

Trip Type (Land Use)	Bay Area Regional Average	San Francisco County	Central SoMa Area[a]
Households (residential)	17.2	7.9	2.1
Employment (office)	19.1	8.8	8.2
Visitors (retail)	14.9	5.4	4.4

SOURCE: San Francisco Transportation Authority SF-CHAMP model, Fehr & Peers, 2016.

NOTE:

a. Average daily VMT per capita for the 28 Traffic Analysis Zones (TAZs) within the Central SoMa area bounded by Market, Second, Townsend, and Sixth Streets.

Transit Service

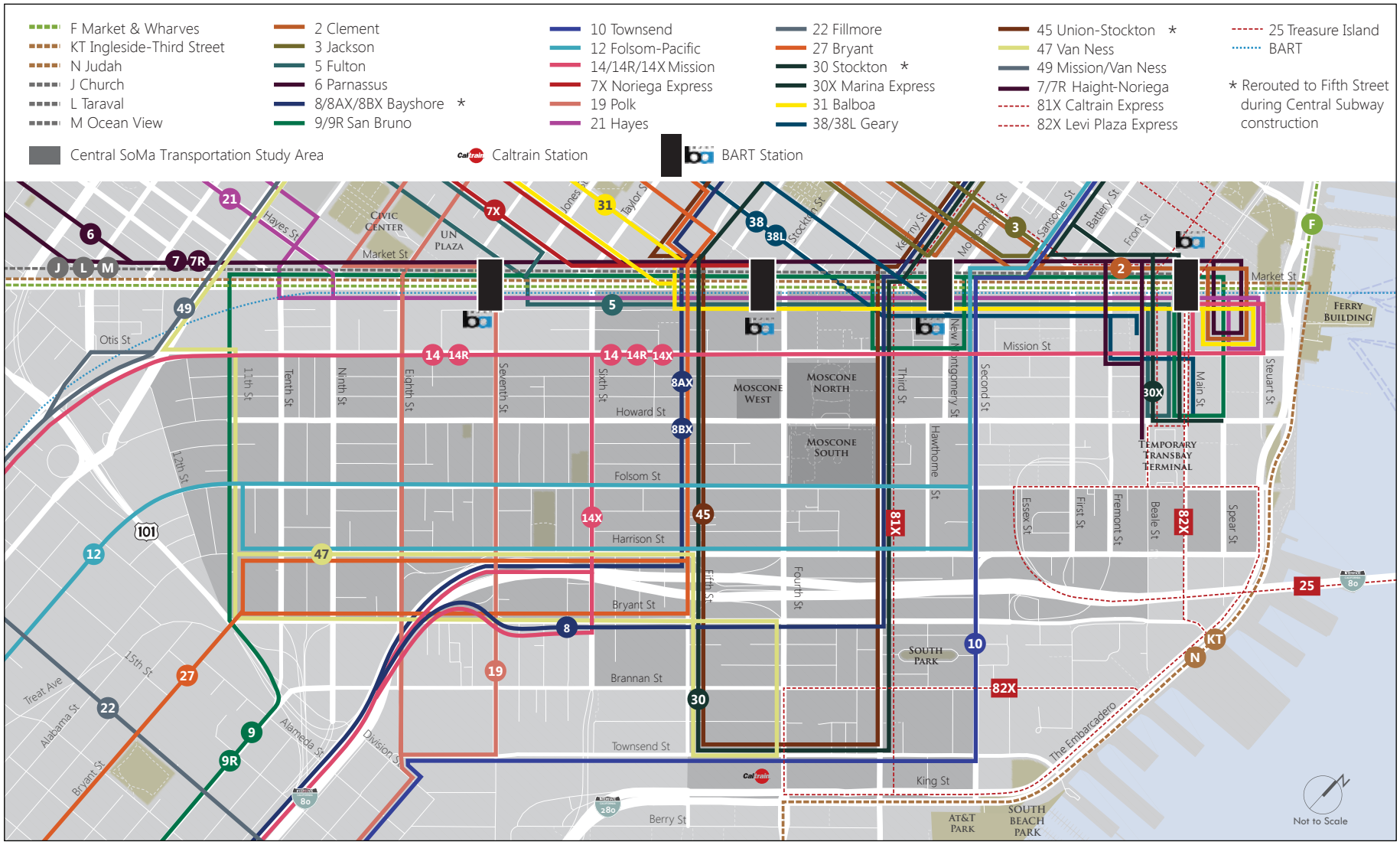
The Central SoMa transportation study area is well served by public transit, both local and regional. Local service is provided by the San Francisco Municipal Railway (Muni) bus and light rail lines, which can be used to access regional transit operators. Service to and from the East Bay is provided by Bay Area Rapid Transit (BART), AC Transit and ferries; service to and from the North Bay is provided by Golden Gate Transit buses and ferries; service to and from the Peninsula and South Bay is provided by SamTrans, BART, and Caltrain.

Local Muni Service

Figure IV.D-2, Existing Transit Network, presents the transit routes traveling within and through the Central SoMa transportation study area. Assessment of transit conditions is typically conducted by calculating the existing capacity utilization (riders as a percentage of capacity) at the maximum load point (MLP) (the point of greatest demand), and is referred to as capacity utilization. The MLPs for routes serving the Central SoMa area are generally located north or south of the transportation study area, and capacity utilization is generally lower at stops within the transportation study area than at the MLP. Of the 37 routes that serve Central SoMa, ten Muni routes currently have passenger loads that exceed Muni's 85 percent capacity utilization standard at the MLP during the a.m. and/or p.m. peak periods (i.e., the 5 Fulton, 7/7R Haight-Noriega, 10 Townsend, 30X Marina Express, 38R Geary Rapid bus routes, and the K, T, N, J, and M light rail lines), but the MLPs for these routes are not within the transportation study area. The MLPs for other routes (8AX Bayshore Express, 9 San Bruno, 12 Folsom-Pacific, 14X Mission Express, 19 Polk, 27 Bryant, and 81X Caltrain Express) in either the inbound or outbound direction during the a.m. and/or p.m. peak hour are within the transportation study area, but the capacity utilization does not exceed Muni's 85 percent capacity utilization standard.

Transit operating conditions were observed during field surveys conducted in June 2013.[183] Operational conflicts at times occurred between buses and other vehicles along the roadways within the transportation study area. Private vehicles often enter the transit-only lanes that run eastbound and westbound on Mission Street and that run northbound on Third Street, occasionally delaying bus routes that operate along Mission

[183] Field surveys of transit operating conditions were conducted in June 2013, and it is expected that conditions at that time remain representative of current transit operating conditions, given that service levels have been adjusted to meet changing ridership demand consistent with Muni Forward projects.



SOURCE: Fehr & Peers

Case No. 2011.1356E: Central SoMa Plan

Figure IV.D-2

Existing Transit Network

and Third Streets through the transportation study area. Long bridge-bound vehicle queues of trucks, buses, and private automobiles were observed during the p.m. peak period in the transportation study area on Folsom and Bryant Streets eastbound, as well as on Fifth Street southbound. These vehicle queues affect transit operations because buses and private vehicles travel in mixed-flow travel lanes on these streets.

Central Subway Project. The Central Subway Project is the second phase of the Third Street light rail line (i.e., T Third), which opened in 2007. Construction is currently underway, and the Central Subway will extend the T Third light rail line northward from its current terminus at Fourth and King Streets to a new surface station south of Bryant Street and go underground at a portal under I-80. From there it will continue north to new stations at Moscone Center and Union Square—where it will provide passenger connections to other Muni light rail lines and to BART at the Powell station —and to a new station in Chinatown, where the line will terminate at Stockton and Clay Streets. Construction of the Central Subway is scheduled to be completed in 2017, and revenue service is scheduled for 2019.

Muni Forward. The following Muni Forward changes are either planned or have been implemented by the SFMTA for routes in the transportation study area.

- Minor frequency increases are planned for the F Market & Wharves, J Church, K Ingleside, L Taraval, M Ocean View, and N Judah.
- The 8AX/8BX Bayshore Express frequencies were increased during the peak periods, and a route alignment change was made on the 8BX Bayshore Express.
- The 10 Townsend route will be rerouted, with a new alignment through Mission Bay and Potrero Hill. The 10 Townsend will be renamed the 10 Sansome.
- The new 11 Downtown Connector is planned to run on North Point, Powell, Columbus, Sansome, Second, Folsom/Harrison Streets, and then extend into the Mission via the current 12 Folsom routing. As part of the Rincon Hill Transit Study, San Francisco Municipal Transportation Agency (SFMTA) staff has proposed an alternative route for the 11 Downtown Connector into Mission Bay. They are also evaluating community input to extend the route further into Potrero Hill.
- The 12 Folsom-Pacific will be discontinued.
- Service frequency on the 14X Mission Express was increased during the peak periods.
- The downtown terminus of the 7X Noriega Express has been extended from Fourth Street to Market Street at Spear Street.
- Modification of the 19 Polk in the Civic Center area. The 19 Polk will run from Seventh and McAllister Streets to Polk Street, and from Polk, McAllister, to Hyde Street. With these changes, the 19 Polk would no longer run on Market Street (between Seventh and Ninth Streets), Larkin, Eddy or Hyde (between Eddy and McAllister) Streets, or on Geary Boulevard (between Larkin and Polk Streets).
- The 30 Stockton will provide service with articulated buses to reduce crowding and improve reliability. The 30X Stockton Express will have increased frequencies.

Regional Service Providers

East Bay: Transit service to and from the East Bay is provided by BART, AC Transit, and by the ferries of the San Francisco Bay Area Water Emergency Transportation Authority (WETA). BART operates regional rail transit service between the East Bay (from Pittsburg/Bay Point, Richmond, Dublin/Pleasanton and Fremont)

and San Francisco, and between San Mateo County (Millbrae and San Francisco Airport) and San Francisco. The BART stations that serve Central SoMa include the Powell and Montgomery stations. AC Transit is the primary bus operator for the East Bay, including Alameda and western Contra Costa Counties. AC Transit operates 37 routes between the East Bay and San Francisco, all of which terminate at the (temporary) Transbay Terminal. WETA ferries provide service between San Francisco and Alameda and between San Francisco and Oakland from the Ferry Building.

South Bay: Transit service to and from the South Bay is provided by BART, SamTrans, Caltrain, and WETA. SamTrans provides bus service between San Mateo County and San Francisco, including 14 bus lines that serve San Francisco (12 routes serve the downtown area). In general, SamTrans service to downtown San Francisco operates along South Van Ness Avenue, Potrero Avenue, and Mission Street to the Transbay Terminal. SamTrans cannot pick up northbound passengers at San Francisco stops. Similarly, passengers boarding in San Francisco (and destined to San Mateo) may not disembark in San Francisco. SamTrans routes stop at the eastbound and westbound bus stops on Mission Street at Fifth Street. WETA ferries provide service between South San Francisco and the San Francisco Ferry Building.

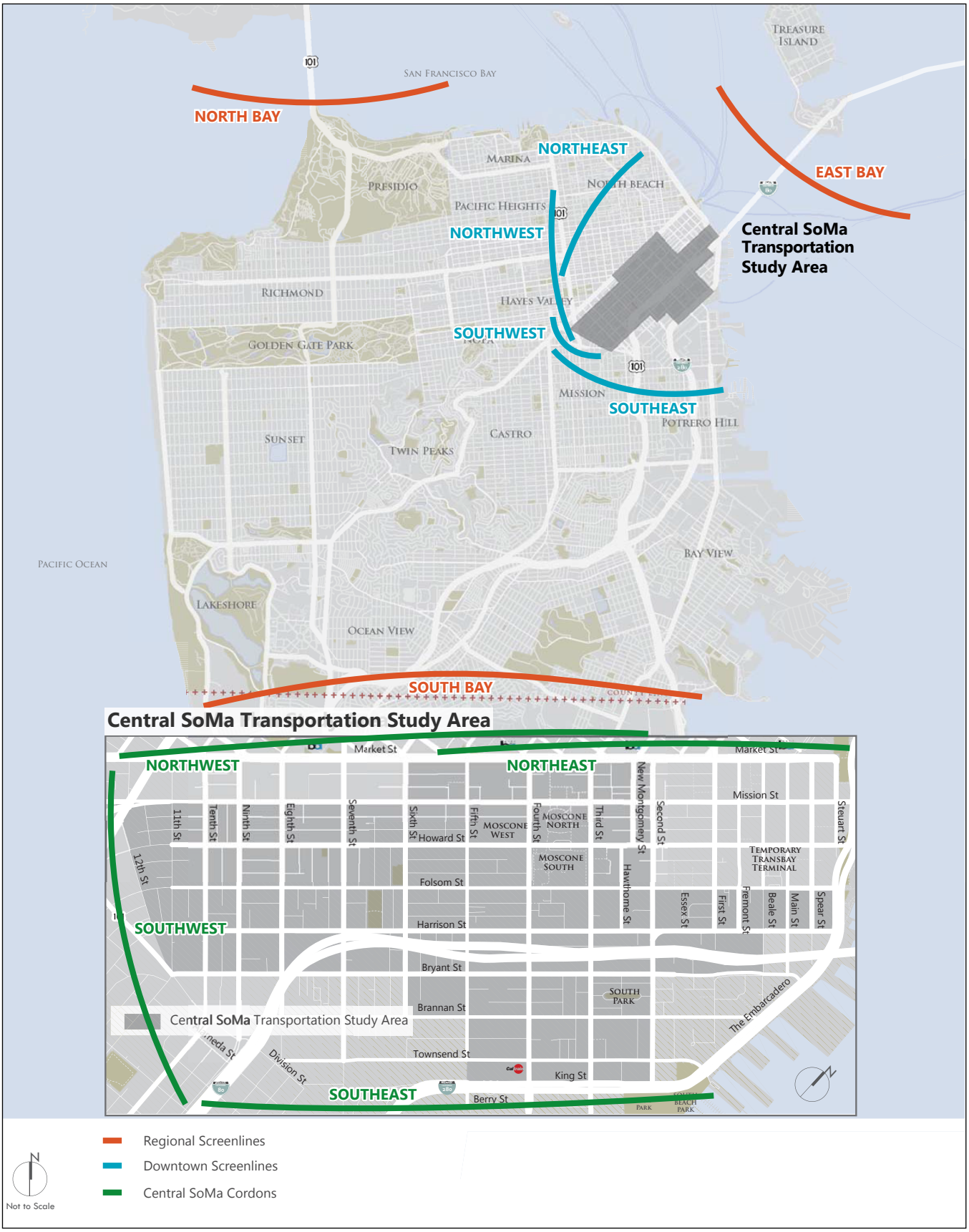
Caltrain provides commuter heavy-rail passenger service between Santa Clara County and San Francisco. Caltrain currently operates 38 trains each weekday, with a combination of express and local service. The Caltrain terminus station in San Francisco is located at Fourth and King Streets.

North Bay: Transit service to and from the North Bay is provided by Golden Gate Transit buses and ferries, and WETA ferries. Between the North Bay (Marin and Sonoma Counties) and San Francisco, Golden Gate Transit operates 22 commute bus routes, nine basic bus routes and 16 ferry feeder bus routes, most of which serve the Van Ness Avenue corridor or the Financial District; Golden Gate Transit bus service to downtown San Francisco operates along Mission, Howard and Folsom Streets. Golden Gate Transit routes stop at the westbound bus stop on Mission Street at Fifth Street. Golden Gate Transit also operates ferry service between the North Bay and San Francisco. During the morning and evening peak periods, ferries run between Larkspur and San Francisco and between Sausalito and San Francisco. WETA ferries provide service between Vallejo and San Francisco.

Local and Regional Transit Capacity Utilization Analysis

The assessments of existing and future transit conditions for proposed projects in San Francisco is typically performed through the analysis of local transit (Muni) and regional transit (BART, AC Transit, Golden Gate Transit, SamTrans, Caltrain, and ferry service) screenlines.[184] Each screenline is further subdivided into major transit corridors (Muni) or service provider (regional transit). Screenline values represent service capacity, ridership and capacity utilization at the maximum load point (MLP) according to the direction of travel for each of the routes that comprise the transit corridor. The general location of the Muni downtown screenlines, regional screenlines, and the Central SoMa cordons are presented on **Figure IV.D-3, Downtown and Regional Screenlines**.

[184] The concept of screenlines is used to describe the magnitude of travel to or from the greater downtown area, and to compare estimated transit ridership to available capacities. Screenlines are hypothetical lines that would be crossed by persons traveling between downtown and its vicinity and other parts of San Francisco and the region.



SOURCE: Fehr & Peers

Case No. 2011.1356E: Central SoMa Plan

Figure IV.D-3
Downtown and Regional Screenlines

Muni Downtown Screenlines: Four screenlines have been established in San Francisco to analyze potential impacts of projects on Muni service: Northeast, Northwest, Southwest, and Southeast, with subcorridors within each screenline (see Table IV.D-8). The analysis of Muni downtown screenlines assesses the effect of project-generated transit-trips on transit capacity in the inbound direction (i.e., towards downtown) during the a.m. peak hour, and in the outbound direction (i.e., away from downtown) during the p.m. peak hour. Under existing conditions, the Muni downtown screenlines operate below the 85 percent capacity utilization standard, with the exception of the Southwest screenline during the a.m. peak hour that operates at 93.6 percent. In addition, a number of corridors, such as the Subway Lines (a.m. peak hour), Fulton/Hayes (p.m. peak hour), and Third Street (p.m. peak hour) corridors operate above the 85 percent capacity standard.

Muni Central SoMa Cordons: The local Muni analysis also examined transit conditions on cordons specifically serving the Central SoMa area. The Central SoMa cordons were developed to describe travel to or from the Central SoMa transportation study area. The Muni routes serving the Central SoMa Plan transportation study area were grouped into four cordons. See page IV.D-29 for a more detailed description of the Central SoMa cordon analysis and list of Muni routes included in each cordon. The four Central SoMa cordons currently operate below the 85 percent capacity utilization standard, with the exception of the Southwest cordon during the a.m. peak hour (see Table IV.D-9). In addition, a number of corridors within the cordons currently exceed the standard during the a.m. and p.m. peak hours (e.g., the Southern corridor of the Northwest cordon, the Eastern corridor of the Southeast cordon).

Regional Screenlines: Three regional screenlines have been established around San Francisco to analyze potential impacts on the regional transit agencies: East Bay (BART, AC Transit, ferries), North Bay (Golden Gate Transit buses and ferries), and the South Bay (BART, Caltrain, SamTrans) (see Table IV.D-10). For all regional transit operators, the capacity is based on the number of seated passengers per vehicle. All of the regional transit operators have a one-hour load factor standard of 100 percent, which would indicate that all seats are full. As indicated on Table IV.D-10, with the exception of BART, all regional transit providers operate at less than their load factor standards during the a.m. and p.m. peak hours, which indicates that seats are generally available. BART ridership capacity utilization in the inbound direction from the East Bay during the a.m. peak hour (i.e., towards downtown San Francisco) and in the outbound direction to the East Bay during the p.m. peak hour (i.e., leaving downtown San Francisco) exceed the 100 percent capacity utilization standard, which indicates that all seats are full and many passengers are standing. In addition, the overall East Bay screenline during the a.m. peak hour also exceeds the 100 percent capacity utilization standard.

Pedestrian Conditions

Pedestrian Facilities

Table IV.D-2, Existing Sidewalk Width Compared to Better Streets Plan (BSP) Minimum and Recommended Widths, presents the comparison of the sidewalk widths within the transportation study area to the minimum and recommended widths within the *Better Streets Plan*. Sidewalk widths on streets in much of the study area are less than the recommended widths in the *Better Street Plan*, but meet the minimum width.

TABLE IV.D-2 EXISTING SIDEWALK WIDTH COMPARED TO BETTER STREETS PLAN (BSP) MINIMUM AND RECOMMENDED WIDTHS

Street	Average Existing Sidewalk Width[a]	BSP Minimum Width	BSP Recommended Width
Second Street	10′–14′	12′	15′
New Montgomery Street	14′–16′	12′	15′
Third Street	10′–13′	12′	15′
Fourth Street	11′–16′	12′	15′
Fifth Street	10′–16′	12′	15′
Sixth Street	8′–12′	12′	15′
Seventh Street	9′–12′	12′	15′
Eighth Street	10′–14′	12′	15′
Ninth Street	9′–10′	12′	15′
10th Street	9′–12′	12′	15′
11th Street	10′–12′	12′	15′
12th Street	12′–18′	12′	15′
Townsend Street	9′–20′	12′	15′
Brannan Street	9′–11′	12′	15′
Bryant Street	10′	12′	15′
Harrison Street	10′	12′	15′
Folsom Street	11′–12′	12′	15′
Hawthorne Street	7′	12′	15′
Howard Street	12′–17′	12′	15′
Mission Street	7′–17′	12′	15′
Market Street	25′	12′	15′

SOURCE: San Francisco, *Better Streets Plan*, January 2011; Fehr & Peers, 2016.
NOTE:
a. Where average sidewalk width varies along a street, a range of widths is provided.

A qualitative evaluation of existing pedestrian conditions was conducted during field visits to the transportation study area in June 2013. A total of 80 study intersections were visited. Any lack of pedestrian facilities was noted at the 80 study intersections, including sidewalks, crosswalks, Americans with Disabilities Act (ADA) curb ramps, and pedestrian countdown signals. Pedestrian facilities generally are most complete in the area bounded by Market, Howard, Third and Sixth Streets. The majority of intersections in this area have no missing curb ramps, closed crosswalks or multiple turning lanes. Around three quarters of the sidewalks in this area meet or exceed the *Better Streets Plan* minimum or recommended sidewalk widths. Sidewalks on many streets in the transportation study area that are located south of Howard Street do not meet the *Better Streets Plan* minimum sidewalk widths. General pedestrian impediments observed across the transportation study area include:

- Narrow sidewalks;
- Temporary construction zones that reduce sidewalk width or close crosswalks;

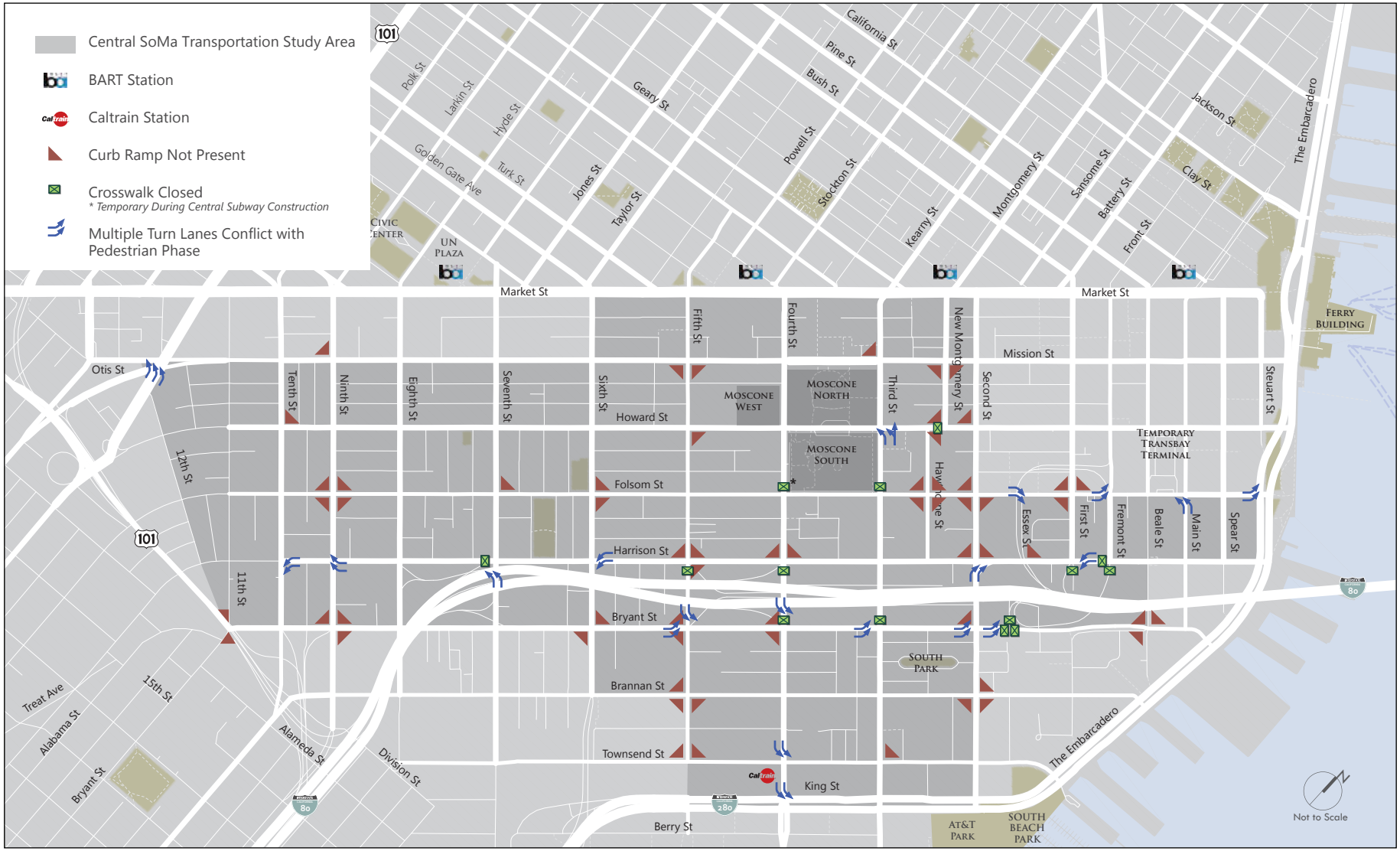
- Lack of ADA curb ramps or use of shared diagonal curb ramps at intersection corners;
- Missing or closed crosswalks;
- Freeway on- and off-ramps with short pedestrian crossing phases and/or high vehicle volumes and speeds turning into crosswalks across multiple travel lanes; and
- Long distances between intersections limiting crossing opportunities, and higher vehicle speeds particularly in the southern and western portions of the transportation study area.

These pedestrian impediments are most prevalent along particular corridors, including (north/south) Second, New Montgomery, Hawthorne, Fourth and Ninth Streets, as well as (east/west) Folsom, Harrison and Bryant Streets. These corridors contain 70 percent of all transportation study area intersections but over 90 percent of the intersections with multiple pedestrian impediments (i.e., missing or closed crosswalks, missing or diagonal curb ramps, and multiple turning lanes). See **Figure IV.D-4, Missing Curb Ramps, Closed Crosswalks, and Multiple Turning Lanes**. Harrison and Bryant Streets present particularly unfavorable pedestrian environments, with numerous freeway on-ramps and off-ramps, very narrow sidewalks, and largely industrial or auto-centric land uses. In particular, a large number of conflicts between vehicles and pedestrians were observed along Folsom Street at Second Street and at Third Street. Eastbound vehicle queues bound for the Bay Bridge often block the intersection and its east side crosswalk during the p.m. peak period. Eastbound drivers attempt to clear the intersection when downstream traffic clears along Folsom Street, proceeding through the east leg crosswalk while pedestrians cross during the walk phase. At times pedestrians cannot cross at all during the walk phase due to vehicle queues blocking the crosswalk. Eastbound through vehicle queues also delay the southbound left and northbound right turning movements, resulting in drivers making aggressive turns into the east crosswalk during the shared signal phase. In addition, the intersection of Folsom/Third lacks a crosswalk on the north leg (i.e., pedestrians crossing Third Street are directed to cross at the south leg of the intersection).

The slip lane[185] at the intersection of Harrison/Second presents another conflict point, as northbound drivers on Second Street turning right onto Harrison Street often fail to yield to pedestrians crossing within the slip lane crosswalk or block the slip lane crosswalk as they wait for downstream traffic on Harrison Street to clear. Harrison Street has a number of intersections with closed crosswalks, including at Fremont, First, Fourth, Fifth and Seventh Streets. Bryant Street also has closed crosswalks at Sterling, Third and Fourth Streets.

In addition to the narrow sidewalks, missing curb ramps, closed crosswalks, multiple turn lanes, freeway ramps and limited crossing opportunities discussed above, the wide roadways and higher vehicle speeds during non-peak periods throughout the transportation study area, further challenge pedestrians. Pedestrians are required to cross multiple travel lanes at intersections, increasing their exposure to pedestrian-vehicle conflicts. Wide turning radii at the intersection corners enable drivers to make turns at higher speeds, reducing their ability to recognize and yield to pedestrians in the crosswalk. Higher vehicle speeds during non-peak periods generally increase the frequency of pedestrian collisions by reducing the time available for driver reaction, and increase the severity of pedestrian injuries.

[185] A slip lane is a travel lane provided at an intersection to allow vehicles to turn at the intersection without actually entering it and interfering with through traffic.



SOURCE: Fehr & Peers

Case No. 2011.1356E: Central SoMa Plan

Figure IV.D-4

Missing Curb Ramps, Closed Crosswalks, and Multiple Turning Lanes

Within Central SoMa, in the vicinity of Moscone Center, there are a number of senior housing complexes, and therefore, a number of the pedestrians at the transportation study area locations are seniors and persons with disabilities. Senior pedestrians and pedestrians with disabilities can have special safety considerations that affect their walking experience including reduction in vision, agility, balance, speed, concentration and strength, difficulties hearing vehicles approaching from behind, and reduced ability under low light/night conditions.[186] Seniors are more prone to suffer a fatality if involved in a crash when compared to the general population.[187] A number of senior residents of the housing complexes within Central SoMa have expressed concerns regarding difficulty crossing Howard, Folsom, Fourth, and Third Streets all of which are one-way arterial streets with multiple travel lanes and higher travel speeds during non-peak periods, as well as difficulty walking along sidewalks during Moscone Center events with high attendance levels. In response to residents' concerns, over the years SFMTA has implemented pedestrian safety measures aimed at reducing pedestrian-vehicle conflicts and reducing vehicle speeds within the South of Market neighborhood, such as all-pedestrian phases (e.g., Fourth/Howard) and leading pedestrian intervals (e.g., Third/Howard) at intersections, corner bulbouts (e.g., southwest corner of Fourth/Howard), sidewalk widening (e.g., adjacent to Moscone West), the pedestrian bridge across Howard Street, and new midblock traffic signals (e.g., Sixth/Minna), among other measures.

Pedestrian Crosswalk, Sidewalk, and Corner Level of Service (LOS)

Existing pedestrian operating conditions were quantitatively analyzed at the crosswalks at 10 study intersections, at five sidewalk locations, and at corner locations at 10 intersections during the midday and p.m. peak periods (i.e., 11:00 a.m. to 1:00 p.m. and 4:00 to 6:00 p.m., respectively). Pedestrian counts at the study locations were done in April and July 2013, and May 2014, and are representative of current conditions in the transportation study area. The quantitative analysis of pedestrian conditions focused on the Fourth Street corridor, which serves as the main pedestrian spine of the Plan Area. The sidewalks, crosswalks and corners are quite crowded around major destinations such as the Moscone Center, the SFMTA Fifth & Mission/Yerba Buena Garage, and the Caltrain station. The study crosswalks, sidewalks, and corners currently operate at acceptable LOS conditions (i.e., at LOS D or better) during both the weekday midday and p.m. peak hours, with the exception of the west crosswalk at the intersection of Fourth/Townsend which operates at LOS E during the p.m. peak hour (the west crosswalk operates at LOS D during the midday peak hour).

Bicycle Conditions

Figure IV.D-5, Existing Bicycle Route Network and AM and PM Peak Hour Bicycle Volumes, p. IV.D-14, presents the bicycle route network within the Central SoMa transportation study area; the majority of the transportation study area is flat, with limited changes in grade. Bikeways are typically classified as Class I, Class II, Class III, or Class IV facilities.[188] Class I bikeways are bike paths with exclusive right-of-way for use by bicyclists or pedestrians. Class II bikeways are bike lanes striped within the paved areas of roadways and

[186] Federal Highway Association, *FHWA University Course on Bicycle and Pedestrian Transportation*, Publication No. FHWA-HRT-05-100, slide 10.
[187] Loukaitou-Sideris, Anastasia, "Is it Safe to Walk? Neighborhood Safety and Security Considerations and Their Effects on Walking," *Journal of Planning Literature*, Vol. 20, No. 3, February 2006, p. 226.
[188] State of California, *California Streets and Highway Code* Section, 890.4. Available at http://www.leginfo.ca.gov/cgi-bin/displaycode?section=shc&group=00001-01000&file=890-892, accessed September 1, 2016.

SOURCE: Fehr & Peers

Case No. 2011.1356E: Central SoMa Plan

Figure IV.D-5

Existing Bicycle Route Network and AM and PM Peak Hour Bicycle Volumes

established for the preferential use of bicycles, while Class III bikeways are signed bike routes that allow bicycles to share streets with vehicles. A Class IV bikeway is an exclusive bicycle facility that is separated from vehicular traffic and parked cars by a buffer zone. Class II or Class IV bicycle lanes are provided on The Embarcadero, and Seventh, 10th, Howard, Folsom, and Townsends Streets. Class II bicycle lanes are provided on Second Street between Market and Howard Streets, and a Class III signed-route only is located south of Howard Street. A Class III signed route is provided on Fifth Street.

The 2009 *San Francisco Bicycle Plan* (*Bicycle Plan*) includes planned improvements to Bicycle Route 11 on Second Street, Bicycle Route 19 on Fifth Street, and on Fremont Street. Second Street improvements include the construction of Class IV separated bicycle lanes in both directions between Market and Townsend Streets, and these will be implemented as part of San Francisco Public Works' Second Street Improvement Project. Fifth Street improvements include the construction of Class II bicycle lanes and Class III bicycle routes in both directions between Market and Townsend Streets. These planned improvements would reduce the number of travel lanes and prohibit northbound and southbound left turns, as well as implement other minor changes to lane geometry and on-street parking. Fremont Street improvements include the construction of a Class II bicycle lane between Harrison and Howard Streets.

Bicycle volume counts were conducted during the weekday a.m. and p.m. peak periods (7:00–9:00 a.m. and 4:00–6:00 p.m., respectively) in April and August 2013 at six intersections on Howard, Folsom and Townsend Streets and are representative of current conditions in the transportation study area. Peak hour bicycle volumes ranged between 50 and 450 bicyclists per hour traveling through the intersections. The highest approach volumes during the a.m. peak hour were observed on Folsom and Townsend Streets (eastbound), while during the p.m. peak hour the highest approach volumes were observed on Howard and Townsend Streets (westbound). Folsom and Howard Streets are popular bicycle commute routes for people working in SoMa and Townsend Street is a popular route for commuters headed to and from the Caltrain station on Fourth and King Streets. While some improved bicycle facilities are provided along Central SoMa streets, as described above, bicyclists face similar conflicts to those discussed under the Pedestrian Conditions subheading above.

On-street bicycle racks are provided throughout the study area. Additionally, there are a number of Bay Area Bike Share stations in the study area: at The Embarcadero and Folsom Street, at Third and Howard Streets, at Fifth and Howard Streets, at Spear and Folsom Streets, at Second and Folsom Streets, at Second Street and South Park, at Second and Townsend Streets, at Fourth and Townsend Streets, and at 330 Townsend Street. The nine stations can accommodate 175 bicycles.

Loading Conditions

Freight delivery and service vehicle demand in the Central SoMa area is served via off-street facilities within buildings, as well as at on-street commercial loading spaces (i.e., yellow curb). On-street commercial loading spaces are provided to allow commercial vehicles (typically trucks and service vehicles) to park along the curb to unload or load goods. These spaces are frequently used by building service vehicles, contractors, and delivery vehicles for buildings with no supply of off-street parking. Commercial loading spaces are generally regulated by meters with 30-minute to 1-hour time limits in effect Monday through Friday (or Saturday) with various start and end times. In general, on-street commercial loading spaces are typically well utilized throughout the day, with periods of higher usage during the early mornings (primarily deliveries to restaurants and stores) and during the midday period (primarily package and mail deliveries).

Of the approximately 3,850 on-street parking spaces within the transportation study area, about 10 percent (i.e., 380 spaces) are commercial vehicle loading spaces. **Figure IV.D-6, Existing On-Street Parking Spaces**, presents the number of existing on-street parking spaces for three Central SoMa subareas, and the distribution of commercial vehicle loading spaces within the subareas.

Most larger buildings in the Plan Area provide off-street loading docks that can accommodate most of the daily delivery/service vehicle demands of each building. The demand for on-street loading zones tends to be from smaller buildings or uses that do not have off-street facilities, or by deliveries that only require a short stop (such as a package delivery).

Violations of the on-street commercial loading spaces are routine, including usage of the spaces for non-delivery vehicles (such as passenger pick-ups/drop-offs, short-term parking, or expired meters), resulting in occasional shortages of available commercial loading spaces in areas and periods of high demand. When commercial loading spaces are not available or not convenient to the delivery location, delivery/service vehicles have been observed to double-park in the adjacent travel lane. During these times, minor congestion occurs, causing adverse effects on vehicle, transit, and bicycle conditions. In addition, delivery/service vehicles also stop within red zones (such as near intersections or fire hydrants) or at bus stops, affecting bus operations and resulting in additional delays and decreasing safety at intersections.

Passenger loading/unloading zones (i.e., white zones) provide a place to load and unload passengers for adjacent businesses and residences, and are intended for quick passenger drop-off and pick-up. These zones require a permit to be issued by SFMTA and are renewed annually. Passenger loading/unloading is also permitted in commercial loading spaces as long as it is active loading/unloading and does not exceed two minutes. There are a number of passenger loading/unloading zones within the Central SoMa transportation study area. The majority of the passenger loading/unloading zones serve the hotel, convention center, and cultural uses, although there are a number of zones that serve residential, office, and educational uses.

Parking Conditions

Existing off-street and on-street parking supply were examined within a parking study area bounded by Market Street (north), 11th Street (west), King Street (south), and Essex Street (east). Information on off-street and metered on-street parking is available from the SFMTA through SF*park*.[189] The remaining parking data were collected through surveys of the parking study area conducted in spring 2013 for this analysis.

[189] SF*park* is a SFMTA and U.S. Department of Transportation pilot program to test adjustable meter and garage pricing to achieve a balance between available parking spaces and demand. Data collection of real-time space availability and rates ended in December 2013. Additional information about the program is available at http://sfpark.org.

SOURCE: Fehr & Peers

Case No. 2011.1356E: Central SoMa Plan

Figure IV.D-6

Existing On-Street Parking Spaces

Off-Street Parking

As shown on **Figure IV.D-7, Existing Off-Street Parking Spaces**, the majority of the parking garages within the parking study area are concentrated between Second and Fifth Streets, while the majority of the surface parking lots are dispersed west of Fifth Street. There are 151 off-street parking facilities within the parking study area, which provide a combined total of over 17,000 parking spaces and almost 50 motorcycle spaces. Most larger public parking facilities in the parking study area currently have availability throughout the day. For example, the Fifth & Mission/Yerba Buena Garage contains 2,585 parking spaces, and is about 52 percent occupied during weekday midday. Other public garages with space availability in the area include the Moscone Garage (732 parking spaces and about 70 percent occupied during the midday), the SFMOMA Garage (410 parking spaces and about 80 percent occupied during the midday), and the Jessie Square Garage (372 parking spaces and about 75 percent occupied during the midday).

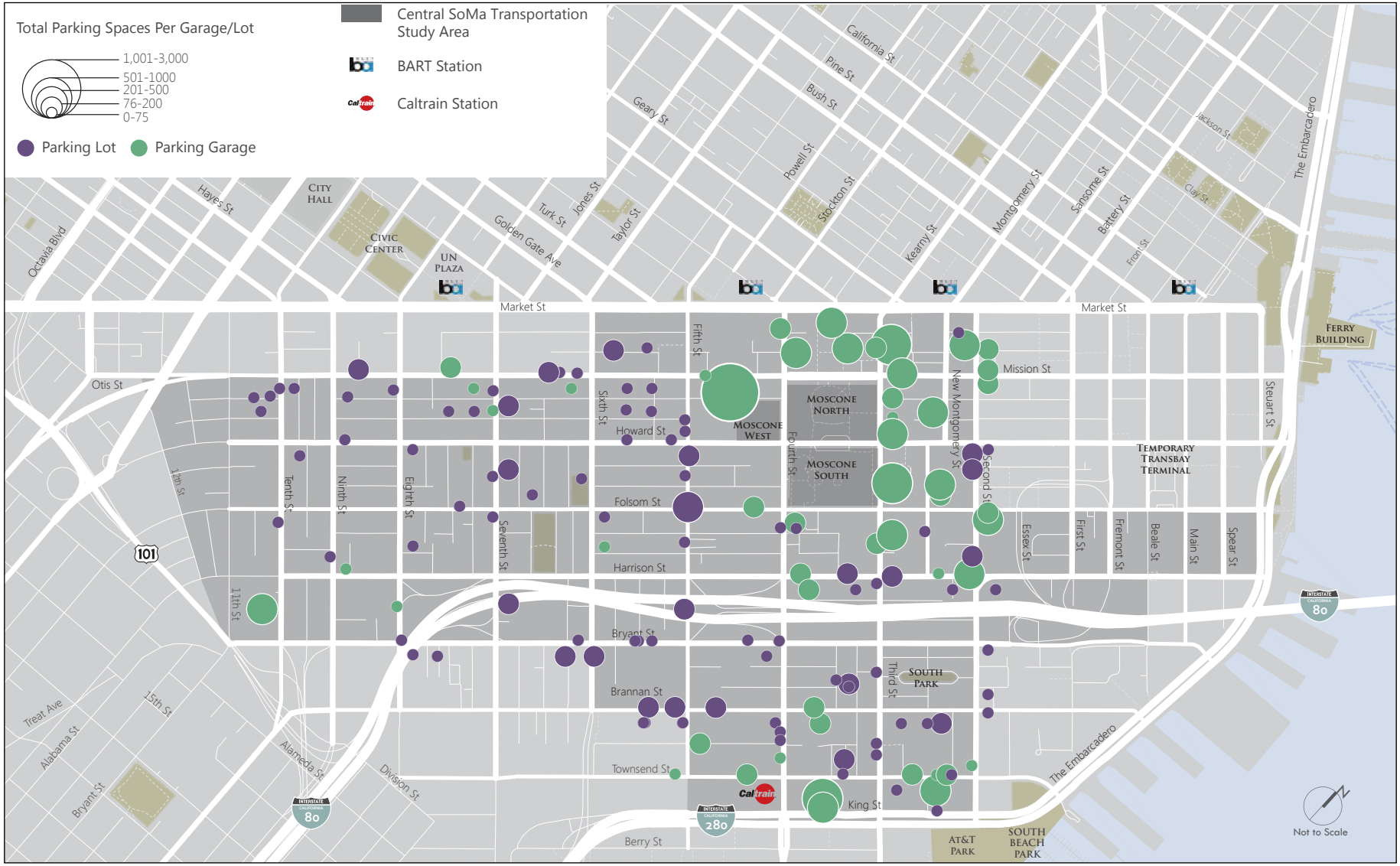
On-Street Parking

On-street parking within the parking study area generally consists of metered or time-limited spaces. Based on information from SFMTA's SF*park* data, there are about 3,840 on-street metered parking spaces within the parking study area (i.e., area bounded by Market, 11th, King, and Essex Streets). More than 70 percent of these spaces are general metered parking spaces, about 13 percent are commercial loading spaces, and about 10 percent are motorcycle parking spaces. The remaining spaces are disabled parking (i.e., ADA-accessible blue zones)[190], passenger loading/unloading zones, and unrestricted spaces. During the weekday morning and evening peak commute periods (i.e., generally 7:00 to 9:00 a.m. and 3:00 to 6:00 p.m.), on-street parking is prohibited on one or both sides of a number of transit-oriented or arterial streets (e.g., Mission, Third, and Sixth Streets).

There are some streets within the parking study area that are subject to SFMTA's Residential Permit Parking (RPP) program.[191] Within these areas, residents that have a residential parking permit are able to park throughout the day, whereas vehicles without permits are subject to time restrictions. There are around 1,050 RPP spaces in the parking study area, almost all of which fall under RPP Area U. A few RPP spaces in the eastern end of the parking study area are located in RPP Area Y. RPP regulations generally restrict weekday on-street parking to a one-hour or two-hour period, except for residents with permits. Additional parking regulations within the parking study area include two-hour (about 560 spaces), one-hour (about 450 spaces), and free (about 90 spaces) parking.

[190] A blue zone designates vehicle parking spaces for persons with a valid disabled parking permit. The SFMTA normally locates blue zones in areas with high public uses, such as in dense commercial areas and near public parks and playgrounds, where the blue zones can serve a large number of individuals.

[191] The preferential residential parking system (i.e., the Residential Permit Parking program) was established in 1976. The main goal of the program is to provide more parking spaces for residents by discouraging long-term parking by people who do not live in the area. Local regulations regarding the establishment of permit areas and requirements for permits can be found in the *San Francisco Transportation Code*, Division II, Article 900. Available at https://law.resource.org/pub/us/code/city/ca/SanFrancisco/0-snapshots/S-44/Transportation.html, accessed September 1, 2016.



SOURCE: Fehr & Peers

Case No. 2011.1356E: Central SoMa Plan

Figure IV.D-7

Existing Off-Street Parking Spaces

Existing on-street parking conditions were qualitatively assessed during field observations conducted during the weekday midday period, which is representative of the peak parking demand period for most non-residential land uses in the parking study area. Overall, the on-street parking spaces are well utilized throughout the day, with availability during the overnight hours at the commercial loading spaces. There are higher parking occupancy rates closer to Market Street and within the eastern portion of the parking study area, and lower occupancies towards the western and southern portions of the parking study area.

Emergency Vehicle Access Conditions

The existing roadway network enables emergency vehicle access to all buildings within the transportation study area. Emergency vehicles typically use major arterials[192] through the transportation study area when heading to and from incidents. Arterial roadways allow emergency vehicles to travel at higher speeds and provide enough clearance space to allow other traffic to maneuver out of the path of the emergency vehicle and yield the right of way.[193] While the turning radius and maneuverability is somewhat restricted on some roadways, including alleyways such as Jessie, Stevenson, Minna, and Natoma Streets, emergency vehicles can still access these streets and buildings. There are two San Francisco Fire Department fire stations in the transportation study area: Station 1 located on Folsom Street between Fifth and Sixth Streets, and Station 8 on Bluxome Street at Fourth Street. Other stations nearby include Station 36 on Oak Street at Franklin Street, Station 35 on The Embarcadero at Harrison Street, Station 4 on Mission Rock Street at Third Street, and Station 29 on Vermont Street at Sixteenth Street. The locations of the San Francisco Fire Department stations are presented on Figure IV.D-1, Transportation Study Area. Many traffic signals in the Central SoMa transportation study area are fire preemption equipped signals, and Fire Department Stations 1, 4, 8, and 36 currently have fire trucks equipped with preemption equipment; meaning that the intersection signal gives preference to emergency vehicles.

IV.D.3 Regulatory Framework

Federal and State Regulations

There are no federal regulations that address transportation impacts associated with the project.

The Sustainable Communities and Climate Protection Act of 2008 (Senate Bill 375)

Senate Bill 375 (SB 375, The Sustainable Communities and Climate Protection Act of 2008) requires each of California's Metropolitan Planning Organizations (MPOs) to prepare a sustainable communities strategy (SCS) as part of its regional transportation plan (RTP). The SCS includes greenhouse gas (GHG) emission reduction targets, along with land use, housing, and transportation policies that would allow the region to meet the targets. A key implementation strategy of SB 375 is the alignment of dense land uses along well-served

[192] Major arterials are cross-town thoroughfares whose primary function is to link districts within the city and to distribute vehicle traffic to and from the regional freeway facilities. Within the transportation study area, Howard, Folsom, Harrison and Bryant Streets are identified in the General Plan as major east/west arterials, and portions of all north/south streets between Third and 11th Street are identified as major north/south arterials.

[193] Per the *California Vehicle Code*, Section 21806, all vehicles must yield right of way to emergency vehicles and remain stopped until the emergency vehicle has passed.

transportation corridors, such as the Plan's proposal for increased density around the forthcoming Central Subway route. Individual development projects that are consistent with SCS strategies and with a regional plan that meets the GHG targets qualify for streamlined review of GHG emissions under CEQA. Further information regarding the Plan's consistency with *Plan Bay Area* (the San Francisco Bay Area's SCS) is provided in Chapter III, Plans and Policies, of this EIR. For the Bay Area, the per-capita GHG emission reduction target is a seven percent reduction by 2020 and a 15 percent reduction by 2035 from 2005 levels. *Plan Bay Area*, the Metropolitan Transportation Commission's regional transportation plan, adopted in July 2013, is the region's first plan subject to SB 375 requirements.

CEQA Section 21099(b)(1) (Senate Bill 743)

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 that "promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses." CEQA Section 21099(b)(2) states that upon certification of the revised guidelines for determining transportation impacts pursuant to Section 21099(b)(1), automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment under CEQA.

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 recommending that transportation impacts for projects be measured using a VMT metric.[194] On March 3, 2016, based on compelling evidence in that document an on the City's independent review of the literature on LOS and VMT, the San Francisco Planning Commission adopted OPR's recommendation to use the VMT metric instead of automobile delay to evaluate the transportation impacts of projects (Resolution 19579). (Note: the VMT metric does not apply to the analysis of impacts on non-automobile modes of travel such as riding transit, walking and bicycling.)

According to the impact assessment methodology recommended by OPR and adopted by the Planning Commission, a land use plan may have a significant impact on transportation if it is not consistent with the relevant SCS. For this purpose, consistency with the SCS means the following must be true:

- Development specified in the plan is also specified in the SCS (e.g., the plan does not specify developing in outlying areas specified as open space or Priority Conservation Area in the SCS); and
- Taken as a whole, development specified in the plan leads to a VMT that is equal to or less than the VMT per capita and VMT per employee specified in the SCS.

Plan Bay Area set a VMT per capita reduction target of 10 percent below the Bay Area 2005 regional average VMT levels by 2040 for residential development. No VMT per employee target was set.[195]

[194] OPR, *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA, Implementing Senate Bill 743 (Steinberg, 2013)*, January 20, 2016.
[195] Association of Bay Area Governments and Metropolitan Transportation Commission, Plan Bay Area, July 18, 2013. Available at http://files.mtc.ca.gov.s3.amazonaws.com/pdf/Plan_Bay_Area_FINAL/pbafinal/index.html.

Local and Regional Regulations and Plans

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 priority policy of the City and County of San Francisco (the City) by the Board of Supervisors in 1973. The *Transit-First Policy* is a set of principles that 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 conducting City affairs.

Vision Zero Policy

Vision Zero is San Francisco's road safety policy.[196] The City adopted Vision Zero as a policy in 2014, committing to build better and safer streets, educate the public on traffic safety, enforce traffic laws, and adopt policy changes that save lives. The goal is to create a culture that prioritizes traffic safety and to ensure that mistakes on roadways do not result in serious injuries or death. The result of this collaborative citywide effort will be safer more livable streets as San Francisco works to eliminate traffic fatalities by 2024.

San Francisco General Plan

The Transportation Element of the *San Francisco General Plan* contains objectives and policies that relate to nine aspects of the citywide transportation system: general regional transportation, congestion management, vehicle circulation, transit, pedestrian, bicycles, citywide parking, and goods management.[197] The Transportation Element references San Francisco's Transit-First Policy in its introduction and contains objectives and policies that are pertinent to travel in the project area.

San Francisco Bicycle Plan

The *San Francisco Bicycle Plan* describes a City program to provide the safe and attractive environment needed to promote bicycling as a transportation mode.[198] The *San Francisco Bicycle Plan* identifies the citywide bicycle route network, and establishes the level of treatment (i.e., Class I, Class II, Class III, or Class IV facility) on each route. The *San Francisco Bicycle Plan* also identifies near-term improvements that could be implemented within the next five years, as well as policy goals, objectives, and actions to support these improvements. It also includes long-term improvements, and minor improvements that would be implemented to facilitate bicycling in San Francisco.

[196] Information on Vision Zero available at http://visionzerosf.org/about/what-is-vision-zero/.
[197] CCSF, *San Francisco General Plan, Transportation Element*, Adopted July 1995. Available at http://www.sf-planning.org/ftp/general_plan/I4_Transportation.htm, accessed February 11, 2015.
[198] SFMTA, *San Francisco Bicycle Plan*, June 2009.

Better Streets Plan

The *San Francisco Better Streets Plan (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, which it defines 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 certain areas of the roadway, particularly at intersections.

Transportation Sustainability Program

The Transportation Sustainability Program is an initiative aimed at improving and expanding the transportation system to help accommodate new growth, and create a policy framework for private development to contribute to minimizing its impact on the transportation system, including helping to pay for the system's enhancement and expansion. The Transportation Sustainability Program is a joint effort by the Mayor's Office, the San Francisco Planning Department, the SFMTA, and the San Francisco County Transportation Authority (Transportation Authority), comprised of the following three objectives:

- Fund Transportation Improvements to Support Growth. The Transportation Sustainability Fee (TSF) is assessed on new development, including residential development, to help fund improvements to transit capacity and reliability as well as bicycle and pedestrian improvements. The TSF was passed by the Board of Supervisors and signed into law by the Mayor on November 25, 2015 (Board of Supervisors File No. 150790).[199] The new TSF replaces the Transit Impact Development Fee (TIDF) that was levied on most new non-residential development citywide to offset new development's impacts on the transit system. The TIDF still applies to some projects already in the entitlement and permitting process. The TSF will be applicable to residential and non-residential development projects within Central SoMa.
- Modernize Environmental Review. This component of the Transportation Sustainability Program would change how the City analyzes impacts of new development on the transportation system under the California Environmental Quality Act (CEQA). This reform has been helped by California Senate Bill 743, which requires that the existing transportation review standard, focused on automobile delay (vehicular level of service), be replaced with a more meaningful metric, VMT. VMT is a measure of the amount and distance that a project causes potential residents, tenants, employees, and visitors of a project to drive, including the number of passengers within a vehicle. Resolution 19579 regarding this reform was adopted at the Planning Commission hearing on March 3, 2016.
- Encourage Sustainable Travel. This component of the Transportation Sustainability Program would help manage demand on the transportation network through a Transportation Demand Management (TDM) Program, making sure new developments are designed to make it easier for new residents, tenants, employees, and visitors to get around by sustainable travel modes such as transit, walking, and biking. Each measure that would be included in the TDM program is intended to reduce VMT traveled from new development. Resolution 19628 of intent to initiate the *Planning Code* amendments was approved by the Planning Commission on August 4, 2016, and the *Planning Code* amendments have been forwarded to the Board of Supervisors for legislative approval.

[199] Two additional files were created at the Board of Supervisors from TSF regarding hospitals and health services, grandfathering, and additional fees for large projects: 151121 and 151257.

IV.D.4 Impacts and Mitigation Measures

Significance Criteria

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 *CEQA Guidelines*). For the purpose of this analysis, the following applicable thresholds were used to determine whether implementing the Plan or proposed open space and street network changes would result in a significant impact on transportation and circulation:

- 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;
- The project would have a significant effect on the environment if it would cause major traffic hazards;
- The 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 environment if project-related transit trips would cause the capacity utilization standard of a transit provider to be exceeded during the peak hours);
- The 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;
- The 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;
- The project would have a significant effect on the environment if it would result in a loading demand during the peak hour that could not be accommodated within proposed off-street loading facilities or within convenient on-street loading zones, and would create potentially hazardous conditions or significant delays affecting traffic, transit, bicycles, or pedestrians;
- The project would have a significant effect on the environment if it would result in a substantial parking deficit that could create hazardous conditions or significant delays affecting transit, bicycles, or pedestrians, or where particular characteristics of the project or the Plan Area demonstrably render use of other modes infeasible;
- The project would have a significant effect on the environment if it would result in inadequate emergency vehicle access; or
- Construction of the project would have a significant effect on the environment if the temporary construction activities' magnitude and duration would result in substantial interference with pedestrian, bicycle, or vehicle circulation and accessibility to adjoining areas, or result in potentially hazardous conditions.

As described in the Initial Study (EIR Appendix B), the Plan Area is not located within an area covered by an airport land use plan or within two miles of a public airport or public use airport; nor is it within the vicinity of a private airstrip. Therefore, implementation of the Plan 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. Therefore, these issues are not addressed further in this EIR.

Approach to Analysis

This section presents the methodology for analyzing transportation impacts and information considered in developing the travel demand generated by development that could occur under the Plan. The impacts of implementation of the Plan on the transportation network were analyzed using the guidelines set forth in the *SF Guidelines* and Planning Commission Resolution 19579 (see Transportation Sustainability Program, above) and supporting materials. The *SF Guidelines* and Planning Commission Resolution 19579 and supporting materials provide direction for analyzing transportation conditions and identifying the transportation impacts of projects in San Francisco.

Impacts Analysis Methodology

Vehicles Miles Traveled Analysis

The following identifies thresholds of significance and screening criteria used to determine if a land use project would result in significant transportation impacts under the VMT metric, as well as thresholds of significance and screening criteria used to determine if transportation projects would result in significant impacts by inducing substantial additional automobile travel. The proposed rezoning included as part of the Central SoMa Plan is analyzed in this EIR at a programmatic level, while analysis of the proposed street network changes are analyzed at a project level. Specific development within the Plan Area may be required to go through subsequent environmental review, and therefore information regarding future project level analysis of subsequent development projects is presented below for informational purposes.

Development under the Plan (Programmatic Level Analysis). The proposed rezoning within the Plan Area is evaluated in this EIR at a programmatic level. According to the impact assessment methodology recommended by OPR and adopted by the Planning Commission in accordance with CEQA Section 21099(b)(1), a land use plan may have a significant impact if it is not consistent with the relevant SCS (i.e., sustainable communities strategy).[200] For this purpose, consistency with the SCS consists of the following two criteria:

- Development specified in the plan is also specified in the SCS (e.g., the Plan does not specify developing in outlying areas specified as open space or Priority Conservation Area in the SCS); and
- Taken as a whole, development specified in the plan leads to a VMT that is equal to or less than the VMT per capita and VMT per employee specified in the SCS.

[200] The MTC's 2013 Regional Transportation Plan, *Plan Bay Area*, adopted in July 2013, is the region's SCS.

Plan Bay Area set a VMT per capita reduction target of 10 percent below the Bay Area 2005 regional average VMT levels by 2040 for residential development. No VMT per employee target was set.[201]

Consistent with OPR guidance, VMT effects of the Plan were measured over the full area where the Plan may substantively affect travel patterns, beyond the boundaries of the proposed rezoning. The approximate boundaries of the area included in the analysis are Market Street to the north, Second Street to the east, Townsend Street to the south, and Sixth Street to the west.

Analysis of consistency with the SCS was conducted using the regional MTC travel demand model used in the *Plan Bay Area* analysis for 2005 and 2040 cumulative conditions.

Street Network Changes (Project-Level Analysis). The proposed street network changes included in the Central SoMa Plan are evaluated in this EIR at the project level pursuant to OPR's proposed transportation project impact guidelines. OPR's guidelines specify that a transportation project would substantially induce automobile travel if it would generate more than 2,075,220 VMT per year. This threshold is based on the fair share VMT allocated to transportation projects required to achieve California's long-term greenhouse gas emissions reduction goal of 40 percent below 1990 levels by 2030. OPR's proposed transportation impact guidelines includes a list of transportation project types that would not likely lead to a substantial or measureable increase in VMT. If a project fits within the general types of projects (including combinations of types) described below, then it is presumed that VMT impacts would be less than significant and a detailed VMT analysis is not required. The following project types have been determined by OPR to not likely lead to a substantial or measureable increase in VMT:

- 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.
- Other Minor Transportation Projects:
  - Conversion of existing general purpose lanes (including vehicle ramps) to managed lanes (e.g., HOV, HOT, or trucks), or transit 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.
  - Conversion of streets from one-way to two-way operation with no increase in the number of mixed-flow travel lanes.
  - Addition of transportation wayfinding signage.
  - Removal of off-street 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.

[201] Association of Bay Area Governments and Metropolitan Transportation Commission, *Plan Bay Area*, July 18, 2013. Available at http://files.mtc.ca.gov.s3.amazonaws.com/pdf/Plan_Bay_Area_FINAL/pbafinal/index.html.

An assessment of the effects of development under the Plan and the proposed street network changes was conducted using the San Francisco Transportation Authority's SF-CHAMP model runs prepared for the Central SoMa Plan under year 2012 and 2040 cumulative conditions.

Future Project-Level Analysis of Subsequent Development Projects. While the VMT analysis for the Plan's proposed rezoning is based on the criteria presented above for "Development Under the Plan", subsequent development projects within Central SoMa would use the project-level criteria adopted by the Planning Commission. For development projects, a project would cause a significant impact related to substantial additional VMT if it exceeds the regional VMT per capita or employee for the particular use (i.e., residential, retail, or office) less 15 percent.[202] This approach is consistent with CEQA Section 21099 and the thresholds of significance for other land uses recommended in OPR's proposed transportation impact guidelines.

OPR's proposed transportation impact guidelines for individual development projects provides screening criteria to identify types, characteristics, or locations of land use projects that would not exceed these VMT thresholds of significance. OPR recommends that if a project or land use proposed as part of the project meet any of the below screening criteria, then VMT impacts are presumed to be less than significant for that land use and a detailed VMT analysis is not required. The screening criteria applicable to the project and how they are applied in San Francisco are described below:

- **Map-Based Screening for Residential, Office, and Retail Projects**—OPR recommends mapping areas that exhibit where VMT is less than the applicable threshold for that land use. Accordingly, the Transportation Authority has developed maps depicting existing VMT levels in San Francisco for residential, office, and retail land uses based on the SF-CHAMP 2012 base-year model run. The Planning Department uses these maps and associated data to determine whether a proposed project is located in an area of the city that is below the VMT threshold.
- **Small Projects**—OPR recommends that lead agencies may generally assume that a project would not have significant VMT impacts if the project would either: (1) generate fewer trips than the level for studying consistency with the applicable congestion management program or (2) where the applicable congestion management program does not provide such a level, fewer than 100 vehicle trips per day. The Transportation Authority's Congestion Management Program, December 2015, does not include a trip threshold for studying consistency. Therefore, the Planning Department uses the 100-vehicle-trip-per-day screening criterion as a level generally where projects would not generate a substantial increase in VMT.
- **Proximity to Transit Stations**—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 21155) would not result in a substantial increase in VMT. However, this presumption would not apply if the project would (1) have a floor area ratio of less than 0.75; (2) include more parking for

[202] OPR's proposed transportation impact guidelines state 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 is lower (8.4) than the regional average (17.2). Therefore, the city average is irrelevant for the purposes of the analysis.

use by residents, customers, or employees of the project than required or allowed, without a conditional use; or (3) is inconsistent with the applicable Sustainable Communities Strategy.[203]

The Transportation Authority uses SF-CHAMP to estimate VMT by private automobiles and taxis for different land use types. Travel behavior in SF-CHAMP is calibrated 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 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 site. For retail uses, the Transportation Authority uses trip-based analysis, which counts VMT from individual trips to and from the project (as opposed to an 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 overestimate VMT.

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. 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. These screening criteria and thresholds of significance are consistent with CEQA Section 21099 and the screening criteria recommended in OPR's proposed transportation impact guidelines.

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 residential. 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.
- **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.

For development projects, a project would generate substantial additional VMT if it exceeds the regional VMT per capita or employee for the particular use (i.e., residential, retail, or office) less 15 percent. This approach is

[203] 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.

consistent with CEQA Section 21099 and the thresholds of significance for other land uses recommended in OPR's proposed transportation impact guidelines.

Transit Analysis

Capacity Utilization. The impact of additional transit ridership generated by the Plan on local and regional transit providers was assessed by comparing the projected ridership to the available transit capacity at the maximum load point. Transit "capacity utilization" refers to transit riders as a percentage of the capacity of the transit line, or group of routes combined and analyzed as screenlines or cordons across which transit routes travel. The transit analyses were conducted for the peak direction of travel for the a.m. and p.m. analysis periods.

For the weekday a.m. and p.m. peak hour analyses, the transit capacity utilization was conducted at the Planning Department's four Muni downtown screenlines and for the three regional screenlines (for transit trips from and to the East Bay, North Bay, and South Bay). In addition, for the purposes of this Central SoMa analysis, the Muni routes serving the Central SoMa transportation study area were grouped into four cordons (Central SoMa cordons) and the capacity utilization was determined. See Figure IV.D-3, Downtown and Regional Screenlines, p. IV.D-8. The Central SoMa cordon analysis was conducted to describe the magnitude of transit travel to or from the Plan Area and to compare estimated transit demand to available capacities of the Muni routes and lines directly serving the Plan Area. Similar to the Muni downtown screenlines, Central SoMa cordons are hypothetical lines surrounding the perimeter of the transportation study area that would be crossed by persons traveling between the Plan Area and other parts of San Francisco. Four cordons were established around the transportation study area to analyze potential impacts of projects on Muni service: Northeast, Northwest, Southwest, and Southeast, with transit corridors within each cordon. The bus routes and light rail lines used in this cordon analysis provide the primary access to and from the Plan Area to the rest of the city. Other bus routes, such as those that do not directly serve the Plan Area, and would require a transfer, are not included. The Muni routes included in each cordon include:

- **Northeast Cordon**—F Market & Wharves historic streetcar, 8 Bayshore, 30 Stockton, 10 Townsend, 12 Folsom-Pacific, 27 Bryant, 30X Stockton Express, 41 Union, 45 Union-Stockton, and the 47 Van Ness.
- **Northwest Cordon**—2 Clement, 3 Jackson, 5 Fulton, 21 Hayes, 31 Balboa, 38 Geary, and the 38R Geary Rapid.
- **Southeast Cordon**—J Church, T Third, 8 Bayshore, 8AX/8BX Bayshore Expresses, 9 San Bruno, 9R San Bruno Rapid, 10 Townsend, 12 Folsom-Pacific, 14 Mission, 14R Mission Rapid, 14X Mission Express 19 Polk, and the 27 Bryant.
- **Southwest Cordon**—K Ingleside, L Taraval, M Ocean View, N Judah, 6 Parnassus, 7X Noriega Express, and the 7R Haight-Noriega Rapid.

The Muni downtown screenlines, regional screenlines, and the Central SoMa cordons are presented on Figure IV.D-3.

For service provided by Muni, the capacity includes seated passengers and an appreciable number of standing passengers per vehicle (the number of standing passengers is between 30 percent and 80 percent of the seated passengers depending upon the specific transit vehicle configuration). Muni has established a capacity

utilization standard of 85 percent, which was applied for assessment of peak hour conditions. The regional transit providers have a peak hour capacity utilization standard of 100 percent.

The Plan was determined to have a significant transit impact if project-generated transit trips would cause Muni downtown or regional screenlines, and Central SoMa cordons, operating at less than their capacity utilization standards under existing conditions, to operate above capacity utilization standards.

Under 2040 cumulative conditions, the Plan was determined to have a significant cumulative impact if its implementation would contribute considerably to a screenline or corridor projected to operate at greater than the capacity utilization standard under 2040 cumulative plus project conditions (i.e., a contribution of five percent or more to the transit ridership on the screenline or cordon). In addition, if it was determined that the Plan would have a significant project-specific transit impact under existing plus Plan conditions, then the impact would also be considered a significant cumulative impact under 2040 cumulative conditions.

Transit Travel Times. Impacts of development under the Plan and proposed street network changes on transit lines were also measured in terms of increases to transit travel times. The transit delay analysis was conducted for the a.m. and p.m. peak hour conditions for the 8 Bayshore, 8AX Bayshore Express, 8BX Bayshore Express, 10 Townsend, 12 Folsom-Pacific, 14 Mission, 14R Mission Rapid, 27 Bryant, 30 Stockton, 45 Union-Stockton, and 47 Van Ness routes. The analysis was conducted for conditions considering the impact associated with new development that could occur under the Plan and the proposed street network changes (i.e., upgraded and new transit-only lanes, travel lane reductions, cycle tracks[204]).

The analysis evaluated increases to transit travel times associated with the following three influencing factors:

- **Traffic congestion delay**—Traffic congestion associated with increases in area traffic slows down transit vehicles and results in increased transit travel times. Traffic congestion delays are calculated by summing the average vehicular delay at each intersection along the transit routes within the transportation study area. The increase in total route segment delay is equal to the increase in travel time associated with the Plan.
- **Transit reentry delay**—Transit vehicles typically experience delays after stopping to pick up and drop off passengers while waiting for gaps in adjacent street traffic in order to pull out of bus stops. As traffic volumes on the adjacent street increase, reentering the flow of traffic becomes more difficult and transit vehicles experience increased delay. Transit reentry delay was calculated using empirical data in the 2000 Highway Capacity Manual (HCM). Total transit reentry delay for each route was calculated as the sum of transit reentry delay at each stop within the transportation study area.
- **Passenger boarding delay**—Although increases in transit ridership are generally viewed positively, the amount of time a transit vehicle has to stop to pick up and drop off passengers (i.e., the transit vehicle dwell time) is directly correlated to the number of passengers boarding the vehicle. As general transit ridership grows, vehicles would have to spend more time at stops, which may increase overall transit travel times. Passenger boarding delay was calculated assuming four seconds per passenger boarding or alighting. Passenger boardings within the study area were estimated using the transit assignment by route, as obtained from the SF-CHAMP model.

[204] A cycle track is an exclusive bicycle facility that is separated from vehicle traffic and parked vehicles by a buffer zone.

The Plan was determined to have a significant impact if it would increase existing transit travel times on a route so that additional transit vehicles would be required to maintain the existing headways between buses. This was assumed to be the case if the Plan's travel time increases on a particular route would be greater than half of the existing route headway, or the added travel time would require the provision of one or more additional transit vehicles in order to maintain scheduled service, as determined by SFMTA's scheduling spreadsheet. If it was determined that the Plan would have a significant project-specific travel time impact under existing plus Plan conditions, then the impact would also be considered a significant cumulative impact under 2040 cumulative conditions.

Pedestrian Analysis

Pedestrian conditions were assessed qualitatively and quantitatively. The qualitative assessment included assessment of safety and right-of-way issues, potential worsening of existing, or creation of new, safety hazards, and conflicts with bicycles, transit, and vehicles.

Pedestrian crosswalk, sidewalk and corner LOS conditions were analyzed quantitatively for the peak hour of both the midday and p.m. peak periods (i.e., peak periods of 11:00 a.m. to 1:00 p.m. and 4:00 to 6:00 p.m., respectively). Pedestrian counts at the study locations were counted in April and July 2013, and May 2014. Quantitative analysis of pedestrian operating characteristics of the crosswalk, sidewalk, and corner locations was conducted using the HCM 2000 methodology. Sidewalk operating conditions are measured by average pedestrian flow rate, which is defined as the average number of pedestrians that pass a specific point on the sidewalk during a certain period (pedestrians per minute per foot or p/m/f). The width of the sidewalk at this point is considered the "effective width", which accounts for reduction in amount of sidewalk available for travel due to street furniture and the side of buildings. LOS for sidewalks is presented for "platoon" conditions, which represents the conditions when pedestrians are walking together in a group. Pedestrian level of service conditions were calculated at the most restrictive sidewalk location (i.e., at the "pinch point") along a given block face.

Crosswalk and corner LOS analysis measures the amount of space (square feet) each pedestrian has in the crosswalk or corner. These measurements depend on pedestrian volumes, signal timing, corner dimensions, crosswalk dimensions and roadway widths.

With the HCM methodology, an upper limit for acceptable conditions is LOS D, which equals approximately 15 to 24 square feet per pedestrian for crosswalks, and approximately 10 to 15 pedestrians per minute per foot for sidewalks. LOS E and LOS F represent unacceptable conditions. At LOS E normal walking gaits must be adjusted due to congested conditions and independent movements are difficult; at LOS F walking speeds are severely restricted.

Under existing plus Plan conditions, the Plan was determined to have a significant pedestrian impact at a crosswalk, sidewalk or corner location if it would cause the analysis location to deteriorate from LOS D or better to LOS E or LOS F, or from LOS E to LOS F conditions. Under 2040 cumulative conditions, the Plan was determined to have a significant impact if its implementation would contribute considerably to pedestrian LOS E or LOS F conditions under 2040 cumulative plus Plan conditions. In addition, if it was determined that the Plan would have a significant project-specific pedestrian impact under existing plus Plan conditions, then the impact would also be considered a significant cumulative impact under 2040 cumulative conditions.

Bicycle Analysis

Bicycle conditions were assessed qualitatively as they relate to the project area, including bicycle routes, safety and right-of-way issues, potential worsening of existing or creation of new safety hazards, and conflicts with vehicles and commercial vehicle loading activities.

Loading Analysis

Loading analysis for the Plan was conducted by comparing the loading supply that would be provided to the projected demand that would be generated by development under the Plan, as well as the effects of the proposed street network changes on the on-street loading supply on safety and right-of-way issues, potential worsening of existing or creation of new safety hazards, and conflicts with bicycle, transit and vehicles.

Parking Analysis

A parking assessment was conducted by comparing the proposed parking supply to the parking demand generated by development that could occur under the Plan. The effects of the proposed street network changes on the on-street parking supply and areawide parking conditions was assessed, as well as the effects of increased parking demand and changes in on-street parking supply on safety and right-of-way issues.

Emergency Vehicle Access Analysis

Potential impacts on emergency vehicle access were assessed qualitatively. Specifically, the analysis assessed whether the proposed street network changes and/or travel demand associated with the Plan would impair, hinder, or preclude adequate emergency vehicle access.

Construction-Related Transportation Impact Analysis

Potential short-term construction impacts were assessed qualitatively based on impacts of general construction-related activities for development projects and street network improvements on sidewalks, bicycle lanes, and/or travel lanes.

Travel Demand Methodology and Results

Methodology

Travel demand associated with the Plan's projected growth in residential units and jobs, as well as changes in travel patterns associated with the Plan's proposed street network changes were estimated based on output from the San Francisco County Transportation Authority's travel demand forecasting model (SF-CHAMP model). 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 travel for a full day based on the total number, 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 SF-CHAMP model predicts person travel by mode for auto, transit, walking and bicycle trips. The SF-CHAMP model also provides forecasts of vehicular traffic on regional freeways, major arterials and on the transportation 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.

SF-CHAMP divides San Francisco into 981 geographic areas, known as TAZs. It also includes zones outside of San Francisco, for which it uses the same geography as the current MTC Model: "Travel Model One". For each TAZ, the model estimates the travel demand based on TAZ population and employment assumptions developed by the Association of Bay Area Governments (ABAG). Within San Francisco, the San Francisco Planning Department is responsible for allocating ABAG's countywide growth forecast to each TAZ for the future cumulative year model, based upon existing zoning and approved plans, using an area's potential zoning capacity, and the anticipated extent of redevelopment of existing uses. The current cumulative future year of 2040 has been used consistently for recent large transportation studies in San Francisco. The ABAG assumptions used for this study are from the *Projections, Jobs-Housing Connection*, May 2012.

Forecasts of transit ridership, pedestrians, and traffic for use in impact analysis were developed by using observed transit ridership, observed pedestrian counts, and observed vehicle turning movement counts, and adding differences in growth from SF-CHAMP model outputs between a 'No Project' scenario, and each project scenario. This ensures that each scenario is evaluated against a standard set of numbers that is rooted in observed data. These differences were evaluated and adjusted for developing forecasts. Thus, existing and 2040 cumulative travel demand forecasts for traffic, transit, and pedestrians for each analysis scenario (as defined below) were estimated from output from the SF-CHAMP model as follows:

- The "Existing plus Plan" travel demand was estimated by adding the traffic, transit, and pedestrian trip growth obtained from the SF-CHAMP model between existing conditions without and with the Plan, to actual data collected in the field.
- Future year "2040 cumulative No Project" (i.e. without the Plan) conditions were developed by adding traffic, transit, and pedestrian trip growth obtained from the SF-CHAMP model between existing and 2040 No Project conditions to actual existing data collected in the field.
- The "2040 cumulative plus Plan" conditions were developed by adding the traffic, transit, and pedestrian trip growth obtained from the SF-CHAMP model between 2040 cumulative No Project conditions (i.e., without the Plan) and 2040 conditions with the Plan, to the 2040 cumulative No Project conditions (as developed above).

Central SoMa Plan Travel Demand by Mode of Travel

The travel demand associated with development under the Plan includes trips generated by additional employees, residents, and visitors. **Table IV.D-3, Summary of Central SoMa Plan Area Weekday AM and PM Peak Hour Travel Demand by Mode—Existing and 2040 Cumulative Conditions**, summarizes the increase in person trips[205] and vehicle trips during the a.m. and p.m. peak hours generated by development under the Plan for both existing and 2040 cumulative conditions. Results of the various SF-CHAMP model analysis scenarios that include the street network changes did not identify appreciable changes to the number or mode of person trips when compared to the scenario with only development under the Plan, thus they are not presented in Table IV.D-3.

[205] A person trip is a trip made by one person by any means of transportation (auto, transit, walk, etc.).

TABLE IV.D-3 SUMMARY OF CENTRAL SOMA PLAN AREA WEEKDAY AM AND PM PEAK HOUR TRAVEL DEMAND BY MODE—EXISTING AND 2040 CUMULATIVE CONDITIONS

	Person Trips				
	Auto	**Transit**	**Other[a]**	**Total**	**Vehicle Trips**
EXISTING CONDITIONS					
AM Peak Hour					
Existing	8,420	7,290	5,530	21,240	7,530
Existing plus Plan	12,410	11,450	9,460	33,320	10,770
Change from Existing	*3,990 (47%)*	*4,160 (57%)*	*3,930 (71%)*	*12,080 (57%)*	*3,240 (43%)*
PM Peak Hour					
Existing	11,350	8,510	8,850	28,710	9,770
Existing plus Plan	16,560	12,940	14,970	44,470	13,810
Change from Existing	*5,210 (46%)*	*4,430 (52%)*	*6,120 (69%)*	*15,760 (55%)*	*4,040 (41%)*
2040 CUMULATIVE CONDITIONS					
AM Peak Hour					
2040 Cumulative No Project	10,770	13,860	11,690	36,320	9,200
2040 Cumulative plus Plan	13,840	18,070	15,340	47,250	11,670
Change from 2040 Cumulative No Project	*3,070 (29%)*	*4,210 (30%)*	*3,650 (31%)*	*10,930 (30%)*	*2,470 (27%)*
PM Peak Hour					
2040 Cumulative No Project	15,750	16,730	18,950	51,430	12,890
2040 Cumulative plus Plan	19,830	21,320	24,880	66,030	15,950
Change from 2040 Cumulative No Project[b]	*4,080 (26%)*	*4,590 (27%)*	*5,930 (31%)*	*14,600 (28%)*	*3,060 (24%)*

SOURCE: San Francisco Transportation Authority; Fehr & Peers, 2016.

NOTES:

a. Other includes non-motorized modes such as walking and bicycling.

b. Overall, the project generated trips decrease by approximately 10 percent between the existing and future land uses. This is consistent with observations of how SF-CHAMP and other travel models predict travel behaviors in the future. The primary reasons for reduction in trips between existing and future years is due to a greater internalization of trips with TAZs caused by a better balance of jobs and housing and increased cost to exit TAZs due to greater congestion in the future.

As shown in Table IV.D-3, the increase in percentage growth of each type of person trip with the Plan is similar in both the a.m. and p.m. peak hours under both the existing and 2040 cumulative conditions. The largest shift in trips generated by the Plan, both by magnitude and percentage increase, is 'other' trips, which include mostly walk trips, but also bicycle trips. Thus, with the Plan, more people may choose to travel via walking and bicycling due to both the increase in complimentary land uses in the Plan Area (e.g., jobs, housing, retail, etc.) and pedestrian amenities associated with the Plan. This result can further be seen in **Table IV.D-4, Summary of Mode of Travel for Central SoMa—Weekday PM PEAK Period—Existing and 2040 Cumulative Conditions**,

where for both the existing and 2040 cumulative conditions, the percentage of auto and transit trips with implementation of the Plan either stay the same, or decrease, and 'other' trips increase.

TABLE IV.D-4 SUMMARY OF MODE OF TRAVEL FOR CENTRAL SOMA—WEEKDAY PM PEAK PERIOD—EXISTING AND 2040 CUMULATIVE CONDITIONS

	Existing Conditions		2040 Cumulative Conditions	
Mode of Travel	**Existing**	**Existing plus Plan**	**No Project**	**2040 Cumulative plus Plan**
Auto	39%	37%	31%	30%
Transit	30%	29%	32%	32%
Other[a]	31%	34%	37%	38%
Total	**100%**	**100%**	**100%**	**100%**

SOURCE: San Francisco Transportation Authority; Fehr & Peers, 2016.

NOTES:

The mode share conditions for a.m. peak conditions are similar to the p.m. peak presented in this table, however, with slighter higher transit mode share and slightly lower mode share for other modes, which includes walking and bicycling.

a. Other includes non-motorized modes, including walking and bicycling.

Loading and Parking Demand

The *SF Guidelines* methodologies for estimating commercial vehicle and freight loading/unloading demand and parking demand were used to calculate the demand associated with development under the Plan. Development under the Plan is expected to generate a daily truck/service vehicle loading demand of 1,754 loading spaces; the peak hour loading demand is expected to be about 102 spaces. In addition, development under the Plan is expected to generate a net-new daily parking demand of 20,973 spaces, 27 percent of which would be for residential demand and 73 percent of which would be for non-residential uses (including demand for employee and visitor parking).

Impact Evaluation

This section presents the assessment of traffic, transit, pedestrian, bicycle, loading, parking, emergency vehicle access, and construction impacts generated by the proposed project.

VMT Impacts

Impact TR-1: Development under the Plan, including the proposed open space improvements and the street network changes, would not cause substantial additional VMT or substantially increase automobile travel. (Less than Significant)

As presented under section "Significance Criteria" above, traffic impacts were assessed based on changes in VMT and automobile travel, and whether the Plan would create major traffic hazards. The impact assessment below also includes a discussion of intersection and freeway ramp operations, which is provided for informational purposes only. As noted in the Regulatory Framework section above, and consistent with CEQA Section 21099(b)(1), vehicle delay is no longer used as a significance criterion in San Francisco.

The effects of the proposed rezoning, as well as the street network changes included as part of the Plan, regarding VMT are analyzed in this EIR at a programmatic level, while the proposed street network changes

are also analyzed at a project level. Specific development projects within the Plan Area may be required to go through separate environmental review, and therefore information for project-level analysis of subsequent development projects is also included in this VMT analysis for informational purposes.

Development under the Plan (Programmatic Level Analysis). The impact assessment of the Plan's rezoning proposal to provide for increased development potential requires demonstrating consistency with the region's sustainable communities strategy (SCS). The MTC's 2013 Regional Transportation Plan, *Plan Bay Area*, adopted in July 2013, is the region's SCS. *Plan Bay Area* set a VMT per capita reduction target of 10 percent below the Bay Area 2005 regional average VMT levels by 2040 for residential development. No VMT per employee target was set, however, VMT per capita for employment is included in this impact assessment.[206] The area affected by the Plan is located in the SoMa neighborhood, and, for purposes of this analysis, is bounded by Market, Second, Townsend, and Sixth Streets. Central SoMa is located in the central core of San Francisco, which is the urban hub of the San Francisco Bay Area region, and is located within a Priority Development Area in *Plan Bay Area*. The Plan does not specify development in outlying areas or areas specified as open space or priority conservation areas in the SCS.

In preparing *Plan Bay Area*, MTC used a regional activity-based travel model, Travel Model One, to estimate the Bay Area regional average VMT.[207] The *Plan Bay Area* VMT data was used to estimate the 2005 and 2040 residential VMT per capita and office VMT per employee for the Central SoMa area used in the analysis (i.e., the area bounded by Market, Second, Townsend, and Sixth Streets; the area where the Plan would primarily affect travel patterns).[208,209] The 2005 and 2040 VMT data from the MTC Travel Model One was adjusted to reflect the VMT for the Central SoMa area, and also to reflect the projected increase in residents and employment associated with the Plan. The results of the VMT analysis of the proposed Plan are presented in **Table IV.D-5, Average Daily VMT per Capita, Plan Bay Area Data, 2005 Baseline and 2040 (with Central SoMa Plan) Conditions**.

As presented in Table IV.D-5, for residential uses, the reduction in daily VMT per capita for the Central SoMa area between 2005 and 2040 would be 30.7 percent with implementation of the Central SoMa Plan, which is greater than the target 10 percent reduction below 2005 levels in *Plan Bay Area*. Furthermore, the residential daily VMT per capita for the Central SoMa area of 2.8 for 2005 and 2.0 for 2040 (with Plan implementation) is substantially below the regional average target of 14.6 average daily VMT per capita (i.e., Bay Area Regional average daily VMT of 16.2 less 10 percent is 14.6 average daily VMT per capita). While not used for determining consistency with *Plan Bay Area*, the average daily VMT per employee in the Central SoMa analysis area is also projected to decrease between 2005 and 2040 conditions. As shown on Table IV.D-5, the reduction in daily VMT per employee for the Central SoMa area between 2005 and 2040 would be 26.6 percent. In addition, similar to the residential VMT per capita, the daily VMT per employee for the Central SoMa area of 10.4 for 2005 and 7.6 for 2040 conditions is substantially below the Bay Area regional average of 24.5 for

[206] Association of Bay Area Governments and Metropolitan Transportation Commission, Plan Bay Area, July 18, 2013. Available at http://files.mtc.ca.gov.s3.amazonaws.com/pdf/Plan_Bay_Area_FINAL/pbafinal/index.html.
[207] Documentation regarding Travel Model One and the use of Travel Model One for Plan Bay Area is available online. Association of Bay Area Governments and Metropolitan Transportation Commission, Model Documentation and Presentations. Available at http://analytics.mtc.ca.gov/foswiki/Main/Development. Association of Bay Area Governments and Metropolitan Transportation Commission, Model Documentation and Presentations. Available at http://analytics.mtc.ca.gov/foswiki/Main/PlanBayArea.
[208] Data available at http://analytics.mtc.ca.gov/foswiki/Main/VmtPerCapita.
[209] Data available at http://analytics.mtc.ca.gov/foswiki/Main/PlanBayAreaVmtPerCapita.

2005 and 20.3 for 2040 conditions. Therefore, the Central SoMa Plan Area is expected to attain the *Plan Bay Area* goal of reducing VMT per capita by 10 percent compared to year 2005 levels, and programmatic level VMT impacts would be ***less than significant***. The VMT per capita would likely decrease gradually from 2005 levels to the projected 2040 levels over time as Plan implementation progresses.

TABLE IV.D-5 AVERAGE DAILY VMT PER CAPITA, PLAN BAY AREA DATA, 2005 BASELINE AND 2040 (WITH CENTRAL SOMA PLAN) CONDITIONS

Type	2005[a]	2040 with Plan	
		VMT per Capita	% Reduction in VMT in Central SoMa from 2005
Central SoMa Area			
Residential[b]	2.8	2.0	30.7%
Employment[c]	10.4	7.6	26.6%
Bay Area Regional Average (without the Plan)			
Residential[b]	16.2	14.8	—
Employment[c]	24.5	20.3	—

SOURCE: MTC/ABAG; LCW Consulting, 2016.

NOTES:

a. The MTC/ABAG Plan Bay Area VMT data was the source for the 2005 and 2040 VMT per capita for the Bay Area Regional Average and for the Central SoMa area average. The average VMT per capita for the seven MTC TAZs that comprise the Central SoMa area used for the VMT analysis (i.e., bounded by Market, Second, Townsend, and Sixth Streets) were adjusted to reflect that only a portion of three MTC TAZs are included within the Central SoMa analysis area. The adjustments were based on the more detailed TAZ land use data used in the Transportation Authority's SF-CHAMP model for the analysis scenarios developed for this project. Analysis of consistency with Plan Bay Area, the regional SCS, is based on the goal of a 10 percent reduction in residential average daily VMT per capita between 2005 and 2040 conditions. Average daily VMT for 2012 conditions for the Central SoMa area and the Bay Area regional average are presented in Table IV.D-6, Average Daily VMT per Capita, SF-CHAMP Model Data, Existing (2012) and 2040 Conditions, p. IV.D-38. Differences in VMT values are due to model differences (i.e., MTC's Travel Model One, and the San Francisco's Transportation Authority's SF-CHAMP), and inclusion of all employment within MTC's VMT values, and disaggregation between employees and visitors in the SF-CHAMP model. Despite the differences in the results, the trends between those presented in *Plan Bay Area* and in this EIR are similar. Therefore, the SF-CHAMP estimates presented in Table IV.D-6 are valid to use as a comparison with *Plan Bay Area* estimates.

b. For CEQA analysis and consistency of plans with the regional SCS, Plan Bay Area set a VMT per capita reduction target of 10 percent below the Bay Area regional VMT levels for residential population by 2040.

c. Employment VMT per capita provided for informational purposes. Plan Bay Area does not include a reduction target for employment.

An assessment of the VMT effects of the proposed Plan rezoning was also performed using the Transportation Authority's SF-CHAMP model to estimate VMT for the TAZs that comprise the area where the Plan would substantively affect travel patterns for 2012 and 2040 conditions. This assessment was conducted to determine if the VMT analysis using the SF-CHAMP model for 2012 and 2040, is in agreement with the MTC/ABAG VMT analysis for 2005 and 2040. The SF-CHAMP model uses 2012 as the existing base conditions, and uses 2040 residential and job growth estimates prepared by Association and Bay Area Governments and adjusted by the San Francisco Planning Department. The land use scenario uses projections from the Sustainable Communities Strategy: Jobs-Housing Connections from *Plan Bay Area*, which were adjusted to reflect land use growth that would be anticipated with the proposed Central SoMa rezoning. SF-CHAMP includes transportation network changes that are reasonably foreseeable, including those in the latest adopted Regional Transportation Plan and the latest adopted San Francisco Transportation Plans, and/or are undergoing

environmental review.[210] **Table IV.D-6, Average Daily VMT per Capita, SF-CHAMP Model Data, Existing (2012) and 2040 Conditions**, presents the results of the VMT assessment using the Transportation Authority's SF-CHAMP model for the Central SoMa area included in the analysis, and for the Bay Area regional average.

TABLE IV.D-6 AVERAGE DAILY VMT PER CAPITA, SF-CHAMP MODEL DATA, EXISTING (2012) AND 2040 CONDITIONS

Analysis Year/Land Use	Bay Area Regional Average	Central SoMa Area[a]	
		Without Plan[b]	Plus Plan
Existing (2012)			
Residential	17.2	2.1	1.9
Employment (office)	19.1	8.2	8.7
Visitors (retail)	14.9	4.4	4.2
2040 Cumulative			
Residential	16.1	1.8	1.6
Employment (office)	17.0	6.8	7.1
Visitors (retail)	14.6	4.6	4.3

SOURCE: SF-CHAMP, Fehr & Peers, 2016.

NOTES:

a. Average VMT per capita for the 28 Traffic Analysis Zones (TAZs) within the Central SoMa area bounded by Market, Seconds, Townsend, and Sixth Streets.

b. Plan assumes development under the Plan and proposed street network changes.

As shown in Table IV.D-6, the average daily VMT per capita for conditions without and with the Plan would be substantially lower than the Bay Area regional average for the residential, office, and retail land uses. With Plan implementation, VMT per capita would decrease slightly in the residential and retail categories, and increase slightly in the office category. These increases in the employment category are within the general margin of error inherent in efforts to model travel behavior two decades into the future, and the plus Plan VMT per capita levels would remain substantially lower than the Bay Area regional average. Given the relatively low average daily VMT per capita in the Plan Area, locating land use growth in Central SoMa (part of the central core of San Francisco with multiple transit and non-motorized travel options), would result in less VMT per capita than if this growth were to be located in most other locations within the Bay Area or San Francisco. These results are in agreement with those presented in Table IV.D-5.

Street Network Changes (Project-Level Analysis). The Plan includes proposed street network changes that would alter the transportation network. These include safety improvements, conversion of mixed-flow travel lanes to transit-only lanes and cycle tracks, installation of new traffic control devices including signalized midblock pedestrian crossings, signal timing optimization, removal of on-street parking, removal and modification of on-street commercial loading regulations. These Plan features fit within the general types of projects identified by OPR (discussed in the "Approach to Analysis" section above) that would not substantially induce automobile travel. Furthermore, as described above in "Travel Demand Methodology and Results" beginning on p. IV.D-32, results of the SF-CHAMP model analysis scenarios that include the proposed street

[210] Manoj Madhavan and Chris Espiritu, San Francisco Planning Department, Memo to Transportation Team, "CEQA – 2040 SF-CHAMP Modeling Methodology Assumptions," April 25, 2016.

network changes did not identify appreciable changes to the mode or number of person trips when compared to the scenario with only development under the Plan. Therefore, the proposed street network changes would not result in a substantial increase in automobile travel,[211] and impacts of the transportation elements of the Plan related to VMT would be less than significant.

Future Project-Level Analysis of Subsequent Development Projects. The majority of subsequent development projects under the proposed Plan would likely consist of a variety of mixed-use office, residential, hotel, retail, and PDR (production, distribution, and repair) uses. Other land uses, such as public services and event centers, may also be developed in the area. As described in "Approach to Analysis" above, subsequent development projects in Central SoMa would need to meet the project-level criteria adopted by the Planning Commission. For development projects in San Francisco, a project would result in a significant impact related to substantial additional VMT if it exceeds the regional VMT per capita or employee for the particular land use (i.e., residential, office, or retail) less 15 percent. **Table IV.D-7, Average Daily VMT per Capita for Central SoMa Plan Area TAZs by Land Use, Existing (2012) and 2040 Cumulative Conditions** presents the average daily VMT per capita for the residential, office, and retail land uses for the TAZs within the Central SoMa Plan Area, as obtained from the SF-CHAMP model.

For the TAZs in the Central SoMa Plan Area, the existing daily average VMT per capita for residential and hotel uses ranges from 1.8 to 3.4 across the TAZs that comprise the Central SoMa Plan Area, which is 80 to 90 percent below the existing regional average daily VMT per capita of 17.2 for residential and hotel uses. The existing average daily VMT per capita for the Central SoMa TAZs for office and PDR uses ranges from 7.3 to 18.1, which is 47 to 62 percent below the existing regional average daily VMT per capita of 19.1 for office and PDR uses. The existing daily average VMT per capita for the Central SoMa TAZs for retail uses ranges from 7.0 to 10.3, which is 31 to 53 percent below the existing regional average daily VMT per capita of 14.9 for retail uses. Given that all subsequent projects under the Plan would be located in an area where the existing VMT is more than 15 percent below the existing regional average, it is anticipated that most subsequent mixed-use, office, residential, hotel, retail, or PDR projects pursuant to the Plan would not result in substantial additional VMT and impacts would be less-than-significant. The VMT per capita for all parcels within the Central SoMa Plan Area is more than 15 percent less than the regional VMT, and development projects in these TAZs would therefore meet the Map-based Screening criteria described in the Approach to Analysis Section. Furthermore, all parcels within the Central SoMa Plan Area meet the Proximity to Transit Stations screening criterion (provided such projects also meet the floor area ratio and parking requirements of this criterion), which also indicates that subsequent projects in the Plan Area would not cause substantial additional VMT.[212] Therefore, it is anticipated that most subsequent development projects pursuant to the proposed Plan would not cause significant VMT impacts. This determination would be confirmed through project-level environmental review at the time when subsequent projects are proposed and considered for approval through the entitlement review process.

Mitigation: None required.

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

TABLE IV.D-7 AVERAGE DAILY VMT PER CAPITA FOR CENTRAL SOMA PLAN AREA TAZS BY LAND USE, EXISTING (2012) AND 2040 CUMULATIVE CONDITIONS

	Existing (2012)			2040 Cumulative		
Central SoMa Plan Area TAZs	Residential	Office	Retail	Residential	Office	Retail
628	2.0	7.6	7.2	1.7	6.5	7.4
631	2.2	8.2	9.1	1.8	6.7	8.7
638	2.5	8.6	9.3	1.9	6.9	9.0
639	2.9	8.7	9.0	2.0	6.8	8.7
640	3.1	8.6	7.4	2.2	6.8	7.7
641	3.2	9.0	7.0	2.2	7.0	7.6
642	3.2	9.4	9.4	2.4	7.3	9.3
643	3.1	9.4	9.6	2.2	7.2	9.3
644	3.2	10.0	9.9	2.3	7.4	9.7
645	2.7	9.2	9.3	2.0	7.0	9.1
664	2.6	8.3	7.7	1.9	6.6	7.8
665	3.0	8.3	7.8	2.1	6.6	7.8
667	1.9	7.5	7.3	1.6	6.1	7.1
668	1.8	7.3	7.2	1.5	6.2	7.2
672	2.1	7.8	7.5	1.7	6.4	7.6
691	3.2	8.2	8.3	2.2	6.5	8.0
692	3.2	8.6	7.8	2.3	6.7	8.1
693	3.3	9.0	8.9	2.4	7.0	8.9
694	3.4	9.4	9.4	2.5	7.3	9.2
925	3.0	10.1	10.3	2.1	7.4	9.6
Minimum	*1.8*	*7.3*	*7.0*	*1.5*	*6.1*	*7.1*
Maximum	*3.4*	*10.1*	*10.3*	*2.5*	*7.4*	*9.7*

SOURCE: SF Planning Department Transportation Information Map, available at http://sftransportationmap.org/, 2016.
NOTE:
Average VMT per capita for the Traffic Analysis Zones (TAZs) within the Central SoMa Plan Area.

It should be noted that implementation of **Mitigation Measure M-NO-1a, TDM Plan for Development Projects** (described in Impact NO-1), would encourage sustainable modes such as transit, bicycling, and walking, and discourage the use of single-occupant vehicles through provision of transportation amenities to make travel by transit and active modes, such as bicycling and walking, safer and more convenient. By facilitating travel via non-auto modes, implementation of Mitigation Measure M-NO-1a, TDM Plan for Development Projects, would further reduce the VMT per capita associated with development projects, although it is not required to mitigate the less-than-significant VMT impact. As noted above, the Planning Department is currently pursuing an ordinance amending the *Planning Code* to establish a citywide TDM Program. Resolution 19628 of intent to initiate the *Planning Code* amendments was approved by the Planning Commission on August 4, 2016. If the proposed *Planning Code* amendments are legislated by the Board of Supervisors, development projects within the Plan Area would be subject to the requirements of the TDM Program.

Traffic Impacts

Impact TR-2: Development under the Plan, including the proposed open space improvements and the street network changes, would not result in traffic hazards. (Less than Significant)

A traffic hazard is generally defined as a structure, object, or vegetation that obstructs, hinders, or impairs reasonable and safe view by drivers of other vehicles, pedestrians, or bicyclists traveling on the same street, and restricts the ability of the driver to stop the motor vehicle without danger of an ensuing collision. Development of subsequent residential and non-residential projects under the Plan would not introduce unusual design features that would result in traffic hazards. Plans for development projects are required to undergo various levels of City review to ensure that proposed pedestrian access, vehicular access and streetscape improvements follow appropriate design guidelines, and are constructed consistent with City standards. Similarly, the proposed street network changes under the Plan would be designed to meet City, National Association of City Transportation Officials (NACTO), the California Manual of Uniform Traffic Control Devices, and Federal Highway Association (FHWA) recommendations and standards, as appropriate. These engineering recommendations and standards have been developed over the years to ensure that streets are designed to enhance street safety and to provide safe facilities for walking, bicycling, transit operations, and the movement of motor vehicles.

New development subsequent to the Plan would bring more people into the area, which would result in an increase in the potential for conflicts between vehicles, bicyclists, and pedestrians. Conflict points are located where pedestrians, bicyclists, and/or drivers cross, merge, or diverge. Examples of conflict points include vehicles making a turn over a crosswalk, and vehicles merging across a bicycle or transit-only lane at an intersection approach. The potential for conflicts increases with an increase in the number of roadway users, however, this increased potential for conflicts by itself does not represent a traffic hazard, as defined above, since the guidelines and standards take such increases into account. Furthermore, the proposed implementation of the street network changes (e.g., cycle tracks, sidewalk widening, transit-only lanes) under the Plan would reduce the potential for vehicle-pedestrian and vehicle-bicycle conflicts by designing the streets for all modes, enhancing sight lines and visibility, and reducing motor vehicle travel speeds. For example, removing existing mixed-flow travel lanes would lead to slower vehicle speeds allowing drivers more time to react to unexpected changes in roadway, striping of continental type crosswalks would make pedestrians more visible to drivers and bicyclists, installation of cycle tracks would provide physically separated facilities for vehicles and bicyclists, and the implementation of transit-only lanes would reduce the need for buses to pull out and into the mixed-flow travel lane when accessing bus stops. For these reasons, the impact related to traffic hazards of implementation of the Plan would be ***less than significant***.

Mitigation: None required.

As discussed in the "Transportation Sustainability Program" section above, automobile delay is no longer used as a significance criterion in San Francisco. The following discussion of intersection and freeway ramp operations presents the general effects of the Plan on intersection and freeway ramp operations for informational purposes only.

Intersection and Freeway Ramp Operations (Informational)

As noted above, this section provides information on intersection and freeway ramp operations for informational purposes. An intersection vehicle delay analysis was conducted at 36 intersections within the Central SoMa transportation study area for a.m. peak hour conditions, and at 80 intersections for p.m. peak hour conditions. In addition, freeway ramp operation analyses were conducted for six freeway on-ramps and five freeway off-ramps, for a total of 11 freeway ramps on I-80 and I-280 within the Central SoMa transportation study area. Development associated with the Plan would generate 3,240 vehicle trips during the a.m. peak hour, and 4,040 vehicle trips during the p.m. peak hour. The vehicle trips were assigned to the intersections, based on the projected vehicle assignment obtained from the SF-CHAMP model. This analysis was used for calculation of transit delay presented in Impact TR-3. As noted in the Regulatory Framework section, above, vehicle delay is no longer used as a significance criterion in San Francisco, and is discussed in this section for informational purposes only.

Howard/Folsom One-Way Option. The average delay per vehicle at the study intersections would increase with the addition of vehicle trips associated with development under the Plan plus implementation of the proposed street network changes that reflect the Howard/Folsom One-Way Option (one to two mixed-flow travel lanes per direction would be removed from Fourth, Folsom, Harrison, and Bryant Streets to accommodate new transit-only lanes and from Howard, Folsom, Brannan, Third and Fourth Streets to accommodate cycle tracks). Travel lane reductions would result in a redistribution of traffic, and more vehicles would use Mission, Harrison, Fifth, and Sixth Streets, thereby increasing congestion on these streets in the transportation study area. During the a.m. peak hour, the primary streets that would experience increased congestion include Mission Street between New Montgomery and Fourth Streets, and most of Folsom Street west of Third Street. During the p.m. peak hour, the primary streets that would experience increased congestion include most of Howard Street west of Third Street, Folsom Street west of First Street, most of Harrison Street between First and Sixth Streets, and portions of Bryant and Brannan Streets generally between Second and Sixth Streets.

The number of study intersections operating with an average delay of more than 55 seconds per vehicle during the a.m. peak hour would increase from 3 of 36 intersections analyzed under existing conditions to 21 intersections under the Howard/Folsom One-Way Option, and during the p.m. peak hour from 19 of 80 intersections analyzed under existing conditions to 39 intersections under the Howard/Folsom One-Way Option.

Howard/Folsom Two-Way Option. The average delay per vehicle would increase at the study intersections with the addition of vehicle trips associated with development under the Plan plus implementation of the street network changes that reflect the Howard/Folsom Two-Way Option (a reduction in mixed-flow travel lanes on Fourth, Folsom, Harrison, and Bryant Streets to accommodate new transit-only lanes, and on Howard, Folsom, Brannan, Third and Fourth Streets to accommodate the new cycle tracks). Under the Howard/Folsom Two-Way Option, the travel lane reductions and change from one-way to two-way operations on Howard and Folsom Streets would result in a redistribution of traffic throughout the transportation study area. As under the Howard/Folsom One-Way Option, more vehicles would use Mission, Harrison, Fifth, and Sixth Streets, thereby increasing congestion on these streets in the transportation study area.

During the a.m. peak hour, the primary streets that would experience increased congestion include Folsom Street east of Sixth Street, as well as the Third Street and Sixth Street corridors. During the p.m. peak hour, the primary streets that would experience increased congestion include Mission Street between New Montgomery and Fourth Streets, and most of Howard Street west of Third Street. The Folsom Street corridor would also be affected although to a lesser degree than under the Howard/Folsom One-Way Option. Much of Harrison Street and portions of Bryant and Brannan Streets (generally between Second and Sixth Streets) would also experience increased congestion.

The number of intersections operating with an average delay of more than 55 seconds per vehicle during the a.m. peak hour would increase from three of 36 intersections analyzed under existing conditions to 17 under the Howard/Folsom Two-Way Option, and during the p.m. peak hour from 19 of 80 intersections analyzed under existing conditions to 37 under the Howard/Folsom Two-Way Option.

Freeway Ramp Operations. Eleven freeway ramps were analyzed for a.m. and p.m. peak hour conditions. Under existing conditions, eight of the 11 freeway ramps currently operate with a vehicle density greater than 35 passenger cars per mile per lane, or with service volumes reflecting breakdown conditions in the ramp influence area.[213] With the addition of Plan-related traffic with the proposed street network changes, ten of the 11 ramps would operate with a vehicle density greater than 35 passenger cars per mile per lane, or with service volumes reflecting breakdown conditions in the ramp influence areas during the a.m. and/or p.m. peak hours.

Transit Impacts

Impact TR-3: Development under the Plan, including the proposed open space improvements and street network changes, would result in a substantial increase in transit demand that would not be accommodated by local transit capacity, and would cause a substantial increase in delays resulting in adverse impacts on local and regional transit routes. (Significant and Unavoidable with Mitigation)

Capacity Utilization Analysis

Development associated with the Plan would generate 4,160 transit trips during the a.m. peak hour, and 4,430 transit trips during the p.m. peak hour. The new transit trips would utilize the nearby Muni and regional transit routes, and may include transfers to other Muni bus routes and light rail lines, or other regional transit providers. The following analyzes impacts to Muni and regional transit lines.

Muni Downtown Screenlines

The analysis of Muni screenlines assesses the effect of project-generated transit-trips on transit conditions in the inbound direction (i.e., towards downtown) during the a.m. peak hour, and in the outbound direction (i.e.,

[213] A ramp to freeway junction is generally designed to allow merging and diverging movements to take place at high speeds with minimal disruption of the adjacent traffic stream on the freeway. Breakdown conditions reflect turbulence in the traffic stream, including more lane changes, changes in speeds, and lower average speeds within the ramp influence area.

away from downtown) during the p.m. peak hour. **Table IV.D-8, Muni Downtown Screenlines – Weekday AM and PM Peak Hours - Existing and Existing plus Plan Conditions**, presents the Muni screenline analysis for the existing plus Plan conditions for the a.m. and p.m. peak hours. Overall, with the addition of the project-generated passengers to the four downtown screenlines, the capacity utilization would increase at all screenlines and on most corridors, and the capacity utilization for the overall Muni downtown screenlines would increase from 78.7 to 82.6 percent during the a.m. peak hour, and from 72.1 to 75.1 percent during the p.m. peak hour. During the a.m. peak hour, with the addition of the Plan-generated transit trips, the Plan would increase the capacity utilization on the Other Lines corridor (i.e., the J Church light rail line and the 10 Townsend, 12 Folsom-Pacific, 19 Polk, and 27 Bryant bus routes) of the Southeast screenline from 83.5 percent under existing conditions to 90.5 percent under existing plus Plan conditions, which would exceed Muni's capacity utilization standard of 85 percent. This would be a ***significant*** impact on Muni's capacity on the Other Lines corridor of the Southeast screenline during the a.m. peak hour.

Mitigation Measure M-TR-3a, Transit Enhancements (described below), identities measures that would increase transit frequency and therefore capacity, would reduce the effect of increased ridership on the Other Lines corridor of the Southeast screenline of the Muni downtown screenlines. However, because it is not known whether or how much additional funding would be generated for transit service as part of this mitigation measure, and whether SFMTA could provide additional service on the impacted routes to fully mitigate project impacts, the Plan's transit impact on capacity utilization at the downtown screenlines would still be ***significant and unavoidable with mitigation***.

During the a.m. peak hour, the Southwest screenline and the Subway Lines corridor of the Southwest screenline currently operate at more than the 85 percent capacity utilization standard, and the Plan would add riders to the corridor and screenline. However, the Plan's contribution to the total ridership would be less than five percent, and therefore would not be considered a significant impact on the Southwest screenline and the Subway Lines corridor. Similarly, during the p.m. peak hour, the Fulton/Hayes corridor of the Northwest screenline and the Third Street corridor of the Southeast screenline currently operate at more than the 85 percent capacity utilization standard, however, the Plan's contribution would not be considered a significant project impact on these corridors because the Plan's contribution to the ridership would be less than five percent.

Muni Central SoMa Cordons

Table IV.D-9, Central SoMa Cordons—Weekday AM and PM Peak Hours—Existing and Existing plus Plan Conditions, presents the Central SoMa Cordon analysis for the existing plus Plan conditions for the a.m. and p.m. peak hours. Similar to the Muni downtown screenlines, the addition of the project-generated riders to the Central SoMa cordons and corridors would increase the capacity utilization during the a.m. and p.m. peak hours. The greatest increase in capacity utilization would be on the Middle corridor (8 Bayshore, 8AX/8BX Bayshore Expresses, 9 San Bruno, 9R San Bruno Rapid, 12 Folsom-Pacific, and the 27 Bryant) of the Southeast cordon during the p.m. peak hour. However, the Middle corridor of the Southeast cordon would continue to operate below the Muni's capacity utilization standard of 85 percent with implementation of the Plan.

TABLE IV.D-8 MUNI DOWNTOWN SCREENLINES – WEEKDAY AM AND PM PEAK HOURS - EXISTING AND EXISTING PLUS PLAN CONDITIONS

Muni Screenline and Corridor	Existing			Existing plus Plan	
	Ridership	Capacity	Capacity Utilization	Ridership	Capacity Utilization
AM PEAK HOUR (INBOUND)					
Northeast					
Kearny/Stockton	2,211	3,050	72.5%	2,429	79.6%
Other lines	550	1,141	48.2%	568	49.7%
Northeast Screenline Total	*2,761*	*4,191*	*65.9%*	*2,996*	*71.5%*
Northwest					
Geary	1,821	2,490	73.2%	1,937	77.8%
California	1,610	2,010	80.1%	1,635	81.3%
Sutter/Clement	480	630	76.2%	489	77.6%
Fulton/Hayes	1,277	1,680	76.0%	1,316	78.3%
Balboa	758	1,019	74.4%	758	74.4%
Northwest Screenline Total	*5,946*	*7,828*	*76.0%*	*6,135*	*78.4%*
Southeast					
Third Street	350	793	44.1%	366	46.2%
Mission	1,643	2,509	65.5%	1,731	69.0%
San Bruno/Bayshore	1,689	2,134	79.1%	1,755	82.2%
Other lines	1,466	1,756	83.5%	**1,590**	**90.5%**
Southeast Screenline Total	*5,148*	*7,193*	*71.6%*	*5,443*	*75.7%*
Southwest					
Subway lines	6,332	6,205	**102.0%**	6,625	**106.8%**
Haight/Noriega	1,121	1,554	72.1%	1,205	77.6%
Other lines	465	700	66.4%	465	66.4%
Southwest Screenline Total	*7,917*	*8,459*	***93.6%***	*8,295*	***98.1%***
Muni Screenlines Total	*21,772*	*27,671*	*78.7%*	*22,869*	*82.6%*
PM PEAK HOUR (OUTBOUND)					
Northeast					
Kearny/Stockton	2,245	3,327	67.5%	2,245	67.5%
Other lines	683	1,078	63.4%	704	65.3%
Northeast Screenline Total	*2,928*	*4,405*	*66.5%*	*2,949*	*66.9%*
Northwest					
Geary	1,964	2,623	74.9%	2,081	79.3%
California	1,322	1,752	75.4%	1,377	78.6%
Sutter/Clement	425	630	67.5%	439	69.6%
Fulton/Hayes	1,184	1,323	**89.5%**	1,184	**89.5%**
Balboa	625	974	64.2%	625	64.2%
Northwest Screenline Total	*5,519*	*7,302*	*75.6%*	*5,705*	*78.1%*
Southeast					
Third Street	782	793	**98.6%**	790	**99.5%**
Mission	1,407	2,601	54.1%	1,474	56.7%
San Bruno/Bayshore	1,536	2,134	72.0%	1,697	79.5%
Other lines	1,084	1,675	64.7%	1,176	70.2%
Southeast Screenline Total	*4,809*	*7,203*	*66.8%*	*5,136*	*71.3%*
Southwest					
Subway lines	4,904	6,164	79.6%	5,087	82.5%
Haight/Noriega	977	1,554	62.9%	1,080	69.5%
Other lines	555	700	79.3%	577	79.5%
Southwest Screenline Total	*6,436*	*8,418*	*76.5%*	*6,724*	*79.9%*
Muni Screenlines Total	*19,693*	*21,328*	*72.1%*	*20,514*	*75.1%*

SOURCE: SF Planning Department Memorandum, *Transit Data for Transportation Impact Studies*, May 2015, Fehr & Peers, 2016.

NOTES:

Bold indicates capacity utilization of 85 percent or greater.

Shaded indicates significant project impact.

TABLE IV.D-9 CENTRAL SOMA CORDONS—WEEKDAY AM AND PM PEAK HOURS—EXISTING AND EXISTING PLUS PLAN CONDITIONS

Central SoMa Cordon and Corridor	Existing			Existing plus Plan	
	Ridership	Capacity	Capacity Utilization	Ridership	Capacity Utilization
AM PEAK HOUR (INBOUND)					
Northeast Cordon					
Eastern Corridor	550	1,141	48.2%	567	49.7%
Middle Corridor	2,211	3,050	72.5%	2,428	79.6%
Western Corridor	416	567	73.4%	442	78.0%
Northeast Cordon Total	*3,177*	*4,758*	*66.8%*	*3,437*	*72.2%*
Northwest Cordon					
Northern Corridor	480	630	76.2%	489	77.6%
Middle Corridor	1,342	1,831	73.3%	1,451	79.2%
Southern Corridor	947	1,365	69.4%	983	72.0%
Northwest Cordon Total	*2,768*	*3,826*	*72.4%*	*2,922*	*76.4%*
Southeast Cordon					
Eastern Corridor	782	1,315	59.5%	820	62.4%
Middle Corridor	1,969	2,575	76.5%	2,076	80.6%
Western Corridor	2,022	2,598	77.8%	2,161	83.2%
Southeast Cordon Total	*4,773*	*6,488*	*73.6%*	*5,057*	*77.9%*
Southwest Cordon					
Northern Corridor	3,010	2,838	**106.0%**	3,153	**111.1%**
Middle Corridor	1,924	2,163	**89.0%**	2,031	**93.5%**
Southern Corridor	2,267	2,380	**95.2%**	2,362	**99.2%**
Southwest Cordon Total	*7,200*	*7,381*	***97.6%***	*7,545*	***102.2%***
Central SoMa Cordons Total	*17,918*	*22,453*	*79.8%*	*18,961*	*84.5%*
PM PEAK HOUR (OUTBOUND)					
Northeast Cordon					
Eastern Corridor	683	1,078	63.4%	704	65.3%
Middle Corridor	2,245	3,327	67.5%	2,245	67.5%
Western Corridor	436	630	69.2%	489	77.6%
Northeast Cordon Total	*3,364*	*5,035*	*66.8%*	*3,438*	*68.3%*
Northwest Cordon					
Northern Corridor	425	630	67.5%	439	69.7%
Middle Corridor	1,567	1,965	79.7%	1,631	83.0%
Southern Corridor	964	1,121	**86.0%**	964	**86.0%**
Northwest Cordon Total	*2,956*	*3,716*	*79.6%*	*3,034*	*81.7%*
Southeast Cordon					
Eastern Corridor	1,103	1,234	**89.4%**	1,103	**89.4%**
Middle Corridor	1,760	2,575	68.3%	1,978	76.8%
Western Corridor	1,609	2,689	59.0%	1,766	65.7%
Southeast Cordon Total	*4,472*	*6,498*	*68.8%*	*4,847*	*74.6%*
Southwest Cordon					
Northern Corridor	2,426	2,995	81.0%	**2,593**	**86.6%**
Middle Corridor	1,396	1,965	71.1%	1,429	72.7%
Southern Corridor	1,813	2,380	76.2%	1,885	79.2%
Southwest Cordon Total	*5,635*	*7,340*	*76.8%*	*5,907*	*80.5%*
Central SoMa Cordons Total	*16,428*	*22,589*	*72.7%*	*17,227*	*76.3%*

SOURCE: SF Planning Department Memorandum, *Transit Data for Transportation Impact Studies*, May 2015, Fehr & Peers, 2016.

NOTES:

Bold indicates capacity utilization of 85 percent or greater.

Shaded indicates significant project impact.

During the a.m. peak hour, the Southwest cordon and the Middle and Southern corridors of the Southwest cordon currently operate at more than the 85 percent capacity utilization standard, and the Plan would add riders to the corridors and cordon. However, the Plan's contribution to the ridership would be less than five percent of total ridership, and therefore would this impact would be considered ***less than significant***.

During the p.m. peak hour, with the addition of the project-generated transit trips, the Plan would increase the capacity utilization on the Northern corridor of the Southwest cordon (i.e., the N Judah, 7X Noriega Express, 7/7R Haight-Noriega Rapid routes) from 81.0 percent under existing conditions to 86.6 percent under existing plus Plan conditions, which would exceed Muni's capacity utilization standard of 85 percent. This would be a ***significant*** impact on Muni capacity utilization on the Northern corridor of the Southwest cordon. In addition, during the a.m. peak hour, development under the Plan would contribute considerably (i.e., more than five percent of total ridership) to the Northern corridor of the Southwest cordon. Therefore, implementation of the Plan would result in a ***significant*** impact on Muni capacity utilization on the Northern corridor of the Southwest cordon during the a.m. and p.m. peak hours.

In addition, during the p.m. peak hour, the Southern corridor of the Northwest cordon and the Eastern corridor of the Southeast cordon currently operate at more than the 85 percent capacity utilization standard, however, the Plan's contribution would be ***less than significant*** on these corridors because the Plan's contribution to the capacity would be less than five percent.

Implementation of **Mitigation Measure M-TR-3a, Transit Enhancements** (described below), identifies measures that would increase transit frequency and therefore capacity, would reduce the effect of increased ridership on the Northern corridor of the Southwest cordon of the Central SoMa cordons. However, as noted above, because it is not known whether or how much additional funding would be generated for transit service as part of this mitigation measure, and whether SFMTA would provide additional service on the impacted routes to fully mitigate project impacts, the Plan's transit impact on Muni capacity utilization on the Central SoMa cordons would still be ***significant and unavoidable with mitigation***.

Regional Screenlines

Table IV.D-10, Regional Transit Screenlines—Weekday AM and PM Peak Hours—Existing and Existing plus Plan Conditions, presents the regional screenline analysis for the existing plus Plan conditions for the a.m. and p.m. peak hours. Similar to the Muni downtown screenlines, the analysis of the regional screenlines assesses the effect of project-generated transit-trips on transit conditions in the inbound direction (i.e., towards downtown) during the a.m. peak hour, and in the outbound direction (i.e., away from downtown) during the p.m. peak hour.

With Plan implementation, during the weekday a.m. peak hour there would be about 1,350 transit trips arriving to Central SoMa from the East Bay, 280 transit trips from the North Bay, and 780 transit trips from the South Bay, while during the weekday p.m. peak hour there would be 1,130 transit trips destined to the East Bay, 90 transit trips to the North Bay, and 690 transit trips to the South Bay. During the a.m. and p.m. peak hours, the North Bay and South Bay screenlines would operate under 100 percent capacity utilization. During the a.m. peak hour, the East Bay screenline would continue to operate over the 100 percent capacity utilization standard (to a larger extent than existing conditions), and during the p.m. peak hour, the additional transit trips destined to the East

TABLE IV.D-10 REGIONAL TRANSIT SCREENLINES—WEEKDAY AM AND PM PEAK HOURS—EXISTING AND EXISTING PLUS PLAN CONDITIONS

Regional Screenline	Existing			Existing plus Plan	
	Ridership	Capacity	Capacity Utilization	Ridership	Capacity Utilization
AM PEAK HOUR (INBOUND)					
East Bay					
BART	25,399	23,256	**109.2%**	26,521	**114.0%**
AC Transit	1,568	2,829	55.4%	1,761	62.2%
Ferry	810	1,170	69.2%	844	72.1%
East Bay Total	*27,777*	*27,255*	***101.9%***	*29,126*	***106.9%***
North Bay					
GGT Buses	1,330	2,543	52.3%	1,607	63.2%
Ferry	1,082	1,959	55.2%	1,088	55.5%
North Bay Total	*2,412*	*4,502*	*53.6%*	*2,695*	*59.9%*
South Bay					
BART	14,150	19,367	73.1%	14,642	75.6%
Caltrain	2,171	3,100	70.0%	2,444	78.8%
SamTrans	255	520	49.0%	265	51.0%
South Bay Total	*16,576*	*22,987*	*72.1%*	*17,351*	*75.5%*
Total All Screenlines	*46,765*	*54,744*	*85.4%*	*49,172*	*89.8%*
PM PEAK HOUR (OUTBOUND)					
East Bay					
BART	24,488	22,784	**107.5%**	25,405	**111.5%**
AC Transit	2,256	3,926	57.5%	2,368	60.3%
Ferry	805	1,615	49.8%	908	56.2%
East Bay Total	*27,549*	*28,325*	*97.3%*	*28,681*	***101.3%***
North Bay					
GGT Buses	1,384	2,817	49.1%	1,533	54.4%
Ferry	968	1,959	49.4%	969	49.5%
North Bay Total	*2,412*	*4,776*	*49.2%*	*2,502*	*52.4%*
South Bay					
BART	13,500	18,900	71.4%	13,923	73.7%
Caltrain	2,377	3,100	76.7%	2,616	84.4%
SamTrans	141	320	44.1%	171	53.4%
South Bay Total	*16,018*	*22,320*	*71.8%*	*16,710*	*74.9%*
Regional Screenlines Total	*45,919*	*55,421*	*82.9%*	*47,893*	*86.4%*

SOURCE: SF Planning Department Memoranda, *Transit Data for Transportation Impact Studies*, May 2015 and *Updated BART Regional Screenlines*, October 2016, Fehr & Peers, 2016.

NOTE:

Bold indicates capacity utilization of 100 percent or greater.

Bay would cause the overall East Bay screenline to exceed the 100 percent capacity utilization standard (i.e., increase capacity utilization during the p.m. peak hour from 97.3 to 101.3 percent). This would be considered a ***significant*** impact. Development under the Plan would add 1,100 a.m. peak hour and 900 p.m. peak hour transit trips that would use BART from and to the East Bay, respectively, would be considered a substantial increase of BART ridership. Implementation of **Mitigation Measure M-TR-3a, Transit Enhancements** (described below), could potentially result in additional funding that could be dedicated to regional transit, including BART; however, it would be speculative at this time to presume that sufficient funding could be available to offset effects of the Plan. Therefore, because it is not known whether and how much additional funding would be generated for regional transit as part of this mitigation measure, the Plan's regional transit impact on BART would still be considered ***significant and unavoidable with mitigation***.

Transit Delay Analysis

Table IV.D-11, Muni Transit Delay Analysis—Weekday AM and PM Peak Hours—Existing plus Plan Conditions, presents the transit travel delay analysis for a.m. and p.m. peak hour conditions for the three analysis scenarios: existing plus development under the Plan only (i.e., the Land Use Plan Only Alternative), existing plus development under the Plan and street network changes under the Howard/Folsom One-Way Option, and existing plus development under the Plan and street network changes under the Howard/Folsom Two-Way Option.

Implementation of development under the Plan would result in an increase in Muni route travel times, and would result in substantial delays to a number of Muni routes serving the area. Increases in Muni route travel times would be caused by a combination of factors including additional vehicular traffic and transit ridership generated by development under the Plan.

The Plan's proposed street network changes include the following to prioritize transit:

- A network of dedicated transit-only lanes in order to enhance transit travel times and reliability;
- Upgraded existing and new planned dedicated transit-only lanes with self-enforcing mechanisms such as curbs, channelizers, and colored or textured pavements would discourage or prevent use by unauthorized private vehicles;
- New dedicated transit-only lanes are proposed on:
    - Fourth Street (between Market and Harrison Streets)
    - Folsom Street (between Second and Fourth Streets under the Howard/Folsom Two-Way Option)
    - Harrison Street (between Sixth and 11th Streets for the Howard/Folsom One-Way Option and between Sixth and Seventh Streets under the Howard/Folsom Two-Way Option), and
    - Bryant Street (between Third and Seventh Streets); and
- Peak period transit-only lanes would be provided on segments of Folsom, Harrison, and Bryant Streets.

The Plan proposes similar transit facilities under both the Howard/Folsom One-Way Option and Howard/Folsom Two-Way Option. One difference between the two options is that the Howard/Folsom One-Way Option would provide a protected transit-only lane on Folsom Street for the 12 Folsom-Pacific, while the Howard/Folsom Two-Way Option would not. Therefore, the 12 Folsom-Pacific could experience more travel delay associated with traveling in mixed-flow travel lanes under the Howard/Folsom Two-Way Option, though such delay would be ***less than significant*** due to the long, 20-minute scheduled headways on this route.

TABLE IV.D-11 MUNI TRANSIT DELAY ANALYSIS—WEEKDAY AM AND PM PEAK HOURS—EXISTING PLUS PLAN CONDITIONS

Route – direction	Existing Headway (min)	Existing plus Land Use Plan Only Alternative (see Section VI.F, Alternatives)		Existing plus Development under the Plan and Street Network Changes: Howard/Folsom One-Way Option		Existing plus Development under the Plan and Street Network Changes: Howard/Folsom Two-Way Option	
		Travel Time (TT) Increase (min: sec)	TT increase as % of Headway	Travel Time (TT) Increase (min: sec)	TT increase as % of Headway	Travel Time (TT) Increase (min: sec)	TT increase as % of Headway
AM Peak Hour							
8AX Bayshore Express – inbound	7.5	5:40	76%	1:37	22%	1:32	20%
8BX Bayshore Express – inbound	8	7:07	89%	3:13	40%	3:07	39%
27 Bryant – inbound	15	2:13	15%	-0:38	-4%	0:02	0%
30 Stockton & 45 Union-Stockton – outbound	7	6:20	90%	3:20	48%	3:21	48%
PM Peak Hour							
8 Bayshore – inbound	7.5	21:24	285%	6:55	92%	6:58	93%
8AX Bayshore Express – outbound	7.5	-0:42	-9%	-4:44	-63%	-5:19	-71%
8BX Bayshore Express – outbound	7.5	3:27	-46%	0:22	-5%	-0:57	-13%
10 Townsend – inbound	20	4:05	20%	7:53	39%	7:48	39%
10 Townsend – outbound	20	1:32	8%	8:44	44%	12:24	63%
12 Folsom-Pacific – inbound	20	4:32	23%	-0:31	-3%	5:27	27%
12 Folsom-Pacific – outbound	20	5:45	29%	9:11	46%	5:48	29%
14 Mission – inbound	7.5	0:36	8%	2:50	38%	2:57	39%
14 Mission – outbound	7.5	0:59	13%	4:58	66%	4:51	65%
14R Mission Rapid – inbound	9	0:43	8%	3:00	33%	3:07	35%
14R Mission Rapid – outbound	9	1:22	15%	5:28	61%	5:20	59%
27 Bryant – inbound	15	3:27	23%	-1:11	-8%	-1:28	-10%
27 Bryant – outbound	15	11:01	73%	8:45	58%	10:22	69%
30 Stockton & 45 Union-Stockton – inbound	4	9:38	241%	1:42	43%	-2:08	-54%
30 Stockton & 45 Union-Stockton – outbound	4	1:44	43%	-0:28	-12%	-1:15	-31%
47 Van Ness – inbound	10	15:33	156%	6:41	67%	12:16	123%
47 Van Ness – outbound	10	2:16	23%	-4:04	-41%	-4:49	-48%

SOURCE: SFMTA, Fehr & Peers, 2016. Research, studies, and analysis for the Central SoMa Plan.

NOTE:

Shaded indicates significant project impact: travel time increases more than 50 percent of the existing transit route headway.

There are two different suboptions for Fourth Street between Market and Folsom Streets. In this segment, the Fourth Street Protected Suboption would include a physically-separated transit-only lane on the west side of the street where right-turning vehicles would not be able to merge across the transit-only lane, but instead would turn right from the adjacent mixed-flow travel lane, while the Fourth Street Right-turn Pocket Suboption would provide a transit-only lane that would not be physically separated and right-turn pockets would be provided for vehicles. While both suboptions would include features that would improve transit operations, the transit delay analysis assumed the Fourth Street Protected Suboption for both the Howard/Folsom One-Way Option and the Howard/Folsom Two-Way Option because this suboption includes more aggressive street network changes on Fourth Street that affect traffic operations at intersections (and thus transit delay). Under the Fourth Street Protected Suboption, southbound transit would have an exclusive signal phase (but at the same time as pedestrians crossing Mission, Howard and Folsom Streets) and transit delay associated with vehicle congestion at the intersection would be limited. Under the Fourth Street Right-turn Pocket Suboption, southbound vehicles turning right would merge across the transit-only lane, which would increase conflicts between transit and other vehicles, and may increase delay to buses in the transit-only lane if right-turning vehicles encroach on the transit-only lane (i.e., at intersection approaches with a substantial number of right-turning vehicles, for example at Howard Street). As discussed in Impact TR-2, the increase in conflicts between transit and other vehicles would not represent a traffic hazard. The Fourth Street Right-turn Pocket Suboption would provide some of the benefits to transit delay reduction included under the Fourth Street Protected Suboption compared to conditions without the Plan.

In addition, the Howard/Folsom One-Way Option includes three suboptions for Folsom Street for the segment of Folsom Street between Essex and Fifth Streets. The Original Suboption would provide a protected eastbound transit-only lane on the section of Folsom Street between Second and Essex Street, which would reduce transit delay associated with vehicles destined to the Essex Street on-ramp to the Bay Bridge. At Essex Street, the provision of a protected transit-only lane would require a separate signal phase to separate the conflict between eastbound through buses and right-turning vehicles. In the Protected Suboption, the Folsom Street transit-only lane west of Fifth Street would transition to the north side of the street alongside the two-way cycle track in order to maneuver around recurring Bay Bridge queues, which would reduce delays for transit in this segment. East of Second Street, eastbound transit would operate in a mixed-flow travel lane. While both suboptions would include features that would improve transit operations on Folsom Street, the transit delay analysis assumed the Original Suboption for Folsom Street for the Howard/Folsom One-Way Option because this suboption includes the more aggressive street network changes that affect traffic operations at intersections (and thus transit delay).

As indicated in Table IV.D-11, for conditions with development under the Plan with the Howard/Folsom One-Way Option, transit travel times would increase to more than half of the existing route headway on the 8 Bayshore, 14 Mission, 14R Mission Rapid, 27 Bryant, and 47 Van Ness. Implementation of the protected transit-only lanes on Third Street as part of the Plan's proposed street network changes would reduce the effect on increased vehicle congestion on Third Street associated with new development and reduced mixed-flow travel lane capacity. Similarly, implementation of transit-only lanes on Harrison and Bryant Streets would reduce the effect of increased congestion on the 27 Bryant route. Overall, with development under the Plan with the Howard/Folsom One-Way Option, the Plan would result in a ***significant*** impact on the 8 Bayshore, 14 Mission,

14R Mission Rapid, 27 Bryant, and 47 Van Ness routes, due to increased vehicle congestion and boarding delays associated with the additional Plan-generated transit riders.

With implementation of the Howard/Folsom Two-Way Option, travel time impacts would be similar to those identified for the Howard/Folsom One-Way Option. However, implementation of the Howard/Folsom Two-Way Option would also result in ***significant impact*** on the 10 Townsend route due to additional vehicles using congested approaches along Second Street to reach the Bay Bridge under this option. The new transit-only lanes associated with the Plan would reduce or eliminate the transit reentry delay component of transit delay, however, this decrease would be offset by the additional delay associated with boarding times for additional passengers.

Under existing conditions plus development under the Plan with either the Howard/Folsom One-Way Option or Howard/Folsom Two-Way Option, **Mitigation Measures M-TR-3a, Transit Enhancements**, **M-TR-2b, Boarding Improvements**, **M-TR-3d, Signalization and Intersection Restriping at Townsend/Fifth Streets** (described below), would increase frequencies of transit routes, reduce delays associated with passengers getting on and off buses, and reduce the effect of increased vehicle congestion on buses traveling on Third Street and through the intersection of Townsend/Fifth Street. With implementation of these mitigation measures, the transit travel delay impacts on the 8 Bayshore, the 14 Mission, the 14R Mission Rapid, the 27 Bryant, and the 47 Van Ness routes would be reduced to less than significant. In addition, implementation of **Mitigation Measure M-TR-3e, Implement Tow-away Transit-only Lanes on Fifth Street** (described below), would provide a transit-only lane on Fifth Street and would mitigate transit delay impacts on the 47 Van Ness route. However, because it is not known whether or how much additional funding would be generated for transit improvements as part of these mitigation measures, and whether SFMTA could provide additional service, boarding improvements, or a transit-only lane on Fifth Street to fully mitigate project impacts, transit impacts with implementation of the street network changes would still be considered ***significant and unavoidable with mitigation***.

Regional Transit. Both SamTrans and Golden Gate Transit buses run on city streets within the Plan Area, and would continue to do so in the future. The Golden Gate Transit 10, 70, 80, 101, and 101X routes run on Mission Street, while the Golden Gate Transit 92, 93, and 54 routes run on Howard, Folsom, and Harrison Streets. SamTrans 292, 397, and KX routes run on Mission Street. Increased congestion at intersections within the Plan Area due to development under the Plan with the street network changes would be expected to increase travel times for Golden Gate Transit and SamTrans buses. Similar to the transit delay impacts identified above for Muni routes on Mission Street (i.e., the 14 Mission, 14R Mission Rapid), and Harrison Street (i.e., the 27 Bryant, 47 Van Ness), the resulting delays could require the deployment of additional buses on some Golden Gate Transit and SamTrans routes in order to maintain headways between buses, and this would be considered a ***significant*** impact on Golden Gate Transit and SamTrans operations.

Implementation of **Mitigation Measure M-TR-3a, Transit Enhancements**, could potentially result in additional funding that could be dedicated to regional transit including Golden Gate Transit and SamTrans; however, it would be speculative at this time to presume that sufficient funding could be available to offset effects of the Plan. Therefore, because it is not known whether and how much additional funding would be generated for regional transit as part of this mitigation measure, the Plan's transit impact on Golden Gate Transit and SamTrans operations would still be considered ***significant and unavoidable with mitigation***.

Signalized Midblock Pedestrian Crossings

Installation of up to 23 new signalized crossings would not substantially affect Muni or Golden Gate Transit operations. The signalized midblock crossings are not expected to introduce new delay into the Central SoMa roadway network system, rather, any changes in delay would be on account of delay being 'shifted' both temporally and geographically in that it may occur upstream or downstream of the signalized intersection (the next signalized intersection that a driver would encounter). New signalized pedestrian crossings would be coordinated with upstream and/or downstream intersections to minimize any new delay and/or corresponding queuing as a result of the new traffic signal, and therefore, would not substantially affect the transit travel times. In the event that a Muni or Golden Gate Transit bus stops before reaching the new signalized pedestrian crossing, these buses may incur additional delays. However, additional delay would be similar to delay incurred when stopped at nearby intersections, and the addition of one or more midblock crossings along a route would not substantially affect overall transit travel times for the affected routes. The midblock crossings would not affect any existing bus stops, which are typically located at the intersections, and not midblock. Therefore, the impact of the 23 new signalized midblock pedestrian crossings on transit operations would be ***less than significant***.

Mitigation Measures

Mitigation Measure M-TR-3a: Transit Enhancements. The following are City actions that would reduce local and regional transit impacts associated with implementation of the Central SoMa Plan and proposed street network changes.

Enhanced Transit Funding. To accommodate project transit demand, the City shall ensure that sufficient operating and capital funding is secured, including through the following measures:

- Establish fee-based sources of revenue such as parking benefit districts.
- Establish a congestion-charge scheme for downtown San Francisco, with all or a portion of the revenue collected going to support improved local and regional transit service on routes that serve Downtown and the Central SoMa Plan Area.
- Seek grant funding for specific capital improvements from regional, state and federal sources.

Transit Corridor Improvement Review. During the design phase, the SFMTA shall review each street network project that contains portions of Muni transit routes where significant transit delay impacts have been identified (routes 8 Bayshore, 8AX Bayshore Express, 8BX Bayshore Express, 10 Townsend, 14 Mission, 14R Mission Rapid, 27 Bryant, 30 Stockton, 45 Union-Stockton, and 47 Van Ness). Through this review, SFMTA shall incorporate feasible street network design modifications that would meet the performance criteria of maintaining accessible transit service, enhancing transit service times, and offsetting transit delay. Such features could include, but shall not be limited to, transit-only lanes, transit signal priority, queue jumps, stop consolidation, limited or express service, corner or sidewalk bulbs, and transit boarding islands, as determined by the SFMTA, to enhance transit service times and offset transit delay. Any subsequent changes to the street network designs shall be subject to a similar review process.

Transit Accessibility. To enhance transit accessibility, the Planning Department and the SFMTA shall establish a coordinated planning process to link land use planning and development in Central SoMa

to transit and other alternative transportation mode planning. This shall be achieved through some or all of the following measures:

- Implement recommendations of the *Better Streets Plan* that are designed to make the pedestrian environment safer and more comfortable for walk trips throughout the day, especially in areas where sidewalks and other realms of the pedestrian environment are notably unattractive and intimidating for pedestrians and discourage walking as a primary means of circulation. This includes traffic calming strategies in areas with fast-moving, one-way traffic, long blocks, narrow sidewalks and tow-away lanes, as may be found in much of the Central SoMa area.
- Implement building design features that promote primary access to buildings from transit stops and pedestrian areas, and discourage the location of primary access points to buildings through parking lots and other auto-oriented entryways.
- Develop Central SoMa transportation implementation programs that manage and direct resources brought in through pricing programs and development-based fee assessments, as outlined above, to further the multimodal implementation and maintenance of these transportation improvements.

Muni Storage and Maintenance. To ensure that Muni is able to service additional transit vehicles needed to serve increased demand generated by development in Central SoMa, the SFMTA shall provide maintenance and storage facilities. In 2013, the SFMTA prepared a *Real Estate and Facilities Vision for the 21st Century* report.[214] The document provides a vision for addressing Muni's storage and maintenance needs, particularly in light of substantial growth in fleet as well as changes in the fleet composition.

Mitigation Measure M-TR-3b: Boarding Improvements. The SFMTA shall implement boarding improvements such as low floor buses and pre-payment that would reduce the boarding times to mitigate the impacts on transit travel times on routes where Plan ridership increases are greatest, such as the 8 Bayshore, 8AX/8BX Bayshore Expresses, 10 Townsend, 14 Mission, 14R Mission Rapid, 27 Bryant, 30 Stockton, 45 Union-Stockton, and 47 Van Ness routes. These boarding improvements, which would reduce delay associated with passengers boarding and alighting, shall be made in combination with **Mitigation Measures M-TR-3c, Upgrade Transit-only Lanes on Third Street**, **M-TR-3d, Signalization and Intersection Restriping at Townsend/Fifth Streets**, and **M-TR-3e, Implement Tow-away Lanes on Fifth Street**, which would serve to reduce delay associated with traffic congestion along the transit route.

Mitigation Measure M-TR-3c: Signalization and Intersection Restriping at Townsend/Fifth Streets. The SFMTA shall design and construct a new traffic signal at the intersection of Townsend/Fifth Streets, and reconfigure the Townsend Street eastbound approach to provide one dedicated left-turn lane (with an exclusive left turn phase) adjacent to a through lane. This reconfiguration would require restriping of the two existing travel lanes at the eastbound approach to this intersection.

Mitigation Measure M-TR-3d: Implement Tow-away Transit-only Lanes on Fifth Street. The SFMTA shall implement a northbound tow-away transit-only lane on Fifth Street between Townsend and Bryant Streets during the p.m. peak period to mitigate the impacts on transit travel times on the 47 Van Ness. This peak period transit-only lane can be implemented by restricting on-street parking

[214] SFMTA, *Real Estate and Facilities Vision for the 21st Century*, January 2013. Available at http://archives.sfmta.com/cms/cmta/documents/1-29-13VisionReport.pdf, accessed December 31, 2015.

(about 30 parking spaces) on the east side of Fifth Street between Townsend and Bryant Streets during the 3:00 to 7:00 p.m. peak period.

Significance after Mitigation: Implementation of the Plan would result in significant transit impacts on Muni capacity utilization on the Other Lines corridor of the Southeast screenline of the Muni downtown screenlines and on the Northern corridor of the Southwest cordon of the Central SoMa cordons. Implementation of **Mitigation Measure M-TR-3a, Transit Enhancements** (which includes enhanced transit funding, transit corridor improvements, transit accessibility improvements, Muni storage and maintenance improvements, and rider improvements), would reduce the effect of increased ridership, but because it is not known whether or how much additional funding would be generated for transit service as part of this mitigation measure, or whether SFMTA would provide additional service on the impacted routes to fully mitigate project impacts, the Plan's transit impact on Muni capacity utilization is considered ***significant and unavoidable with mitigation***.

With implementation of the Plan, the East Bay regional transit screenlines would operate above the regional capacity utilization standard of 100 percent, and the Plan would substantially contribute to increased ridership in excess of the capacity utilization standard, a ***significant impact***. Implementation of **Mitigation Measure M-TR-3a, Transit Enhancements** would reduce the effect of increased ridership, but because it is not known whether or how much additional funding would be generated for regional transit service as part of this mitigation measure, or whether additional service would be provided to fully mitigate Plan impacts, the Plan's transit impact on regional transit capacity utilization is considered ***significant and unavoidable with mitigation***.

Implementation of the Plan would substantially increase travel times and result in significant impacts on numerous Muni routes traveling in Central SoMa, including the 8 Bayshore, 10 Townsend, 14 Mission, 14R Mission Rapid, 27 Bryant, and/or 47 Van Ness. Impacts on travel times would vary depending on which street network changes are implemented. **Mitigation Measures M-TR-3a, Transit Enhancements**, **M-TR-3b, Boarding Improvements**, **M-TR-3c, Upgrade Transit-only Lanes on Third Street**, **M-TR-3d, Signalization and Intersection Restriping at Townsend/Fifth Streets**, and **M-TR-3e, Implement Tow-away Transit-only Lanes on Fifth Street**, would potentially reduce the travel time impacts or mitigate them to less-than-significant levels; but because it is not known whether or how much additional funding would be generated for transit improvements as part of these mitigation measures, or whether SFMTA would provide additional service on the impacted routes to fully mitigate project impacts, the effect would not be fully mitigated, and the impacts are considered ***significant and unavoidable*** even with these mitigation measures.

Implementation of the Plan would also result in increased congestion at intersections within the Plan Area and increase travel times for Golden Gate Transit and SamTrans buses, which could require the deployment of additional buses on some Golden Gate Transit and SamTrans routes in order to maintain headways between buses. This would be considered a significant impact on Golden Gate Transit and SamTrans operations. Implementation of **Mitigation Measure M-TR-3a, Transit Enhancements**, could potentially result in additional funding that could be dedicated to regional transit including Golden Gate Transit and SamTrans, although it would be speculative at this time to presume that sufficient funding could be available to offset effects of the Plan. Therefore, the Plan's transit impact on Golden Gate Transit and SamTrans operations would be considered ***significant and unavoidable with mitigation***.

Pedestrian Impacts

Impact TR-4: Development under the Plan, including the proposed open space improvements and street network changes, would not result in pedestrian safety hazards nor result in a substantial overcrowding on sidewalks or at corner locations, but would result in overcrowding at crosswalks. (Significant and Unavoidable with Mitigation)

Pedestrian impacts were assessed qualitatively with respect to pedestrian safety hazards, and quantitatively with respect to pedestrian LOS conditions at crosswalk, corner and sidewalk locations.

Pedestrian Safety Hazards Assessment

Development associated with the Plan would generate about 10,550 pedestrian trips (4,430 transit and 6,120 walk and other modes trips) during the p.m. peak hour. The midday peak hour analysis assumed the same growth as projected for the p.m. peak hour conditions. Existing plus Plan pedestrian volumes were estimated based on development and growth identified by the Transportation Authority's SF-CHAMP travel demand model for the TAZs in the Central SoMa transportation study area.

New development under the Plan would result in a substantial increase in pedestrians, bicyclists, and vehicle trips in Central SoMa, which could increase the potential for conflicts between modes. However, some of the development projects would include pedestrian improvements, as required under the *Better Streets Plan*, and ongoing City projects such as the Vision Zero effort focused on eliminating traffic deaths by 2024. A number of Vision Zero projects have already been implemented within the Central SoMa transportation study area and include improvements such as: new traffic signals, leading pedestrian intervals, continental crosswalks, corner sidewalk extensions, turn restrictions, and audible/accessible pedestrian signals. In addition to these street network improvements, Vision Zero includes citywide efforts including Safe Routes for Seniors, Safe Speeds Campaign (education and enforcement), and SF Smart Streets (an interactive education program for youths).

The proposed street network changes include numerous improvements to the pedestrian network including sidewalk widening to meet the standards in the *Better Streets Plan* where possible, corner sidewalk extensions, pedestrian signal timing upgrades, signalized midblock pedestrian crossings, and opening currently closed crosswalks. Implementation of these improvements would enhance pedestrian conditions in Central SoMa, facilitating pedestrian access (including for seniors and persons with disabilities), and reduce the potential for vehicle-pedestrian and bicycle-pedestrian conflicts associated with increases in pedestrians, bicyclists, and vehicles in Central SoMa generated by development under the Plan, thereby reducing the potential for collisions. For example, corner sidewalk extensions would increase pedestrian visibility to drivers, thereby allowing drivers to begin braking farther in advance of the intersection to yield the right-of-way. Pedestrians would benefit from installation of up to 23 new signalized midblock crossings throughout the Central SoMa transportation study area. The provision of new crossings would enhance pedestrian circulation and safety, as midblock crossings would substantially reduce the distance pedestrians would need to travel in order to cross the street. The presence of signalized crossings would also enhance safety, as they would reduce the propensity to jaywalk across the multi-lane streets in the Plan Area. Pedestrian crossing times would be similar to those at adjacent intersections, and would be timed to accommodate the expected walking speed of

between 2.4 to 3.1 feet per second.[215] The proposed street network changes would complement the Vision Zero projects described above.

Within the transportation study area there are a number of seniors and persons with disabilities. With an increase in the number of pedestrians in the area, seniors and persons with disabilities may be further challenged as they travel on crosswalks and sidewalks within the Plan Area. However, the sidewalks and crosswalks within the Plan Area meet the required design standards within the *California Manual of Uniform Traffic Control Devices*[216] and the *Americans with Disabilities Act Accessibility Guidelines*,[217] many of the Vision Zero projects described above would also enhance pedestrian conditions for seniors and persons with disabilities, and, as described above, numerous Plan improvements would enhance and facilitate pedestrian travel in Central SoMa.

Overall, implementation of the Plan's street network changes would reduce safety hazards for pedestrians within Central SoMa by providing a combination of improvements aimed at accommodating increases in pedestrian volumes and reducing the potential for collisions. Overall, the impacts of the Plan related to pedestrian safety hazards would be ***less than significant***.

Crosswalk, Sidewalk, and Corner Pedestrian LOS Impact Analysis

Table IV.D-12, Pedestrian Crosswalk Level of Service—Weekday Midday Peak Hour—Existing and Existing plus Plan Conditions, and **Table IV.D-13, Pedestrian Crosswalk Level of Service—Weekday PM Peak Hour—Existing and Existing plus Plan Conditions**, present the pedestrian volumes and LOS conditions for the existing plus Plan conditions at the crosswalk locations for the weekday midday and p.m. peak hours, respectively. **Table IV.D-14, Pedestrian Sidewalk Level of Service – Weekday Midday Peak Hour Existing and Existing plus Plan Conditions**, and **Table IV.D-15, Pedestrian Sidewalk Level of Service—Weekday PM Peak Hour Existing and Existing plus Plan Conditions**, present the pedestrian volumes and LOS conditions for the existing plus Plan conditions at the sidewalk locations for the weekday midday and p.m. peak hours, respectively. **Table IV.D-16, Pedestrian Corner Level of Service—Weekday Midday Peak Hour—Existing and Existing plus Plan Conditions**, and **Table IV.D-17, Pedestrian Corner Level of Service—Weekday PM Peak Hour—Existing and Existing plus Plan Conditions**, present the pedestrian volumes and LOS conditions for the existing plus Plan conditions at the corner locations for the weekday midday and p.m. peak hours, respectively. Two scenarios are presented: one for conditions with only the additional pedestrian trips generated by development under the Plan only (i.e., the Land Use Plan Only Alternative), and one for conditions including implementation of the Plan, including development under the Plan as well as the proposed street network changes.

[215] All new midblock signals would meet SFMTA standards and California Manual on Uniform Traffic Control Devices (MUTCD) requirements. At all existing and new intersections where pedestrian signals are installed, SFMTA provides pedestrian clearance times (i.e., flashing red hand + yellow + all-red) at a pedestrian walking speed of 3.5 feet per second, plus an additional 7 seconds minimum for the walk phase. An additional SFMTA standard is applied to the signal timing splits (green + yellow + all-red), which are timed for a pedestrian walking speed of 2.5 feet per second. The most conservative calculation prevails.
[216] California Manual of Uniform Traffic Control Devices 2014 Revision 1. Can be reviewed on California Department of Transportation (Caltrans) website: http://www.dot.ca.gov/trafficops/camutcd/camutcd2014rev1.html.
[217] ADA Accessibility Guidelines (ADAAG), https://www.access-board.gov/guidelines-and-standards/buildings-and-sites/about-the-ada-standards/background/adaag, accessed on August 16, 2016.

TABLE IV.D-12 PEDESTRIAN CROSSWALK LEVEL OF SERVICE—WEEKDAY MIDDAY PEAK HOUR—EXISTING AND EXISTING PLUS PLAN CONDITIONS

Intersection and Crosswalk Locations	Existing			Existing plus Land Use Plan Only Alternative (see Section VI.F, Alternatives)			Existing plus Plan[c]		
	Pedestrians	sf/ped[a]	LOS[b]	Pedestrians	sf/ped	LOS	Pedestrians	sf/ped	LOS
Third/Mission									
North	971	28	C	1,056	25	C	1,063	42	B
South	1,068	23	D	1,162	21	D	1,169	36	C
East	1,121	30	C	1,219	27	C	**1,227**	**12**	**E**
West	921	42	B	1,002	39	C	1,008	**13**	**E**
Third/Howard									
North	653	49	B	710	29	C	715	>60	A
South	716	>60	A	779	36	C	784	>60	A
East	727	42	B	791	24	D	796	>60	A
West	686	49	B	746	28	C	751	16	D
Fourth/Mission									
North	1,171	25	C	1,274	23	D	1,281	42	B
South	1,391	21	D	1,513	19	D	1,522	35	C
East	1,792	27	C	1,949	24	C	**1,961**	**11**	**E**
West	1,645	29	C	1,789	26	C	**1,800**	**10**	**E**
Fourth/Howard									
North	669	>60	A	728	>60	A	732	>60	A
South	580	32	C	631	29	C	635	>60	A
East	1,070	>60	A	1,164	57	B	1,171	>60	A
West	619	24	C	673	22	D	677	26	C
Fourth/Folsom									
North	33	>60	A	42	>60	A	43	>60	A
South	247	53	B	314	42	B	318	>60	A
East	390	38	C	496	29	C	502	34	C
West	296	>60	A	376	>60	A	381	>60	A
Fourth/Harrison									
North	167	>60	A	212	>60	A	215	>60	A
South and Ramp[d]	-	-	-	-	-	-	-	-	-
East	161	>60	A	745	49	B	755	42	B
West	8	>60	A	34	>60	A	35	>60	A
Fourth/Bryant									
North	4	>60	A	27	>60	A	27	>60	A
South	70	>60	A	248	50	B	251	>60	A
East	152	41	B	684	32	C	693	25	C
West	3	>60	A	31	>60	A	31	>60	A
Ramp	2	>60	A	10	>60	A	10	>60	A
Fourth/Brannan									
North	45	>60	A	483	56	B	485	>60	A
South	68	>60	A	563	41	B	566	53	B
East	116	>60	A	1,028	34	C	1,034	40	B
West	112	54	B	672	24	D	676	28	C
Fourth/Townsend									
North	153	>60	A	1,052	38	C	1,058	38	C
South	88	>60	A	630	38	C	634	38	C
East	113	>60	A	1,050	34	C	1,056	34	C
West	166	22	D	**1,061**	**9**	**E**	**1,067**	**9**	**E**
Fourth/King									
North	118	>60	A	652	44	B	656	44	B
South	120	>60	A	974	32	C	980	32	C
East	162	>60	A	1,615	33	C	1,625	33	C
West	246	>60	D	1,669	29	C	1,680	29	C

SOURCE: SF Planning Department, Fehr & Peers, 2016. Research, studies, and analysis for the Central SoMa Plan.

NOTES:

a. Square feet per pedestrian. Inputs into this metric include signal cycle length, pedestrian green time, crosswalk square footage, and pedestrian volumes. Changes to any of these inputs across the scenarios (e.g. change in signal cycle from 60 to 90 seconds) lead to changes in the metric value and the resulting LOS.

b. Crosswalks operating at LOS E or LOS F highlighted in **bold**. Shaded indicates significant project impact.

c. With Plan analysis assumes that crosswalks would be widened to width of adjacent sidewalks and signal control changes would also be implemented. Analysis assumes implementation of Howard/Folsom One-Way Option, although pedestrian conditions under the Howard/Folsom Two-Way Option would be similar.

d. At the intersection of Fourth/Harrison Street, pedestrian crossings across the south leg (i.e., crossing Fourth Street) or the I-80 westbound on-ramp are currently not permitted.

TABLE IV.D-13 PEDESTRIAN CROSSWALK LEVEL OF SERVICE—WEEKDAY PM PEAK HOUR—EXISTING AND EXISTING PLUS PLAN CONDITIONS

Intersection and Crosswalk Locations	Existing			Existing plus Land Use Plan Only Alternative (see Section VI.F, Alternatives)			Existing plus Plan[c]		
	Pedestrians	sf/ped[a]	LOS[b]	Pedestrians	sf/ped	LOS	Pedestrians	sf/ped	LOS
Third/Mission									
North	1,044	34	C	1,136	31	C	1,142	40	B
South	655	48	B	713	44	B	717	>60	A
East	1,094	29	C	1,190	27	C	**1,197**	**15**	**E**
West	882	35	C	959	32	C	965	**13**	**E**
Third/Howard									
North	472	>60	A	513	41	B	517	>60	A
South	529	>60	A	575	53	B	579	>60	A
East	853	40	C	928	22	D	933	57	B
West	752	54	B	818	31	C	823	17	D
Fourth/Mission									
North	1,124	27	C	1,223	24	C	1,230	45	B
South	1,450	20	D	1,577	18	D	1,587	33	C
East	2,374	19	D	2,582	17	D	**2,598**	**<8**	**F**
West	1,927	24	C	2,096	22	D	**2,109<**	**<8**	**F**
Fourth/Howard									
North	595	>60	A	647	>60	A	651	>60	A
South	437	43	B	475	39	C	478	>60	A
East	1,261	47	B	1,372	42	B	1,380	>60	A
West	603	25	C	656	22	D	660	27	C
Fourth/Folsom									
North	29	>60	A	37	>60	A	37	>60	A
South	246	45	B	313	34	C	317	>60	A
East	644	22	D	819	16	D	829	19	D
West	324	>60	A	412	>60	A	417	>60	A
Fourth/Harrison									
North	221	>60	A	281	>60	A	285	>60	A
South and Ramp[d]	-	-	-	-	-	-	-	-	-
East	947	30	C	1,204	22	D	1,120	21	D
West	21	>60	A	27	>60	A	27	>60	A
Fourth/Bryant									
North	19	>60	A	24	>60	A	24	>60	A
South	206	>60	A	262	>60	A	265	>60	A
East	923	22	D	1,173	17	D	1,189	16	D
West	35	>60	A	44	>60	A	45	>60	A
Ramp	15	>60	A	19	>60	A	19	>60	A
Fourth/Brannan									
North	466	59	B	1,013	26	C	1,019	44	B
South	382	>60	A	830	28	C	835	29	C
East	682	45	B	1,482	19	D	1,491	30	C
West	633	24	C	**1,376**	**10**	**E**	1,384	16	D
Fourth/Townsend									
North	587	>60	A	1,276	48	B	1,284	48	B
South	761	40	B	1,654	16	D	1,664	16	D
East	564	>60	A	1,226	36	C	1,233	35	C
West	1,519	8	**E**	**3,302**	**< 8**	**F**	**3,322**	**< 8**	**F**
Fourth/King									
North	843	39	C	1,832	16	D	1,844	16	D
South	793	40	B	1,724	17	D	1,734	16	D
East	720	58	B	1,565	25	C	1,575	25	C
West	1,917	29	C	**4,167**	**12**	**E**	**4,192**	**12**	**E**

SOURCE: SF Planning Department, Fehr & Peers, 2016. Research, studies, and analysis for the Central SoMa Plan.

NOTES:

a. Square feet per pedestrian. Inputs into this metric include signal cycle length, pedestrian green time, crosswalk square footage, and pedestrian volumes. Changes to any of these inputs across the scenarios (e.g. change in signal cycle from 60 to 90 seconds) lead to changes in the metric value and the resulting LOS.

b. Crosswalks operating at LOS E or LOS F highlighted in **bold**. Shaded indicates significant project impact.

c. With Plan analysis assumes that crosswalks would be widened to width of adjacent sidewalks and signal control changes would also be implemented. Analysis assumes implementation of Howard/Folsom One-Way Option, although pedestrian conditions under the Howard/Folsom Two-Way Option would be similar.

d. At the intersection of Fourth/Harrison Street, pedestrian crossings across the south leg (i.e., crossing Fourth Street) or the I-80 westbound on-ramp are currently not permitted.

TABLE IV.D-14 PEDESTRIAN SIDEWALK LEVEL OF SERVICE – WEEKDAY MIDDAY PEAK HOUR EXISTING AND EXISTING PLUS PLAN CONDITIONS

Intersection and Sidewalk Location	Existing			Existing plus Land Use Plan Only Alternative (see Section VI.F, Alternatives)			Existing plus Plan[c]		
	Pedestrians	ped/ min/ft[a]	LOS[b]	Pedestrians	ped/ min/ft	LOS	Pedestrians	ped/ min/ft	LOS
Fourth Street between Market and Mission[d]									
West	1,668	5.1	C	2,120	6.5	D	2,148	2.5	B
East	1,408	2.7	B	1,790	3.5	C	1,813	2.6	B
Fourth Street between Mission and Howard[e]									
West	667	1.2	B	848	1.6	B	859	0.9	B
East	2,247	8.2	D	2,856	10.5	D	2,894	2.3	B
Fourth Street between Folsom and Harrison[f]									
West	178	<0.5	A	226	0.5	B	229	<0.5	A
East	896	2.2	B	1,139	4.8	C	1,154	1.8	B
Fourth Street between Bryant and Brannan[g]									
West	135	<0.5	A	293	0.8	B	295	0.8	B
East	280	0.8	B	609	1.7	B	612	1.7	B
Fourth Street between Brannan and Townsend[g]									
West	267	0.7	B	580	1.5	B	584	1.5	B
East	422	1.1	B	917	2.4	B	923	2.5	B

SOURCE: SF Planning Department, Fehr & Peers, 2016. Research, studies, and analysis for the Central SoMa Plan.

NOTES:

a. Pedestrians per foot per minute.

b. Shaded indicates significant project impact.

c. With Plan analysis assumes that sidewalks on one or both sides of the street would be widened by about five feet between Market and Harrison Streets as detailed below. Analysis assumes implementation of Howard/Folsom One-Way Option, although pedestrian conditions under the Howard/Folsom Two-Way Option would be similar.

d. On Fourth Street between Market and Mission Streets, with the proposed street network improvements, the west sidewalk would be widened from 10 to 17.5 feet, and the east sidewalk would remain the same as under existing conditions.

e. On Fourth Street between Mission and Howard Streets, with the proposed street network improvements, the west sidewalk would be widened from 18 to 20 feet, and the east sidewalk would be widened from 12 to 25 feet

f. On Fourth Street between Folsom and Harrison Streets, with the proposed street network improvements, the west sidewalk would be widened from 12 to 17 feet, and the east sidewalk would be widened from 10 to 15 feet.

g. On Fourth Street between Bryant and Brannan Streets, and between Brannan and Townsend Streets, the west and east sidewalks would remain the same as under existing conditions.

TABLE IV.D-15 PEDESTRIAN SIDEWALK LEVEL OF SERVICE—WEEKDAY PM PEAK HOUR EXISTING AND EXISTING PLUS PLAN CONDITIONS

Intersection and Sidewalk Location	Existing			Existing plus Land Use Plan Only Alternative (see Section VI.F, Alternatives)			Existing plus Plan[c]		
	Pedestrians	ped/ min/ft[a]	LOS[b]	Pedestrians	ped/ min/ft	LOS	Pedestrians	ped/ min/ft	LOS
Fourth Street between Market and Mission[d]									
West	1,847	5.6	C	2348	6.5	D	2379	2.8	B
East	2,049	4.0	C	2605	3.5	C	2639	3.7	C
Fourth Street between Mission and Howard[e]									
West	749	1.4	B	952	1.7	B	965	1.0	B
East	1,926	7.1	D	2448	10.5	D	2481	2.0	B
Fourth Street between Folsom and Harrison[f]									
West	158	<0.5	A	201	0.5	B	203	<0.5	A
East	1,080	2.4	B	2,347	4.8	C	1,391	1.9	B
Fourth Street between Bryant and Brannan[g]									
West	358	0.9	B	778	0.8	B	783	2.0	B
East	748	1.9	B	1,626	1.7	C	1,636	4.2	C
Fourth Street between Brannan and Townsend[g]									
West	943	2.4	B	2,050	1.5	C	2,062	5.2	C
East	539	1.6	B	1,172	2.4	C	1,179	3.4	C

SOURCE: SF Planning Department, Fehr & Peers, 2016. Research, studies, and analysis for the Central SoMa Plan.

NOTES:

a. Pedestrians per foot per minute.

b. Shaded indicates significant project impact.

c. With Plan analysis assumes that sidewalks on one or both sides of the street would be widened by about five feet between Market and Harrison Streets as detailed below. Analysis assumes implementation of Howard/Folsom One-Way Option, although pedestrian conditions under the Howard/Folsom Two-Way Option would be similar.

d. On Fourth Street between Market and Mission Streets, with the proposed street network improvements, the west sidewalk would be widened from 10 to 17.5 feet, and the east sidewalk would remain the same as under existing conditions.

e. On Fourth Street between Mission and Howard Streets, with the proposed street network improvements, the west sidewalk would be widened from 18 to 20 feet, and the east sidewalk would be widened from 12 to 25 feet

f. On Fourth Street between Folsom and Harrison Streets, with the proposed street network improvements, the west sidewalk would be widened from 12 to 17 feet, and the east sidewalk would be widened from 10 to 15 feet.

g. On Fourth Street between Bryant and Brannan Streets, and between Brannan and Townsend Streets, the west and east sidewalks would remain the same as under existing conditions.

TABLE IV.D-16 PEDESTRIAN CORNER LEVEL OF SERVICE—WEEKDAY MIDDAY PEAK HOUR—EXISTING AND EXISTING PLUS PLAN CONDITIONS

Intersection and Corner Locations	Existing			Existing plus Land Use Plan Only Alternative (see Section VI.F, Alternatives)			Existing plus Plan[c]		
	Pedestrians	sf/ped[a]	LOS[b]	Pedestrians	sf/ped	LOS	Pedestrians	sf/ped	LOS
Third/Mission									
Northwest	2,081	7	C	2,264	6	C	2,277	>13	A
Northeast	2,301	11	B	2,503	10	B	2,518	>13	A
Southwest	2,188	7	C	2,380	6	D	2,394	>13	A
Southeast	2,408	5	D	2,619	4	D	2,635	>13	A
Third/Howard									
Northwest	1,473	>13	A	1,602	>13	A	1,612	>13	A
Northeast	1,518	>13	A	1,651	>13	A	1,661	>13	A
Southwest	1,542	>13	A	1,678	>13	A	1,688	>13	A
Southeast	1,587	10	B	1,727	9	C	1,737	>13	A
Fourth/Mission									
Northwest	3,098	>13	A	3,370	>13	A	3,390	>13	A
Northeast	3,259	>13	A	3,546	>13	A	3,547	>13	A
Southwest	3,340	>13	A	3,633	>13	A	3,655	>13	A
Southeast	3,501	10	C	3,809	8	C	3,831	>13	A
Fourth/Howard									
Northwest	1,417	>13	A	1,541	>13	A	1,550	>13	A
Northeast	1,913	>13	A	2,081	>13	A	2,093	>13	A
Southwest	1,319	>13	A	1,435	>13	A	1,443	>13	A
Southeast	1,815	>13	A	1,974	13	B	1,986	>13	A
Fourth/Folsom									
Northwest	362	>13	A	460	>13	A	466	>13	A
Northeast	465	>13	A	591	>13	A	599	>13	A
Southwest	597	>13	A	759	>13	A	769	>13	A
Southeast	701	>13	A	891	>13	A	902	>13	A
Fourth/Harrison									
Northwest	213	>13	A	271	>13	A	275	>13	A
Northeast	828	>13	A	1,053	>13	A	1,067	>13	A
Southwest	30	>13	A	38	>13	A	38	>13	A
Southeast	645	>13	A	819	>13	A	830	>13	A
Fourth/Bryant									
Northwest	50	>13	A	63	>13	A	64	>13	A
Northeast	615	>13	A	782	>13	A	792	>13	A
Southwest	241	>13	A	306	>13	A	310	>13	A
Southeast	806	>13	A	1,025	>13	A	1,038	>13	A
Fourth/Brannan									
Northwest	584	>13	A	1,270	>13	A	1,277	>13	A
Northeast	765	>13	A	1,662	8	B	1,672	>13	A
Southwest	625	>13	A	1,358	> 13	A	1,366	>13	A
Southeast	805	>13	A	1,750	> 13	A	1,761	>13	A
Fourth/Townsend									
Northwest	1,069	>13	A	2,324	>13	A	2,338	>13	A
Northeast	1,064	>13	A	2,312	>13	A	2,326	>13	A
Southwest	856	>13	A	1,860	>13	A	1,872	>13	A
Southeast	850	>13	A	1,848	>13	A	1,860	>13	A
Fourth/King									
Northwest	1,175	>13	A	2,552	>13	A	2,564	>13	A
Northeast	1,147	>13	A	2,494	>13	A	2,509	>13	A
Southwest	1,338	>13	A	2,907	>13	A	2,925	>13	A
Southeast	1,310	>13	A	2,848	>13	A	2,865	>13	A

SOURCE: SF Planning Department, Fehr & Peers, 2016. Research, studies, and analysis for the Central SoMa Plan.

NOTES:

a. Square feet per pedestrian.

b. Shaded indicates significant project impact.

c. With Plan analysis assumes that sidewalks would be widened to width of adjacent sidewalks, and travel lane and signal control changes would be implemented.

TABLE IV.D-17 PEDESTRIAN CORNER LEVEL OF SERVICE—WEEKDAY PM PEAK HOUR—EXISTING AND EXISTING PLUS PLAN CONDITIONS

Intersection and Corner Locations	Existing			Existing plus Land Use Plan Only Alternative (see Section VI.F, Alternatives)			Existing plus Plan[c]		
	Pedestrians	sf/ped[a]	LOS[b]	Pedestrians	sf/ped	LOS	Pedestrians	sf/ped	LOS
Third/Mission									
Northwest	2,119	8	C	3,651	7	C	3,673	>13	A
Northeast	2,352	12	B	4,186	11	B	4,211	>13	A
Southwest	1,691	9	C	4,041	8	C	4,065	>13	A
Southeast	1,924	7	C	4,576	6	D	4,603	>13	A
Third/Howard									
Northwest	1,346	>13	A	1,434	>13	A	1,442	>13	A
Northeast	1,458	>13	A	2,221	>13	A	2,234	>13	A
Southwest	1,409	>13	A	1,244	>13	A	1,252	>13	A
Southeast	1,520	9	C	2,032	8	C	2,044	>13	A
Fourth/Mission									
Northwest	3,356	>13	A	3,651	>13	A	3,673	>13	A
Northeast	3,848	>13	A	4,186	>13	A	4,211	>13	A
Southwest	3,715	>13	A	4,041	>13	A	4,065	>13	A
Southeast	4,206	5	D	4,576	4	D	4,603	>13	A
Fourth/Howard									
Northwest	1,318	>13	A	1,434	>13	A	1,442	>13	A
Northeast	2,042	>13	A	2,221	>13	A	2,234	>13	A
Southwest	1,144	>13	A	1,244	>13	A	1,252	>13	A
Southeast	1,868	9	C	2,032	7	C	2,044	>13	A
Fourth/Folsom									
Northwest	388	>13	A	494	>13	A	500	>13	A
Northeast	740	>13	A	941	>13	A	953	>13	A
Southwest	627	>13	A	797	>13	A	808	>13	A
Southeast	979	>13	A	1,245	>13	A	1,261	>13	A
Fourth/Harrison									
Northwest	266	>13	A	338	>13	A	343	>13	A
Northeast	1,285	>13	A	1,633	>13	A	1,655	>13	A
Southwest	23	>13	A	29	>13	A	30	>13	A
Southeast	1,042	>13	A	1,324	11	B	1,342	>13	A
Fourth/Bryant									
Northwest	59	>13	A	76	>13	A	77	>13	A
Northeast	1,036	>13	A	1,317	>13	A	1,335	>13	A
Southwest	265	>13	A	337	>13	A	341	>13	A
Southeast	1,242	>13	A	1,579	8	C	1,599	>13	A
Fourth/Brannan									
Northwest	1,209	>13	A	2,628	>13	A	2,644	>13	A
Northeast	1,263	>13	A	2,745	10	B	2,762	>13	A
Southwest	1,117	>13	A	2,427	10	C	2,442	>13	A
Southeast	1,170	>13	A	2,544	12	B	2,560	>13	A
Fourth/Townsend									
Northwest	2,317	>13	A	5,035	6	C	5,066	6	C
Northeast	1,266	>13	A	2,752	>13	A	2,769	>13	A
Southwest	2,508	>13	A	5,451	>13	A	5,485	>13	A
Southeast	1,458	>13	A	3,168	>13	A	3,187	>13	A
Fourth/King									
Northwest	3,036	>13	A	6,599	>13	A	6,639	>13	A
Northeast	1,719	>13	A	3,737	>13	A	3,760	>13	A
Southwest	2,981	>13	A	6,480	8	C	6,519	8	C
Southeast	1,664	>13	A	3,618	11	B	3,640	11	B

SOURCE: SF Planning Department, Fehr & Peers, 2016. Research, studies, and analysis for the Central SoMa Plan.

NOTES:

a. Square feet per pedestrian.

b. Shaded indicates significant project impact.

c. With Plan analysis assumes that sidewalks would be widened to width of adjacent sidewalks, and travel lane and signal control changes would be implemented.

The Plan includes upgrading sidewalks to meet the standards in the *Better Streets Plan* where possible, including providing corner sidewalk extensions to enhance pedestrian safety at crosswalks and adding street trees and furnishing wherever possible. The analysis of the street network changes incorporates the sidewalk widening, corner sidewalk extensions, and crosswalk upgrade improvements proposed as part of the Plan, and assumes the signal timing changes associated with the travel lane/circulation changes. Analysis of the street network improvements assumes implementation of the Howard/Folsom One-Way Option. Pedestrian conditions under the Howard/Folsom Two-Way Option would be similar to the Howard/Folsom One-Way Option, as the total roadway right-of-way for pedestrians to cross on both Howard and Folsom Streets would be the same for both options, and pedestrian crossing times would be the same or similar for both options. With implementation of the pedestrian crosswalk and sidewalk improvements, pedestrian conditions would generally improve over existing conditions, reflecting the additional right-of-way dedicated to pedestrians, and exposure to existing pedestrian hazards would be reduced. On some streets where sidewalk widening is proposed, recessed commercial and/or passenger loading bays would be installed to accommodate loading demand, and therefore, at these locations, sidewalk widths would remain similar to existing conditions, resulting in slightly more constrained conditions for pedestrians at the recessed loading bays.

With implementation of the Plan, the sidewalks and corner locations would not be adversely affected, although a number of crosswalk locations would operate at LOS E or LOS F during the midday and/or the p.m. peak hours. Implementation of the street network changes, in combination with the additional pedestrians generated by development under the Plan, would result in ***significant*** pedestrian LOS impacts at the west and east crosswalks at the intersections of Third/Mission and Fourth/Mission, and at the west crosswalks at the intersections of Fourth/Townsend and Fourth/King during the midday and/or p.m. peak hours. The impacts to crosswalk operations at the Third/Mission and Fourth/Mission intersections are related to the signal timing changes (i.e., increasing the signal cycle length from 60 to 90 seconds) associated with the travel lane/circulation changes.

Implementation of **Mitigation Measure M-TR-4, Upgrade Central SoMa Area Crosswalks** (described below), which would widen crosswalks to up to 40 feet, would improve the crosswalk LOS operating conditions at these locations to LOS D or better, and reduce pedestrian crosswalk impacts at the intersections of Third/Mission, Fourth/Mission, and Fourth/Townsend to less than significant. A crosswalk width greater than 40 feet would be required to mitigate the impact at the west crosswalk at the intersection of Fourth/King and this widening would not be feasible. Implementation of this mitigation measure may require elimination of up to two on-street parking or commercial loading spaces per crosswalk, and/or may require adjustments to the length of adjacent bus stops, although such measures would not result in any significant secondary transportation-related impacts. However, because the feasibility of the crosswalk widening beyond the current width is uncertain due to roadway or other physical constraints (e.g., presence of bus stops or platforms), the pedestrian impact at the crosswalks due to implementation of the Plan with either the Howard/Folsom One-Way Option or the Howard/Folsom Two-Way Option would remain ***significant and unavoidable with mitigation***.

Mitigation Measures

Mitigation Measure M-TR-4: Upgrade Central SoMa Area Crosswalks. Consistent with the proposed provisions of the Plan to establish a minimum width of crosswalks of 15 feet, and up to 40 feet where

future pedestrian volumes warrant, as feasible, the SFMTA shall widen and restripe the crosswalks to the continental design, consistent with the *Better Streets Plan*.[218]

With either the Howard/Folsom One-Way Option or Howard/Folsom Two-Way Option street network changes, the SFMTA shall monitor crosswalk operations for deteriorated conditions (i.e., crosswalk operating conditions of LOS E or LOS F, or observations of substantial crosswalk overcrowding), and, as feasible, widen the following crosswalks:

- At the intersection of Third/Mission, widen the east and west crosswalks to 20 feet.
- At the intersection of Fourth/Mission, widen the east crosswalk to 40 feet, and widen the west crosswalk to 35 feet.
- At the intersection of Fourth/Townsend, widen the west crosswalk to 30 feet.

Significance after Mitigation: Even with this mitigation measure, this impact would remain ***significant and unavoidable with mitigation***.

Bicycle Impacts

Impact TR-5: Development under the Plan, including the proposed open space improvements and street network changes, would not result in potentially hazardous conditions for bicyclists, or otherwise substantially interfere with bicycle accessibility. (Less than Significant)

Development associated with the Plan would generate about 3,930 other trips (including bicycle trips) during the a.m. peak hour and 6,120 other trips during the p.m. peak hour, a portion of which would be bicycle trips.[219] These new bicycle trips would utilize the existing and planned system of bicycle routes and bicycle lanes. Bicycle lanes are currently provided on Howard, Folsom, and Townsend Streets for east/west travel, and on Seventh, Eighth, and 11th Streets for north/south travel within and through Central SoMa. Proposed bicycle improvements included in the Plan would generally enhance cycling conditions in the transportation study area, including new cycle tracks on Folsom, Third, and Fourth Streets, and a cycle track or bicycle lane on Howard Street depending on whether the Howard/Folsom One-Way Option or Howard/Folsom Two-Way Option is selected. Provision of cycle tracks, reduction in the number of mixed-flow travel lanes, and removal of on-street parking along many of these streets would reduce the potential for injury to bicyclists as a result of "dooring"[220], as the lanes would provide dedicated space for bicyclists and reduce the incidence of a blocked bicycle lane due to double-parking and loading vehicles. With implementation of the cycle tracks, on-street parking would be located between the cycle track and travel lane, and drivers would not cross over into the bicycle lane to park. However, with the cycle track, drivers would need to watch carefully for bicyclists when they are turning at cross-streets or driveways. Parking restrictions near driveways would be enforced to maintain clear sight lines, and these would be incorporated into the detailed design of the street network changes.

[218] Crosswalks with a continental design have parallel markings that are the most visible to drivers. Use of continental design for crosswalk marking also improves crosswalk detection for people with low vision and cognitive impairments. Available at http://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/sidewalk2/sidewalks208.cfm, accessed October 2, 2014.
[219] Other includes walk, bicycle, motorcycle, and other modes such as taxi/TNC vehicles (e.g., Uber, Lyft, etc.) and limousines.
[220] Dooring refers to a vehicle driver or passenger opening a door into the path of an oncoming bicyclist, causing a collision.

The cycle tracks would be designed consistent with NACTO and FHWA standards.[221,222] For example:

- A combination of nationally approved signage and pavement markings would be installed and maintained. The cycle tracks would be clearly marked with painted lines, symbols, and vertical barriers such as delineator posts.
- When parking is provided adjacent to the cycle track, parking would be prohibited near the intersections to improve visibility. The desirable no-parking area is about 30 feet from each side of the crossing.
- For vehicles attempting to cross the cycle track from the side-streets or driveway, street and street furnishings, and/or other features would accommodate a sight triangle of 20 feet to the cycle track from minor street crossings, and 10 feet from driveway crossings.
- Color, yield lines, and "Yield to Bikes" signage would be used to identify conflict areas and clarify that the cycle track has priority over entering or exiting traffic.
- Signs on side streets or driveways would alert drivers to expect two-way bicycle traffic, especially on one-way streets.

Implementation of the cycle tracks would also enhance safety for bicyclists and pedestrians. In New York City, total injuries decreased by 20 percent (including pedestrians, bicyclists and drivers) following implementation of protected bicycle lanes on three corridors in Manhattan.[223] Therefore, implementation of the cycle tracks would be expected to reduce the average risk of serious injuries while bicyclist volumes increase.

Installation of up to 23 new signalized midblock pedestrian crossings as part of the Plan would not substantially affect the existing and proposed bicycle facilities on Howard, Folsom, Brannan, Third, and Fourth Streets. The midblock crossings would be coordinated with the signal timing of upstream and/or downstream intersections to minimize any new delay and/or corresponding queuing as a result of the new traffic signal, and therefore, bicyclists would be anticipated to experience minimal increases in travel times. The addition of one or more midblock crossing along a bicycle route would not substantially affect overall bicycle travel times for the affected routes. Thus, the impact of up to 23 new midblock pedestrian crossings on bicyclists would be ***less than significant***.

As discussed above, development under the Plan would generate new bicycle trips that would utilize the existing bicycle lanes on Howard, Folsom, and Townsend Streets for east/west travel, and on Seventh, Eighth, and 11th Streets for north/south travel within and through Central SoMa, and the Plan would enhance existing facilities and provide for new protected facilities on Third, Fourth, and Brannan Streets. Increased congestion associated with Plan-related population growth could increase the potential for vehicular-bicycle and pedestrian-bicycle conflicts by exposing additional people to existing transportation conflicts and hazards. This additional exposure of new transportation system users to existing hazards would not be considered

[221] National Association of City Transportation Officials, *Urban Bikeway Design Guide*, Second Edition, 2014. Available at http://nacto.org/publication/urban-bikeway-design-guide/cycle-tracks, accessed January 4, 2016.
[222] U.S. Department of Transportation Federal Highway Administration, Separated Bike Lane Planning and Design Guide, 2015. Available at https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/separated_bikelane_pdg/page00.cfm, accessed January 4, 2016.
[223] New York City Department of Transportation, *Protected Bicycle Lanes in NYC*, September 2014. Available at http://www.nyc.gov/html/dot/downloads/pdf/2014-09-03-bicycle-path-data-analysis.pdf, accessed December 30, 2015.

creation of a new hazard, and would not adversely affect bicycle facilities in the area. By physically separating bicyclists from vehicle traffic, the proposed cycle tracks would offer a higher level of security than bicycle lanes. Thus, for the reasons described above, the impacts of the Plan's street network changes on bicycle facilities and circulation would be ***less than significant***.

While the Plan's impacts on bicycle facilities and circulation would be less than significant, **Improvement Measure I-TR-5a: Cycle Track Public Education Campaign**, and **Improvement Measure I-TR-5b: Cycle Track Post-Implementation Surveys**, may be recommended for consideration by City decision makers to further reduce the less-than-significant impacts related to potential conflicts between bicyclists and pedestrians, transit, trucks, and autos.

> **Improvement Measure I-TR-5a: Cycle Track Public Education Campaign.** To further reduce potential conflicts between bicyclists and pedestrians, transit and other vehicles, the SFMTA could develop and implement a cycle track public education campaign to develop safety awareness by providing information to the public through outreach channels such as media campaigns, brochures, and websites. This campaign would be in addition to the existing SFMTA bicycle safety outreach, specifically geared to Central SoMa and cycle tracks. Elements of the education campaign could include:
>
> - Clarifying rules of the road for cycle tracks.
> - Improving pedestrian awareness about where to wait and how to cross the cycle track (i.e., on the sidewalk or buffer zone, rather than in the cycle track or adjacent to parked vehicles).
> - Providing bicycle-safety education for neighborhood schools (e.g., the Bessie Carmichael School), and neighborhood groups within Central SoMa.
> - Ensuring that the San Francisco Police Department officers are initially and repeatedly educated on traffic law as it applies to bicyclists and motorists.
> - Providing safety compliance education for bicyclists coupled with increased enforcement for violations by bicyclists.
>
> The public education campaign could include a website, as well as instruction videos with information for cyclists, motorists, and pedestrians. To the extent possible, the public education campaign could be coordinated with the San Francisco Bicycle Coalition efforts.
>
> **Improvement Measure I-TR-5b: Cycle Track Post-Implementation Surveys.** Following implementation of the cycle tracks on Howard, Folsom, Brannan, Third and Fourth Streets, the SFMTA could conduct motorist, pedestrian, bicycle, and business surveys to understand how the cycle tracks are performing, and to make adjustments to the design and supplemental public education campaign. In addition to the user surveys, the post-implementation assessment could include before/after photos, bicyclist ridership and traffic volume counts, video analysis of behavior of bicyclists, pedestrians, and drivers, assessment of vehicle queuing, and compliance with new signs/signals. The information would be used as input for subsequent design and implementation of cycle tracks on other streets in San Francisco, as well as documenting the effectiveness of the cycle track.

Implementation of these improvement measures could include development and refinement of a public education campaign by the SFMTA focused on the proposed Central SoMa cycle tracks. The public education program would increase safety awareness for bicyclists, pedestrians, transit, and other vehicles, thereby reducing the potential for conflicts between the various modes. Implementation of these improvement measures would provide information that would inform the design of future cycle tracks and further reduce

the ***less-than-significant*** impacts related to potential conflicts between bicyclists and pedestrians, transit, trucks, and autos, and would not result in secondary transportation-related impacts.

Mitigation: None required.

Loading Impacts

Impact TR-6: Development under the Plan, including the proposed open space improvements and street network changes, would result in a reduction in on-street commercial loading supply such that the loading demand during the peak hour of loading activities would not be accommodated within on-street loading supply, would impact existing passenger loading/unloading zones, and may create hazardous conditions or significant delay that may affect transit, other vehicles, bicycles, or pedestrians. (Significant and Unavoidable with Mitigation)

Commercial Vehicle Loading/Unloading Activities. Projected development within the Plan Area would generate about 1,754 delivery and service vehicle trips per day, which would result in a demand for 102 loading spaces during the peak hour of loading activities. Section 152.1 of the *Planning Code* outlines the requirements regarding the provision of off-street freight loading and service vehicle spaces. Generally, off-street loading spaces are required for developments that provide more than 100,000 square feet of residential uses, more than 100,000 square feet of office uses, and more than 10,000 square feet of retail uses, and it is anticipated that the majority of the new loading demand would be accommodated on-site within these facilities. A project-specific analysis of the proposed loading facilities for each subsequent development project in the Plan Area would be conducted as each project is proposed and evaluated for *Planning Code* compliance and loading impacts. However, because Sections 153(a)(6), 154(b)(2), and 161(i) of the *Planning Code* include provisions for providing fewer loading spaces than typically required or undersized loading spaces, it is possible that fewer loading spaces than required, or no loading spaces, would be provided as part of new development. To the extent that loading demand is not accommodated on-site, and could not be accommodated within existing or new on-street commercial loading spaces, double-parking, illegal use of sidewalks and other public space is likely to occur. Such activities could affect traffic and transit operations as well as bike and pedestrian circulation. Double parking could adversely affect local vehicular, transit, and bicycle circulation, particularly on streets with transit-only and bicycle lanes (e.g., Third, Mission, Howard, and Folsom Streets).

Implementation of the street network changes associated with the Plan would remove on-street commercial loading spaces on a number of streets either permanently or during peak periods, as follows:

- **Howard/Folsom One-Way Option**—On Howard Street, between Third and 11th Streets, on-street parking and commercial loading spaces would be permitted along the north curb during off-peak periods, and a tow-away regulation would be in effect during peak periods. Parallel parking would be permitted adjacent to the cycle track, except where turn pockets would be provided at the approaches to certain intersections. During peak periods, about 100 standard parking spaces and 20 commercial loading spaces along the north curb would be affected. Along the north curb two residential passenger loading/unloading zones between Sixth and Eighth Streets, and the Moscone West and Intercontinental Hotel passenger/taxi loading/unloading zones would be subject to the peak period tow-away regulations. The driveway access into the Intercontinental Hotel porte-cochere/passenger loading/unloading would not be affected.

On Folsom Street, between Second and 11th Streets, on-street parking and commercial loading spaces would be permitted along the south curb during off-peak periods, and a tow-away regulation would be in effect during peak periods. Parallel parking would be permitted adjacent to the cycle track, except where turn pockets would be provided at the approaches to certain intersections. During peak periods, about 160 standard parking spaces and 15 commercial loading spaces along the south curb would be affected. East of Second Street on-street parking would be maintained on both sides of the street. Along the south curb two residential passenger loading/unloading zones between Fifth and Third Streets would be subject to the peak period tow-away regulations.

- **Howard/Folsom Two-Way Option**—On Howard Street, between Third and 11th Streets, on-street parking and commercial loading spaces would be permitted along the north and south curbs during off-peak periods, and a tow-away regulation would be in effect during peak periods. During peak periods, about 240 standard parking spaces and 45 commercial loading spaces would be affected.

  On Folsom Street, between Second and Fourth Streets, on-street parking and commercial loading spaces would be permitted along the south curb adjacent to the eastbound cycle track, and prohibited along the north curb. Between Fourth and 11th Streets, on-street parking and commercial loading spaces would be permitted on one side of the street at all times. Where on-street commercial loading spaces are provided, they would be loading bays recessed within the sidewalk.

- **Harrison Street**—On Harrison Street, between Second and Sixth Streets, on-street parking and commercial loading spaces would be permitted during off-peak periods, and a tow-away regulation would be in effect during peak periods on both sides of the street. West of Sixth Street the existing curb regulations would not be affected. During peak periods, about 190 standard parking spaces and 15 commercial loading spaces would be affected. As needed, recessed commercial loading bays could be installed within the sidewalks to provide permanent commercial loading spaces. Along the north and south curbs of Harrison Street between Second and Sixth Streets, three passenger loading/unloading zones (office, residential, Filipino Education Center) would be subject to the peak period tow-away regulations.

- **Bryant Street**—On Bryant Street, between Second and Sixth Streets, on-street parking and commercial loading spaces would be permitted during off-peak periods, and a tow-away regulation would be in effect during peak periods. During peak periods, about 155 standard parking spaces and 20 commercial loading spaces would be affected. On this section of Bryant Street there is only one passenger loading/unloading zone that would be subject to the peak period tow-away regulations.

- **Brannan Street**—On Brannan Street, between Second and Sixth Streets, on-street parking would be permitted on one side of the street in midblock locations, and commercial loading spaces could be relocated to these midblock locations, as necessary. There are currently about 200 vehicle parking spaces and 30 commercial loading spaces on Brannan Street between Second and Sixth Streets, of which approximately 50 to 70 percent would be removed.

- **Third Street**—On Third Street, between King and Market Streets, all on-street parking would be removed, but some recessed commercial loading bays could be installed within the sidewalks. About 140 standard parking spaces and 30 commercial loading spaces would be eliminated. On Third Street between Howard and Market Streets there are three hotel passenger loading/unloading zones (one for the W Hotel, and two for the Westin Hotel), and one passenger loading/unloading zone serving restaurant uses. The driveway access into the Westin Hotel porte-cochere/garage would not be affected.

- **Fourth Street**—On Fourth Street, between Market and Harrison Streets, all on-street parking would be removed, but some recessed commercial loading bays could be installed within the sidewalks. Up to 55 standard parking spaces and 3 commercial loading spaces would be eliminated. On Fourth Street between Market and Mission Streets, there are four existing passenger loading/unloading and taxi stand/bus zones (two adjacent to the Marriot Hotel on the east side of the street, and one each adjacent to the Hotel Zelos and the Mosser Hotel on the west side of the street). On Fourth Street between Mission and Howard Streets, there is an existing passenger loading/unloading zone serving Moscone West. With the proposed street network changes, a passenger loading/unloading zone would be provided at the curb on the west side of Third Street to accommodate the Hotel Zelos and Mosser Hotel passenger loading/unloading demand. The passenger loading/unloading zone would be located between the curb and the transit-only lane, and vehicles would need to merge across the transit-only lane to access the zone. In addition, with the proposed street network changes, a taxi stand would be provided on the east side of the street adjacent to the cycle track. These zones would be provided for all of the Fourth Street suboptions. The existing driveway access into the Marriott Hotel porte-cochere and off-street loading would not be affected.

With the proposed street network changes, on-street parking would be permitted on at least one side of the street, permanently or only during off-peak periods on Howard, Folsom, Bryant, and Brannan Streets. On Third and Fourth Streets, all on-street parking would be eliminated on the street segments affected by the proposed street network changes. Overall, implementation of the Plan's street network changes would result in the permanent removal of about 60 on-street commercial loading spaces, and access to about 70 on-street commercial loading spaces would be restricted during peak periods, for a total of 130 commercial loading spaces within the transportation study area. A small portion of the permanent and peak period reduction in commercial loading spaces would be offset by new commercial loading spaces that could be installed within recessed commercial loading bays within the sidewalks (the recessed bays would typically accommodate two to three commercial vehicles). In addition, some commercial loading spaces could be relocated to the other side of the street where on-street parking would be maintained, although these spaces may not be in proximity to the businesses that utilize them. The permanent and peak period removal of the 130 on-street commercial loading spaces would require existing delivery and service vehicles using these spaces to seek alternative locations (such as on the adjacent cross-streets), particularly during the morning peak period when commercial deliveries are greatest. It would also result in fewer on-street loading spaces being available for future development. The failure to provide an adequate supply of off-street commercial loading spaces for individual projects and the removal of commercial loading spaces currently used by existing buildings in the area, as described above, would exacerbate the impacts of elimination or reduction of on-street commercial loading spaces as part of the Plan's street network changes. Given the above, it is conservatively determined that implementation of the Plan would result in ***significant*** impacts with respect to commercial loading within the Plan Area.

Implementation of **Mitigation Measure M-TR-6b, Accommodation of On-Street Commercial Loading Spaces and Passenger Loading/Unloading Zones** (described below), would require SFMTA to prepare detailed designs of the street network changes, taking into consideration the on-street loading supply needs for new development as well as driveway access to loading facilities within existing and future buildings along the affected segments. This SFMTA review would inform decisions regarding the number of on-street commercial loading spaces that would be eliminated by the Plan's street network changes, as well as decisions regarding whether to add loading spaces. This measure would thus reduce the potential for disruption of

traffic and transit circulation in the Plan Area as a result of commercial loading activities. While in many situations providing on-street loading spaces elsewhere on the block or around the corner would not present challenges, replacement may not always be possible due to conditions such as existing parking prohibitions or availability of general on-street spaces that could be converted to commercial loading spaces, or pedestrian circulation area on adjacent sidewalks. Thus, the feasibility of providing replacement commercial loading spaces of similar length on the same block and side of the street or within 250 feet on adjacent side streets cannot be assured in every situation where loading spaces are removed as a result of the street network changes. Locations adjacent to transit-only lanes would also not be ideal for loading spaces because they may introduce new conflicts between trucks and transit vehicles. Given these considerations, the potential locations for replacing all on-street commercial loading spaces on streets where circulation changes are proposed (i.e., Folsom, Howard, Harrison, Bryant, Brannan, Third and Fourth Streets) are limited, and it is unlikely that a sufficient amount of spaces could be provided to offset the net loss in supply and ensure that conflicts between trucks, bicyclists, and other vehicles do not occur. Therefore, even with implementation of **Mitigation Measures M-TR-6a: Driveway and Loading Operations Plan**, and **M-TR-6b: Accommodation of On-Street Commercial Loading Spaces and Passenger Loading/Unloading Zones**, the impact of development under the Plan and the proposed street network changes related to commercial loading would remain ***significant and unavoidable with mitigation***.

Passenger Loading/Unloading Activities. Passenger loading/unloading zones (i.e., white zones) provide a place to load and unload passengers for adjacent businesses and residences, and are intended for quick passenger drop-off and pick-up, and are typically provided for establishments that have active passenger loading and unloading needs.[224] These zones require a permit be issued by SFMTA and renewed annually, and existing and new uses would be able to request a passenger loading/unloading zone adjacent to their property at any time. Requests for passenger loading/unloading zones as part of development under the Plan would be considered by the SFMTA within the constraints of the existing on-street curb regulations. Most streets within Central SoMa permit on-street parking, and as the area develops, the on-street parking spaces could be converted to passenger loading/unloading zones. If the SFMTA does not grant a permit for a passenger loading/unloading zone for a particular development project under the Plan, the lack of a passenger loading/unloading zone may be an inconvenience, but would not create potentially hazardous conditions or cause significant delays to transit, pedestrians, or bicyclists.

However, there are a number of passenger loading/unloading zones that would be affected by the Plan's proposed street network changes:

- Along Howard, Folsom, Harrison, and Bryant Streets, passenger loading/unloading zones would be subject to peak period restrictions, similar to other locations throughout San Francisco, and the operation of the uses served would not be substantially affected. However, alternate arrangements would need to be developed for passenger loading/unloading for the Bessie Carmichael School/Filipino Education Center that currently occurs on the north side of Harrison Street between

[224] Typical establishments that may qualify for a white zone are hospitals, senior centers, medical offices with five or more practitioners, restaurants with 100 or more seats or valet parking, hotels, apartment or condominium buildings with more than 50 units, theaters, churches or other large places of worship or assembly, schools and government buildings. Other establishments are reviewed on a case-by-case basis. Among other reasons, white zone requests may be denied if private off-street parking is available, seating or unit requirements are not met, or if there are adjacent passenger loading/unloading zones nearby.

Fourth and Fifth Streets (the existing passenger loading/unloading zone is about 135 feet in length, and is in effect between 7:00 a.m. and 6:00 p.m. on school days). As indicated above, recessed commercial loading bays would be installed on the north curb of Harrison Street, and these bays could be used as passenger loading/unloading for the Bessie Carmichael School/Filipino Education Center.

- On Brannan Street there is one passenger loading/unloading zone serving a restaurant that could be affected, depending on final design, as on-street parking would be permitted on one side of the street at midblock locations.
- On Third Street, the removal of on-street parking would remove three passenger loading/unloading zones for the W Hotel and the Westin Hotel. As noted above, the driveway access into the Westin Hotel porte-cochere, which provides for passenger loading/unloading activities, would not be affected. The W Hotel has a vehicular driveway through the site (i.e., between Howard and Natoma Streets), and an on-street taxi zone and a passenger loading/unloading zone on Howard Street east of Third Street, and therefore passenger loading/unloading for the W Hotel would not be substantially affected by the removal of the curbside passenger loading/unloading zone on Third Street.
- On Fourth Street, the removal of on-street parking would remove five passenger loading/unloading zones: four serving hotels (the Marriot Hotel, the Hotel Zelos, and the Mosser Hotel) and one serving Moscone West. Passenger and taxi loading/unloading would be accommodated within alternate zones located on the west curb (for the Hotel Zelos and the Mosser Hotel) and adjacent to the cycle track on the east side of the street for the Marriott Hotel. The driveway access into the Marriott Hotel porte-cochere (on both Fourth and Howard Streets) would not be affected by the street network changes.

In addition to the changes in on-street passenger loading/unloading zones on streets affected by the proposed street network changes, the Howard/Folsom Two-Way Option would include restriping of the southbound approach of Second Street at the intersection of Second/Folsom to provide a southbound right turn pocket from Second Street onto westbound Folsom Street. The reconfigured intersection approach, in combination with the planned cycle tracks on Second Street, would require the removal of the existing passenger loading/unloading zone on Second Street adjacent to the Marriott Hotel. However, hotel-related passenger loading/unloading activities would continue to be accommodated within the building's porte-cochere.

Similar to commercial loading spaces, the design of the Plan's street network changes would consider the potential relocation of passenger loading/unloading zones, particularly those serving the Moscone Center, hotels on Third and Fourth Streets, and the Bessie Carmichael School/Filipino Education Center on Harrison Street between Fourth and Fifth Streets. Implementation of **Mitigation Measure M-TR-6b, Accommodation of On-Street Commercial Loading Spaces and Passenger Loading/Unloading Zones**, would help accommodate existing and future passenger loading/unloading needs. While in many situations providing passenger loading/unloading zones elsewhere on the block or around the corner would not present challenges, replacement may not always be possible due to conditions such as existing parking prohibitions or lack of general on-street spaces that could be converted to passenger loading spaces. Because the feasibility of providing replacement passenger loading/unloading zones of similar length that would serve the affected properties, particularly the Moscone Center, hotels, and the Bessie Carmichael School/Filipino Education Center, cannot be assured, the impact of development under the Plan and the proposed street network changes on passenger loading/unloading operations would be ***significant and unavoidable with mitigation***.

Mitigation Measures

Mitigation Measure M-TR-6a: Driveway and Loading Operations Plan (DLOP). Sponsors of development projects that provide more than 100,000 square feet of residential or commercial uses shall prepare a DLOP, and submit the plan for review and approval by the Planning Department and the SFMTA in order to reduce potential conflicts between driveway operations, including loading activities, and pedestrians, bicycles and vehicles, and to maximize reliance of on-site loading spaces to accommodate new loading demand.

Prior to preparing the DLOP, the project sponsor shall meet with the Planning Department and the SFMTA to review the proposed number, location, and design of the on-site loading spaces, as well as the projected loading demand. In the event that the number of on-site loading spaces does not accommodate the projected loading demand for the proposed development, the project sponsor shall pursue with the SFMTA conversion of nearby on-street parking spaces to commercial loading spaces, if determined feasible by the SFMTA.

The DLOP shall be revised to reflect changes in accepted technology or operation protocols, or changes in conditions, as deemed necessary by the Planning Department and the SFMTA. The DLOP shall include the following components, as appropriate to the type of development and adjacent street characteristics:

- *Loading Dock Management.* To ensure that off-street loading facilities are efficiently used, and that trucks that are longer than can be safely accommodated are not permitted to use a building's loading dock, the project sponsor of a development project in the Plan Area shall develop a plan for management of the building's loading dock and shall ensure that tenants in the building are informed of limitations and conditions on loading schedules and truck size. The management plan could include strategies such as the use of an attendant to direct and guide trucks, installing a "Full" sign at the garage/loading dock driveway, limiting activity during peak hours, installation of audible and/or visual warning devices, and other features. Additionally, as part of the project application process, the project sponsor shall consult with the SFMTA concerning the design of loading and parking facilities.
- *Garage/Loading Dock Attendant.* If warranted by project-specific conditions, the project sponsor of a development project in the Plan Area shall ensure that building management employs attendant(s) for the project's parking garage and/or loading dock, as applicable. The attendant would be stationed as determined by the project-specific review analysis, typically at the project's driveway to direct vehicles entering and exiting the building and avoid any safety-related conflicts with pedestrians on the sidewalk during the a.m. and p.m. peak periods of traffic, bicycle, and pedestrian activity, with extended hours as dictated by traffic, bicycle and pedestrian conditions and by activity in the project garage and loading dock. Each project shall also install audible and/or visible warning devices, or comparably effective warning devices as approved by the Planning Department and/or the SFMTA, to alert pedestrians of the outbound vehicles from the parking garage and/or loading dock, as applicable.
- *Large Truck Access.* The loading dock attendant shall dictate the maximum size of truck that can be accommodated at the on-site loading area. In order to accommodate any large trucks (i.e., generally longer than 40 feet) that may require occasional access to the site (e.g., large move-in trucks that need occasional access to both residential and commercial developments), the DLOP shall include procedures as to the location of on-street accommodation, time of day

restrictions for accommodating larger vehicles, and procedures to reserve available curbside space on adjacent streets from the SFMTA.

- *Trash/Recycling/Compost Collection Design and Management.* When designs for buildings are being developed, the project sponsor or representative shall meet with the appropriate representative from Recology (or other trash collection firm) to determine the location and type of trash/recycling/compost bins, frequency of collections, and procedures for collection activities, including the location of Recology trucks during collection. The location of the trash/recycling/compost storage room(s) for each building shall be indicated on the building plans prior to submittal of plans to the Building Department. Procedures for collection shall ensure that the collection bins are not placed within any sidewalk, bicycle facility, parking lane or travel lane adjacent to the project site at any time.

Implementation of **Mitigation Measure M-TR-6a, Driveway and Loading Operations Plan**, would include loading space design review and implementation of operational procedures to reduce the potential for conflicts between subsequent development project-generated loading/unloading activities and pedestrians, bicyclists, transit and autos, and would therefore not result in any secondary transportation-related impacts.

Mitigation Measure M-TR-6b: Accommodation of On-Street Commercial Loading Spaces and Passenger Loading/Unloading Zones. The SFMTA shall develop detailed plans for each segment of the proposed street network changes that identify existing on-street commercial loading spaces and passenger loading/unloading zones, and then identify how demand within the existing loading facilities could be accommodated with the proposed street network changes. The detailed design shall also consider on-street loading supply needs for new development, as well as driveway access to loading facilities within existing and future buildings along the affected segments. The detailed design for each segment shall be prepared within a reasonable time frame of physical implementation to ensure that future land use conditions are reflected.

As part of detailed design for each affected street the SFMTA shall conduct the following:

1. Document the existing commercial loading spaces and passenger loading/unloading zones at the time of detailed design.
2. Conduct loading demand surveys/observation at appropriate times of day for each type of loading activity, to determine the actual demand associated with the on-street spaces and the need to replace or augment the on-street commercial loading spaces.
3. Identify replacement commercial loading spaces and passenger loading/unloading spaces. Commercial loading spaces should be prioritized over parking spaces, and, to the extent feasible, the replacement commercial loading spaces shall be of similar length on the same block and side of the street. Where commercial loading spaces would be permanently removed, install new commercial loading spaces within 250 feet on adjacent side streets if feasible.
4. At each location where passenger loading/unloading zones would be eliminated, contact the permit holder to determine adequacy of alternate locations and/or need for the passenger loading/unloading space. In some locations, such as schools and hotels, passenger loading/unloading activities could be accommodated within commercial loading spaces, with time of day restrictions.

5. Conduct business surveys and review detailed plans with merchant associations or other local stakeholders to determine need for commercial loading spaces.

6. Develop and implement a public education campaign regarding the street network changes, reduction or elimination of on-street parking spaces, location of replacement commercial loading spaces, and any time-of-day restrictions. On streets where on-street parking would be completely eliminated, provide information regarding commercial loading space supply on adjacent streets. In addition, provide information regarding *California Vehicle Code* §22500 and *San Francisco Transportation Code* §7.2.70 that loading activities (either truck or passenger loading/unloading) should not occur while stopped in any crosswalk, bicycle lane or travel lane.

The SFMTA and the Planning Department shall develop protocols for ongoing assessment of commercial loading needs on the affected streets, and for review of new development projects along the affected street segments to identify needed changes to the street network design (e.g., when a new driveway to a development site is required), or need for additional on-street commercial loading spaces.

In addition, the SFMTA shall explore the potential to develop and implement an off-hour delivery program to shift delivery windows for commercial deliveries to times when conflicts are less likely to occur. Such a program could be implemented as a pilot project, similar to the pilot project conducted in New York City in 2009–2010.[225] Most commercial loading spaces in Central SoMa are metered, and the off-hour delivery program can include pricing to reduce the amount of time vehicles park, stand or stop at the curb, so that spaces turn over for more users, and double parking is minimized.

Implementation of **Mitigation Measure M-TR-6b, Accommodation of On-Street Commercial Loading Spaces and Passenger Loading/Unloading Zones**, would require that SFMTA prepare detailed designs of the street network changes to accommodate existing and new loading demand in such a way that does not result in significant conflicts with transit, bicyclists, pedestrians or other vehicles, or result in potentially hazardous conditions, and would therefore not result in any secondary transportation-related impacts.

Significance after Mitigation: Even with these mitigation measures, this impact would remain ***significant and unavoidable with mitigation***.

Parking Impacts

Impact TR-7: Development under the Plan, including the proposed open space improvements and the street network changes, would not result in a substantial parking deficit that would create hazardous conditions or significant delays affecting transit, bicycles, or pedestrians, and where particular characteristics of the Plan demonstrably render use of other modes infeasible. (Less than Significant)

Parking conditions are not static, as parking supply and demand vary from day to day, from day to night, from month to month, etc. Hence, the availability of parking spaces (or lack thereof) is not a permanent physical condition, but changes over time as people change their modes and patterns of travel. While parking conditions change over time, a substantial deficit in parking caused by a project that creates hazardous

[225] New York City Off-Hour Delivery Program. Available at http://www.nyc.gov/html/dot/html/motorist/offhoursdelivery.shtml, accessed August 16, 2016.

conditions or significant delays to traffic, transit, bicycles or pedestrians could adversely affect the physical environment. Whether a deficit in parking creates such conditions will depend on the magnitude of the shortfall and the ability of drivers to change travel patterns or switch to other travel modes. If a substantial deficit in parking caused by a project creates hazardous conditions or significant delays in travel, such a condition also could result in secondary physical environmental impacts (e.g., air quality or noise impacts cause by congestion), depending on the project and it's setting.

The absence of a ready supply of parking spaces, combined with available alternatives to auto travel (e.g., transit service, taxis, bicycles or travel by foot) and a relatively dense pattern of urban development, induces many drivers to seek and find alternative parking facilities, shift to other modes of travel, or change their overall travel habits. Any such resulting shifts to transit service or other modes (walking and biking) would be in keeping with the City's *Transit First* Policy and numerous *San Francisco General Plan* Polices, including those in the Transportation Element. The City's *Transit First* Policy, established in the City's Charter Article 8A, Section 8A.115 provides that "parking policies for areas well served by public transit shall be designed to encourage travel by public transportation and alternative transportation."

Development under the Plan would generate parking demand, and the Plan's street network changes would result in part-time (through tow-away zones) and permanent on-street parking changes on streets within the transportation study area. In evaluating whether a parking deficit is substantial, and thus could result in hazardous conditions or delays, the following was considered: if the parking demand resulting from elimination of on-street spaces could not be met either with other on-street spaces or existing off-street parking facilities within 1/2–mile of the Plan Area; and whether the Plan Area is adequately served by other modes of transportation (i.e., taxis, TNC vehicles [e.g., Uber, Lyft, etc.], Muni, regional transit providers, and bicycle and pedestrian facilities). The analysis also considers whether the potential loss of parking, or shortfall in parking, is temporary or intermittent. Generally, if the parking loss is not substantial, it is anticipated that it would not create hazardous conditions or significant delays to other modes. In situations where a parking deficit is considered substantial, potential hazardous conditions related to the parking loss were considered. The potential hazards or delays considered included: whether the parking loss would lead to additional traffic circling in the area that could result in vehicles double parking in a bicycle lane or in mixed-flow/transit-only lanes, particularly on streets with one-lane roadway in each direction; whether stopped vehicles would impair visibility on narrow streets (e.g., the midblock alleys), block sidewalks or crosswalks, or block access to fire hydrants.

The transportation analysis accounts for potential secondary effects, such as cars circling and looking for a parking space in areas of limited parking supply, by assuming that all drivers would attempt to find parking at or near their destination and then seek parking farther away if convenient parking is unavailable. It is unlikely that the additional traffic circling in the area would lead to substantially increased VMT per capita to the point where significant impacts could occur, given that the VMT per capita in the area is far below the Bay Area regional average (discussed further in "VMT Analysis" section above. The secondary effects of drivers searching for parking is typically offset by a reduction in vehicle trips due to others who are aware of constrained parking conditions in a given area, and thus choose to reach their destination by other modes (i.e., walking, biking, transit, taxi). If this occurs, any secondary environmental impacts that may result from a shortfall in parking in the vicinity of the proposed project would be minor, and the traffic assignments used in calculating transit delay, as well as in the associated air quality, noise and pedestrian safety analyses, would reasonably address potential secondary effects.

Individual development projects in the Plan Area would be required to comply with the *Planning Code* requirements for parking, including the number of parking spaces, provision of car-share spaces, and the separation of parking costs from housing costs in new residential buildings. The proposed *Planning Code* amendments for the Plan Area would reduce the amount of vehicle parking required as follows: for residential uses, the *Planning Code* would permit up to one vehicle space for each two residential units (i.e., 0.5 spaces per unit), with no potential for additional spaces, for office uses the *Planning Code* would allow one vehicle space for every 3,500 square feet, and for retail uses the *Planning Code* would allow one space for every 1,500 square feet. The amount of parking spaces that would be provided as part of development under the Plan would be 2,750 parking spaces for the estimated 5,500 new residential units, and about 2,700 parking spaces for the 7.4 million square feet of non-residential uses (i.e., office, retail, etc.), for a total supply within the Plan Area about 5,450 vehicle parking spaces. The total supply assumes the maximum allowed per the *Planning Code*, and could be less if development projects provide less than the maximum permitted supply, or no on-site parking spaces.

Residential and non-residential development that could occur under the Plan would generate a parking demand for 21,000 vehicle parking spaces, including a residential demand for 5,600 spaces, and a non-residential demand of 15,400 spaces. As noted above, under the Plan about 5,450 parking spaces would be included as part of new development projects, and therefore, there could be a shortfall in parking spaces provided relative to the projected demand (i.e., a shortfall of about 15,550 parking spaces). This shortfall could be greater if development projects provide less than the maximum permitted parking spaces. It is anticipated that a portion of the shortfall would be accommodated on-street, particularly the overnight residential parking demand, and a portion of the shortfall could potentially be accommodated off-street in public parking facilities serving the daytime non-residential parking demand (e.g., the SFMTA Fifth & Mission/Yerba Buena Garage). As a result of the parking shortfall, some drivers may circle around the neighborhood in search of parking, which would increase traffic congestion on the local street network. The expectation is also that some drivers, frustrated by the shortage of available parking, would shift to public transit or other modes (such as walking or bicycling), while others would search out alternative parking within reasonable distance of their destination. The shift to other modes such as walking or transit could exacerbate identified impacts of development under the Plan on transit (see Impact TR-3 above) and pedestrian facilities (see Impact TR-4 above). Because the additional walking and transit trips as a result of the mode shift would be distributed among numerous transit routes and on streets throughout the Plan Area, it is not anticipated that the increase in trips would be such that new or noticeably more severe significant impacts would occur. The potential for such mode shift to occur to a substantial degree is speculative because current literature does not document which travel modes people would choose in response to the parking shortfall.

The Plan's street network changes would include permanent and peak period removal of on-street parking spaces:

- On Harrison and Bryant Streets between Second and Sixth Streets, on-street parking would be permitted only during off-peak periods.
- On Brannan Street between Second and Sixth Streets, on-street parking would be permitted on one side of the street in midblock locations.
- On Third Street between King and Market Streets, and on Fourth Street between Market and Harrison Streets, all on-street parking would be removed.

These street network changes would result in permanent removal of about 200 on-street standard parking spaces and access to about 400 spaces would be restricted during peak periods. A portion of the on-street

parking spaces that are proposed for permanent removal are currently not available for parking for some portion of the day due to existing tow-away regulations during the a.m. and/or the p.m. peak periods (e.g., on the west curb of Third Street between Howard and Market Streets, on the west curb of Fourth Street between Howard and Clementina Streets).

In the downtown area, there are a number of large public parking garages that currently have capacity to accommodate additional demand, depending on time of day, as well as numerous garages associated with office buildings that are open to the general public. For example, the Fifth & Mission/Yerba Buena Garage contains 2,585 parking spaces, and is about 52 percent occupied during the weekday midday. Other public parking garages in the area include the Moscone Garage (752 parking spaces and about 70 percent occupied during the midday), the SFMOMA Garage (410 parking spaces and about 80 percent occupied during the midday), and the Jessie Square Garage (372 parking spaces and about 75 percent occupied during the midday). Most of these public parking garages currently have availability throughout the day. Other larger off-street parking garages further from the transportation study area are located north of Market Street in the Union Square area, and include the Ellis O'Farrell Garage (800 parking spaces), the Union Square Garage (800 parking spaces), and the Sutter Stockton Garage (1,650 parking spaces). The SFMTA and the U.S. Department of Transportation are currently evaluating the data collected as part of the SF*park* pilot program (data collection of on-street real-time space availability and rates ended in December 2013). On-street parking management would facilitate short-term parking and reduce the around-the-block maneuvers associated with drivers searching for parking. By discouraging long-term on-street parking, implementation of SF*park* could support a shift in travel from auto to public transit or other modes. In addition, the SFMTA is currently evaluating the use of on-street parking spaces as carshare spaces.

Overall, the parking loss as a result of the street network changes, in combination with increased parking demand generated by development under the Plan, would be a less-than-significant impact because: both increased parking demand and parking removal would, in most cases be spread out over multiple streets; other on-street or off-street parking would be available; the streets within Central SoMa are well served by public transit and other modes; the proposed street network changes would further improve transit, bicyclist, and pedestrian conditions; and the parking loss would not be expected to create hazardous conditions such as impairing visibility on narrow streets (e.g., the midblock alleys), blocking sidewalks or crosswalks, or blocking access to fire hydrants. The shift to other modes such as walking or transit could exacerbate identified impacts of development under the Plan on transit (see Impact TR-3 above) and pedestrians (see Impact TR-4 above), though not to the extent where new or noticeably more severe significant impacts would occur. Thus, for the reasons described above, the impacts of development under the Plan and the street network changes on parking would be ***less than significant***.

Discussion of potential hazards such as double-parking, illegal use of sidewalks and other public space that could result from removal of existing on-street commercial loading spaces and passenger loading/unloading zones is provided in Impact TR-6 above.

Its noted that implementation of **Mitigation Measure M-NO-1a, TDM Plan for Development Projects** (in Section IV.E, Noise and Vibration), sustainable modes would be encouraged and the use of single-occupant vehicles would be discouraged, which would further reduce the parking demand generated by development projects, although it is not required to mitigate the ***less-than-significant*** parking impact in Impact TR-7.

Mitigation: None required.

Emergency Vehicle Access Impacts

Impact TR-8: Development under the Plan, including the proposed open space improvements and street network changes, could result in significant impacts on emergency vehicle access. (Less than Significant with Mitigation)

Development under the Plan, in combination with the proposed street network changes, has the potential to impact emergency vehicle access primarily by creating conditions that would substantially affect the ability of drivers to yield the right-of-way to emergency vehicles, or preclude the ability of emergency vehicles to access streets within the transportation study area. This assessment assumes that all of the proposed street network changes would be implemented (i.e., on Third, Fourth, Folsom, Howard, Harrison, Bryant, and Brannan Streets), and therefore represents the maximum possible impacts that could result from implementation of the Plan. The discussion below first provides a description of how subsequent projects are reviewed, how the proposed street network changes would be designed, and their potential effects on emergency vehicle access. An assessment of the combined effect of development under the Plan in combination with the proposed street network changes is also provided below.

Plans for development projects are required to undergo multidepartmental City review to ensure that proposed vehicular access and streetscape improvements do not impede emergency vehicle access to the proposed project's site or surrounding areas. The increases in vehicle, pedestrian and bicycle travel associated with new development projects would not substantially affect emergency vehicle access, however, the additional vehicles could increase delays at nearby intersections. Where intersection delay would not increase considerably there would be no significant impacts on emergency vehicle access. Where intersection delay would increase considerably, emergency vehicle access would not be significantly impacted because California law requires that drivers yield the right-of-way to emergency vehicles and remain stopped until the emergency vehicle passes. Generally multilane arterial roadways, such as those in Central SoMa, allow the emergency vehicle to travel at higher speeds and allow other traffic to maneuver out of the path of the emergency vehicle. On streets where transit-only lanes are currently provided (e.g., Third Street, Mission Street), emergency vehicles would be able to use the existing transit-only lane.

The proposed street network changes would be required to undergo more detailed design and review. As part of that work, there is a preliminary review conducted by SFMTA's Transportation Advisory Staff Committee (TASC) and the San Francisco Fire Department, along with other City agencies. For example, the TASC reviews the details of proposals that modify sidewalks (e.g., the proposed sidewalk widening) as part of the 'sidewalk legislation process.' In accordance with Public Works' Order No. 172,512, the Board of Supervisors must approve changes to the city's sidewalks. As part of this approval, public agencies and private contractors submit necessary plans and information to the Bureau of Street Use and Mapping (BSM), a division of the San Francisco Public Works, for review and approval. The BSM refers the plans to many City agencies, including the Department of Public Health, Fire Department, Port, SFPUC as well as outside utility companies, including PG&E and a number of telecommunications infrastructure providers. Similarly, the detailed design of the transit-only lane and bicycle lane improvements would also be reviewed by TASC. As discussed above, cycle tracks would be designed consistent with NACTO and FHWA standards that would ensure that

adequate sight distances and turning radii are provided. Thus, the TASC review ensures that any safety issues, including emergency vehicle access, are resolved prior to permit issuance.

In general, implementation of the Plan's proposed street network changes would not introduce unusual design features, nor would the Plan change the street network to hinder or preclude emergency vehicle access. As noted above, the designs of protected transit-only lanes and cycle tracks would be reviewed by the San Francisco Fire Department as part of the TASC review to make sure that they meet all applicable standards and to ensure that emergency vehicle access at specific locations is maintained. Emergency vehicles would be able to travel within the transit-only lanes, which would have fewer vehicles than the mixed-flow travel lanes. If needed, fire and rescue vehicles would be able to mount the raised separation between the travel lanes and the protected cycle track or transit-only lane as they travel along the street to access their destination. A fire truck would also be able to access the two-way cycle track, which would be wide enough to accommodate a fire truck. Emergency vehicle access would not be affected on streets where cycle tracks and transit-only lanes are proposed.

The conversion of one-way to two-way streets, as proposed for Howard and Folsom Streets, could generally improve emergency vehicle response times by increasing the number of potential access routes to buildings within the Plan Area. Conversion to two-way traffic on Howard and Folsom Streets would decrease travel distances for emergency response vehicles (San Francisco Fire Department Station 1 is located on Folsom Street between Fifth and Sixth Streets—Figure IV.D-1, Transportation Study Area, p. IV.D-2, presents the locations of fire stations within and in the vicinity of the Central SoMa transportation study area), but increased congestion due to mixed-flow travel lane reductions associated with the street network changes and increased vehicle trips generated by development under the Plan could increase response times by slowing emergency vehicles.

The Plan's proposed street network changes would result in fewer mixed-flow travel lanes on a number of streets, which would reduce the available capacity for vehicles and thereby increase the number of vehicles in the remaining travel lanes, reduce the roadway width available for drivers to pull over to allow emergency vehicles to pass (e.g., due to raised buffers associated with cycle tracks), and result in additional vehicle delay on these streets; however, the Plan's street network changes would not cause any complete permanent roadway closures or disruption to emergency vehicle access (the exception would be the closure of Essex Street which extends for one block between Folsom and Harrison Streets). While California law requires that drivers yield the right-of-way to emergency vehicles and remain stopped until the emergency vehicle passes, and emergency vehicles are equipped with flashing lights and sirens to facilitate movement through congested streets and have the right-of-way, and emergency personnel are typically familiar with the best response routes, it is likely that the increased number of vehicles in the remaining travel lanes and increased levels of traffic congestion would occasionally impede emergency vehicle access in the Plan Area during periods of peak traffic volumes. Therefore, the proposed Plan street network changes, in combination with increases in vehicle traffic generated by development under the Plan, would result in a ***significant*** impact on emergency vehicle access.

Implementation of **Mitigation Measure M-TR-8, Emergency Vehicle Access Consultation**, would ensure that the final design of each street network project would adequately allow emergency vehicles to access streets within the transportation study area considering the location of the proposed street network changes, the number of mixed-flow travel lanes available to general traffic, and raised buffers between the mixed-flow travel lanes and transit-only lanes and/or cycle tracks. It would also ensure that private vehicles would not be precluded from yielding the right-of-way to approaching emergency vehicles. This measure would not result in secondary transportation-related impacts. Implementation of **Mitigation Measure M-TR-8, Emergency**

Vehicle Access Consultation, would ensure that emergency vehicle access would not be precluded on streets affected by the proposed street network changes and would reduce the potential for delays to emergency vehicles within the Central SoMa area; therefore, the Plan's impacts on emergency vehicle access would be ***less than significant with mitigation***.

Mitigation Measures

Mitigation Measure M-TR-8: Emergency Vehicle Access Consultation. During the design phase of each street network project, SFMTA shall consult with emergency service providers, including the San Francisco Fire Department and the San Francisco Police Department. Through the consultation process, the street network design shall be modified as needed to maintain emergency vehicle access. SFMTA shall identify design modifications through this process, as needed to meet the following performance criteria:

- No physical barriers shall be introduced that would preclude emergency vehicle access.

Street design modifications should achieve the goals of the project without precluding emergency vehicle access. Design modifications selected by SFMTA, as needed to meet the performance criteria, shall be incorporated into the final design of each street network project and could include, but shall not be limited to: mountable concrete buffers, mountable curbs and corner or sidewalk bulbs, modification of corner or sidewalk bulbs and curb locations to accommodate turning emergency vehicles, and emergency vehicle signal priority. Any subsequent changes to the streetscape designs shall be subject to a similar consultation process.

Significance after Mitigation: Implementation of **Mitigation Measure M-TR-8** would ensure that the significant emergency vehicle access impact would be reduced to a ***less-than-significant*** level.

Construction-Related Transportation Impacts

Impact TR-9: Construction activities associated with development under the Plan, including the proposed open space improvements and street network changes, would result in substantial interference with pedestrian, bicycle, or vehicle circulation and accessibility to adjoining areas, and would result in potentially hazardous conditions. (Significant and Unavoidable with Mitigation)

In general, the analysis of construction impacts are specific to individual projects, and include a discussion of temporary roadway and sidewalk closures, relocation of bus stops, effects on roadway circulation due to construction trucks, and the increase in vehicle trips, transit trips and parking demand associated with construction workers. It should be noted that construction-related transportation impacts associated with individual development, open space, or transportation projects are temporary and generally of short-term duration (e.g., typically between two and three years), and are conducted in accordance with City requirements, described below, to ensure that they do not substantially affect transit, pedestrian or bicycle conditions or circulation in the area. To the extent construction of several development projects occurs simultaneously, within close proximity to each other, or at the same time as the proposed street network changes are being implemented, there could be detours and delays to vehicles, including transit, and bicyclists, and construction-related transportation impacts would occur.

Prior to construction, as part of the building permit process, the project sponsor and construction contractor(s) would be required to meet with San Francisco Public Works and SFMTA staff to develop and review truck routing plans for disposal of excavated materials, materials delivery and storage, as well as staging for construction vehicles. The construction contractor would be required to meet the City's Regulations for Working in San Francisco Streets, the Blue Book, including those regarding sidewalk and lane closures, and would meet with SFMTA staff to determine if any special traffic permits would be required.[226] Prior to construction, the project contractor would coordinate with Muni's Street Operations and Special Events Office to coordinate construction activities and avoid impacts to transit operations. In addition to the regulations in the Blue Book, the contractor would be responsible for complying with all city, state, and federal codes, rules, and regulations.

Implementation of transit-only lanes, which would involve demarcation of travel lanes with a solid red paint and a raised separation for the protected transit-only lanes, and implementation of protected cycle tracks would require temporary travel lane closures. Transit-only and bicycle lanes are often striped on weekends or other non-peak weekday times when traffic volumes are lower on the affected roadway. The widening of sidewalks along Howard, Folsom, Harrison, Bryant, Brannan, Third, and Fourth Streets would occur gradually over time, as these streets are redeveloped, and/or funding is available for implementation by the City.

In general, construction-related activities typically occur Monday through Friday, between 6:00 a.m. and 6:00 p.m., with limited construction activities on weekends (on an as-needed basis). Construction staging typically occurs within project sites and from the adjacent sidewalks. These sidewalks along the site frontages are usually closed throughout the construction duration, with temporary pedestrian walkways constructed in the adjacent parking lanes as needed. Temporary travel lane closures are required to be coordinated with the City in order to reduce the impacts on local traffic.

During a project's construction period, temporary and intermittent traffic and transit impacts may result from truck movements to and from project sites. Truck movements during periods of peak traffic flow would have greater potential to create conflicts than truck movements during non-peak hours because of the greater number of vehicles on the streets during the peak hour that would have to maneuver around queued trucks. Temporary parking demand from construction workers' vehicles and impacts on local intersections from construction worker traffic would occur in proportion to the number of construction workers who would use automobiles. Parking of construction workers' vehicles would temporarily increase occupancy levels in off-street parking facilities, either by those vehicles or by vehicles currently parking in on-street spaces that would be displaced by construction workers vehicles.

Sidewalk and travel lane closures during construction are required to be coordinated with the City in order to minimize the impacts on vehicles, including transit, bicyclists, and pedestrians. In general, travel lane and sidewalk closures are subject to review and approval by the SFMTA's Transportation Advisory Staff Committee (TASC) for permanent travel lane and sidewalk closures, and the Interdepartmental Staff Committee on Traffic and Transportation (ISCOTT) for temporary sidewalk and travel lane closures, including temporary construction closures. Both TASC and ISCOTT are interdepartmental committees that include representatives from Public Works, SFMTA, the Police Department, the Fire Department, and the Planning Department.

[226] San Francisco Municipal Transportation Agency (SFMTA), *Parking and Traffic Regulations for Working in San Francisco Streets (The Blue Book)*, 8th Edition. Available at http://www.sfmta.com/services/streets-sidewalks/construction-regulations, accessed September 1, 2016.

As noted above, given the magnitude of projected development in the Plan Area and the transportation and streetscape projects anticipated to occur, and the uncertainty concerning construction schedules, construction activities associated with multiple overlapping projects could result in multiple travel lane closures, high volumes of trucks in the local vicinity, and travel lane and sidewalk closures, which in turn could disrupt or delay transit, pedestrians, or bicyclists, or result in potentially hazardous conditions (e.g., high volumes of trucks turning at intersections). Despite the best efforts of the project sponsors and project construction contractors, it is possible that simultaneous construction subsequent development projects, street network changes, and/or open space improvements could result in significant disruptions to traffic, transit, pedestrian, and bicycle circulation, even if each individual project alone would not have significant impacts. In some instances, depending on construction activities, the overlap of two or more construction projects may not result in significant impacts. However, for conservative purposes, given the anticipated concurrent construction of multiple buildings that could be under construction in the Plan Area, some in close proximity to each other, the expected intensity (i.e., the projected number of truck trips) and duration, and likely impacts to transit, bicyclists, and pedestrians, construction-related transportation impacts would be considered a ***significant impact***.

Mitigation Measure M-TR-9, Construction Management Plan and Construction Coordination, (described below) would require the project sponsor, or its contractor(s) to consult with various City departments such as SFMTA and Public Works through ISCOTT, and other interdepartmental meetings, as needed, to develop a Construction Management Plan, and, if required, an additional Coordinated Construction Management Plan that would address construction-related vehicle routing, detours, and transit, bicycle, and pedestrian movements adjacent to the construction area for the duration of construction overlap. Key coordination meetings would be held jointly between project sponsors and contractors of other projects for which the City departments determine impacts could overlap. Implementation of **Mitigation Measure M-TR-9** would minimize, but would not eliminate, the significant impacts related to conflicts between construction activities and pedestrians, transit, bicyclists, and autos. Other measures, such as imposing sequential (i.e., non-overlapping) construction schedules for all projects in the vicinity, were considered but deemed infeasible due to potentially lengthy delays in implementation of subsequent projects. Therefore, construction-related transportation impacts would remain ***significant and unavoidable with mitigation***.

Mitigation Measures

Mitigation Measure M-TR-9: Construction Management Plan and Construction Coordination.

Construction Management Plan. For projects within the Plan Area, the project sponsor shall develop and, upon review and approval by the SFMTA and Public Works, implement a Construction Management Plan, addressing transportation-related circulation, access, staging and hours of delivery. The Construction Management Plan would disseminate appropriate information to contractors and affected agencies with respect to coordinating construction activities to minimize overall disruption and ensure that overall circulation in the project area is maintained to the extent possible, with particular focus on ensuring transit, pedestrian, and bicycle connectivity. The Construction Management Plan would supplement and expand, rather than modify or supersede, and manual, regulations, or provisions set forth by the SFMTA, Public Works, or other City departments and agencies, and the California Department of Transportation.

If construction of the proposed project is determined to overlap with nearby adjacent project(s) as to result in transportation-related impacts, the project sponsor or its contractor(s) shall consult with

various City departments such as the SFMTA and Public Works through ISCOTT, and other interdepartmental meetings as deemed necessary by the SFMTA, Public Works, and the Planning Department, to develop a Coordinated Construction Management Plan. The Coordinated Construction Management Plan that shall address construction-related vehicle routing, detours, and maintaining transit, bicycle, vehicle, and pedestrian movements in the vicinity of the construction area for the duration of the construction period overlap. Key coordination meetings shall be held jointly between project sponsors and contractors of other projects for which the City departments determine construction impacts could overlap.

The Construction Management Plan and, if required, the Coordinated Construction Management Plan, shall include, but not be limited to, the following:

- *Restricted Construction Truck Access Hours*—Limit construction truck movements to the hours between 9:00 a.m. and 4:00 p.m., or other times if approved by the SFMTA, to minimize disruption to vehicular traffic, including transit during the a.m. and p.m. peak periods.
- *Construction Truck Routing Plans*—Identify optimal truck routes between the regional facilities and the project site, taking into consideration truck routes of other development projects and any construction activities affecting the roadway network.
- *Coordination of Temporary Lane and Sidewalk Closures*—The project sponsor shall coordinate travel lane closures with other projects requesting concurrent lane and sidewalk closures through the ISCOTT and interdepartmental meetings process above, to minimize the extent and duration of requested lane and sidewalk closures. Travel lane closures shall be minimized especially along transit and bicycle routes, so as to limit the impacts to transit service and bicycle circulation and safety.
- *Maintenance of Transit, Vehicle, Bicycle, and Pedestrian Access*—The project sponsor/construction contractor(s) shall meet with Public Works, SFMTA, the Fire Department, Muni Operations and other City agencies to coordinate feasible measures to include in the Coordinated Construction Management Plan to maintain access for transit, vehicles, bicycles and pedestrians. This shall include an assessment of the need for temporary transit stop relocations or other measures to reduce potential traffic, bicycle, and transit disruption and pedestrian circulation effects during construction of the project.
- *Carpool, Bicycle, Walk and Transit Access for Construction Workers*—The construction contractor shall include methods to encourage carpooling, bicycling, walk and transit access to the project site by construction workers (such as providing transit subsidies to construction workers, providing secure bicycle parking spaces, participating in free-to-employee ride matching program from www.511.org, participating in emergency ride home program through the City of San Francisco (www.sferh.org), and providing transit information to construction workers).
- *Construction Worker Parking Plan*—The location of construction worker parking shall be identified as well as the person(s) responsible for monitoring the implementation of the proposed parking plan. The use of on-street parking to accommodate construction worker parking shall be discouraged. All construction bid documents shall include a requirement for the construction contractor to identify the proposed location of construction worker parking. If on-site, the location, number of parking spaces, and area where vehicles would enter and exit the site shall be required. If off-site parking is proposed to accommodate construction workers, the location of the off-site facility, number of parking spaces retained, and description of how workers would travel between off-site facility and project site shall be required.

- *Project Construction Updates for Adjacent Businesses and Residents*—To minimize construction impacts on access for nearby institutions and businesses, the project sponsor shall provide nearby residences and adjacent businesses with regularly-updated information regarding project construction, including construction activities, peak construction vehicle activities (e.g., concrete pours), travel lane closures, and lane closures. At regular intervals to be defined in the Construction Management Plan and, if necessary, in the Coordinated Construction Management Plan, a regular email notice shall be distributed by the project sponsor that shall provide current construction information of interest to neighbors, as well as contact information for specific construction inquiries or concerns.

Significance after Mitigation: Even with implementation of these mitigation measures, this impact would remain ***significant and unavoidable with mitigation***.

IV.D.5 Cumulative Impacts

The geographic context for the analysis of cumulative transportation impacts includes the sidewalks and roadways within the Plan Area. The discussion of cumulative transportation impacts assesses the degree to which the proposed project would affect the transportation network in conjunction with overall citywide growth and other reasonably foreseeable future development and transportation projects within Central SoMa and vicinity. See the "Overview" section at the beginning of Chapter IV, Environmental Setting, Impacts, and Mitigation Measures, for a more detailed description of cumulative projects. As described in the Section Travel Demand Methodology and Results, above, future 2040 cumulative vehicle, transit, and pedestrian forecasts were estimated based on cumulative development and growth identified by the Transportation Authority's SF-CHAMP travel demand model. In addition to the reasonably foreseeable future development projects, the cumulative analysis includes the following present and reasonably foreseeable transportation network projects.

Central Subway Project. The Central Subway Project is the second phase of the Third Street light rail line (i.e., T Third), which opened in 2007. Construction is currently underway, and the Central Subway will extend the T Third line northward from its current terminus at Fourth and King Streets to a surface station south of Bryant Street and go underground at a portal under I-80. From there it will continue north to stations at Moscone Center (i.e., on the west side of Fourth Street between Folsom and Clementina Streets), Union Square—where it will provide passenger connections to the Powell Street Station and BART—and in Chinatown, where the line will terminate at Stockton and Clay Streets.

Construction associated with utility relocation has been completed. Work is underway on the 1.5 miles of twin-bore tunnels underneath Fourth Street and Stockton Street, from I-80 to North Beach. Major components of the tunnel project include construction of the Tunnel Boring Machine launch box and cross passages; construction of an extraction shaft and portal; and monitoring and protection of existing utilities, buildings, and BART tunnels. Construction of the Central Subway is scheduled to be completed in 2017, and revenue service is scheduled for 2019.

Second Street Improvement Project. San Francisco Public Works, SFMTA, and the Planning Department have been working with community members on design improvements on Second Street between Market and King Streets, consistent with the *San Francisco Bicycle Plan*. Bicycle Route 11 runs on Second Street, and in accordance with the *San Francisco Bicycle Plan*, the project would provide separated bicycle lanes along the entire length of Second Street, as well as a pedestrian refuge space at a number of locations. The project also includes sewer and

water main upgrades, roadway resurfacing, concrete curb reconstruction, the installation of ADA-compliant curb ramps, and upgrades to the traffic signal system. The preferred concept would reduce the number of travel lanes from two to one travel lane in each direction, limit general parking, and relocate some commercial loading spaces and passenger loading/unloading zones. Construction of this project was initiated in 2016.

Vision Zero. The City adopted Vision Zero in 2014. Vision Zero SF is a road safety policy focused on eliminating traffic deaths in San Francisco by 2024. SFMTA, in collaboration with other City agencies prioritized over 24 street engineering projects and improvements on high injury corridors at more than 170 locations (identified through the WalkFirst pedestrian safety planning process), and bicycle-related safety improvement projects. Specific projects implemented or proposed include: a buffered bicycle lane on Howard Street, painted pedestrian zones, continental crosswalks, signal retiming, Safer Market Streets Project, Jessie Street Signalization Project, and the Howard Street Signal Project.[227]

San Francisco Bicycle Plan. The *San Francisco Bicycle Plan* includes planned short-term improvements to Bicycle Route 19 on Fifth Street. Fifth Street improvements include the construction of Class II bicycle lanes and Class III bicycle routes in both directions between Market and Townsend Streets. Similar to the ongoing Second Street Improvement Project described above, Bicycle Plan improvements on Fifth Street would reduce the number of travel lanes and prohibit northbound and southbound left turns, as well as implement other minor changes to lane geometry and on-street parking.

Transit Center District Plan. Adopted in 2012, the Transit Center District Plan (TCDP) builds on the City's 1985 Downtown Plan to create new land use, urban form, building design, and public realm improvements in and around the new Transbay Transit Center that is currently under construction. The TCDP increases the zoned capacity of the area, roughly bounded by Steuart Street to the east, Folsom Street to the south, Annie Street/Kaplan Lane (just east of Third Street) to the west, and Market Street to the north. In rezoning, the TCDP includes changes to the transportation network, including conversions of one-way streets to two-way traffic (i.e., Howard and Folsom Streets), reductions in travel lanes, provision of new transit-only lanes, sidewalk widening, bulb-out installations, creation of new multi-use paths, and other improvements.

Muni Forward. Muni Forward anticipates changing routes within the transportation study area, as described above under Local Muni Service on p. IV.D-4. Year 2040 cumulative analysis assumes changes to the capacity of the lines as identified by route changes and headway changes indicated within the recommended Muni Forward improvements.

Better Market Street. Public Works, in coordination with the San Francisco Planning Department and the SFMTA proposes to redesign and provide various transportation and streetscape improvements to the 2.2-mile segment of Market Street between Octavia Boulevard and The Embarcadero, and potentially to the 2.3-mile segment of Mission Street between Valencia Street and The Embarcadero, as well as Valencia Street between McCoppin and Market Streets, and 10th Street between Market and Mission Streets. Better Market Street project elements consist of both transportation and streetscape improvements, including changes to

[227] Since publication of the Notice of Preparation (April 24, 2013), the SFMTA has recently proposed and approved (November 15, 2016) three additional Vision Zero projects outside the Central SoMa Plan Area: Seventh Street, Eighth Street, and Turk Street. Based on the analyses conducted for environmental review for each of these three projects, substantial traffic diversion would not be anticipated from implementation of these projects. Therefore, it is not anticipated that these projects would alter the conclusions of the cumulative impact analysis presented below.

roadway configuration and private vehicle access; traffic signals; surface transit, including transit-only lanes, stop spacing, service, stop location, stop characteristics and infrastructure; bicycle facilities; pedestrian facilities; streetscapes; commercial and passenger loading; vehicular parking; plazas; and utilities. Design, environmental review, selection of the preferred alternative, and approvals will continue through 2017, and construction of improvements is currently anticipated for completion sometime in 2018.[228]

SFMTA Capital Improvement Program. On July 19, 2016, the SFMTA Board of Directors adopted the Capital Improvement Program (CIP) for Fiscal Years 2017–2021.[229] The CIP designates funding for a variety of transportation improvements, such as transit fleet replacement, communications equipment upgrades, streetscape projects, taxi programs, and transit optimization. Some of the improvements identified in the CIP are in the advanced design or construction phases, such the Central Subway and Van Ness Bus Rapid Transit projects, and others that are in the early stages of planning and do not yet have specific physical features identified. Among those in the latter category in the Central SoMa Plan Area are the Fifth Street Bicycle Strategy and the Townsend Street Bicycle Strategy, both of which are anticipated to begin visioning and public outreach processes during the CIP timeframe to identify possible street changes that would improve bicycle safety and access.

Cumulative VMT Impacts

Impact C-TR-1: Development under the Plan, including the proposed open space improvements and the street network changes, in combination with past, present, and reasonably foreseeable development in San Francisco, would not result in significant impacts related to VMT. (Less than Significant)

Development under the Plan (Programmatic Level Analysis). As discussed in Impact TR-1 for existing plus Plan conditions, the TAZs that comprise the Central SoMa Plan Area are located within a Priority Development Area in *Plan Bay Area*, and the Plan does not include development in outlying areas or areas specified as open space or priority conservation areas. Consistency with the SCS goal of reducing VMT per capita by 10 percent compared to year 2005 levels by the year 2040 is, by its very nature, a cumulative analysis. As shown above in Table IV.D-5, Average Daily VMT per Capita, Plan Bay Area Data, 2005 Baseline and 2040 (with Central SoMa Plan) Conditions, p. IV.D-37, under 2040 cumulative conditions, the Plan Area is expected to attain the *Plan Bay Area* goal of reducing VMT per capita for residential uses by more than 10 percent compared to year 2005 levels, both with and without implementation of the Central SoMa Plan. As shown in Table IV.D-5, the average daily VMT per resident within the Central SoMa area would decrease from 2.8 VMT per capita in 2005 to 2.0 VMT per capita in 2040, a 30.7 percent reduction. Thus, development specified in the Plan would lead to a residential VMT per capita reduction that would be greater than the SCS reduction goal. Thus, cumulative impacts related to VMT would be ***less than significant***.

Street Network Changes (Project-Level Analysis). As discussed in Impact TR-1 for existing plus Plan conditions, the transportation features of the proposed Plan fit within the general types of projects identified by OPR in the "Approach to Analysis" section, beginning on p. IV.D-25, that would not substantially induce

[228] Better Market Street Project information available at http://www.bettermarketstreetsf.org/about-common-questions.html, accessed February 4, 2015.
[229] San Francisco Municipal Transportation Agency, *Capital Improvement Program Fiscal Year 2017–2021.* Adopted July, 19, 2016 by SFMTA Board of Directors Resolution No. 16-097. Available at https://www.sfmta.com/sites/default/files/reports/2016/SFMTA%20FY%202017-2021%20CIP.pdf, accessed November 21, 2016.

automobile travel. The reasonably foreseeable cumulative projects listed above consist of safety improvements, conversion of mixed-flow travel lanes to transit-only lanes and cycle tracks, installation of new traffic control devices including signalized midblock pedestrian crossings, signal timing optimization, removal of on-street parking, removal and modification of on-street commercial loading regulations, and creation of new transit services. These cumulative projects also fit within the general types of projects determined by OPR to not substantially induce automobile travel. Therefore, the Central SoMa street network changes, in conjunction with other reasonably foreseeable projects, would not induce automobile travel, and therefore, cumulative impacts related to increases in automobile travel would be ***less than significant***.

Future Project-Level Analysis of Subsequent Development Projects. As discussed in Impact TR-1 for existing plus Plan conditions, the majority of subsequent development projects under the Plan would likely consist of a variety of mixed-use office, residential, hotel, retail, PDR (production, distribution, and repair), and similar uses. Table IV.D-7, Average Daily VMT per Capita for Central SoMa Plan Area TAZs by Land Use, Existing (2012) and 2040 Cumulative Conditions, p. IV.D-40, presents the 2040 cumulative daily average VMT per capita for the TAZs that comprise the Central SoMa Plan Area. These VMT per capita projections were calculated using SF-CHAMP, which includes the transportation network changes that are reasonably foreseeable transportation projects included in the latest adopted Regional Transportation Plan, San Francisco Transportation Plan and/or are actively undergoing environmental review or is anticipated to take undertake environmental in the near future because sufficient project definition has been established.[230] The projected 2040 cumulative average daily VMT per capita for residential and hotel uses is projected to range between 1.5 to 2.5 for the TAZs that comprise the Central SoMa Plan Area, which is 85 to 91 percent below the 2040 cumulative regional average daily VMT per capita of 16.1 for residential and hotel uses. The projected 2040 cumulative daily average VMT per capita for the Central SoMa TAZs for office and PDR uses is projected to range between 6.1 and 7.4, which is 56 to 64 percent below the 2040 cumulative regional average daily VMT per capita of 17.0 for office and PDR uses. The projected 2040 cumulative daily average VMT per capita for the Central SoMa TAZs for retail uses is projected to range between 7.1 and 9.7, which is 34 to 51 percent below the 2040 cumulative regional average daily VMT per capita of 14.6 for retail uses. Because the 2040 cumulative VMT per capita in all of the Central SoMa Plan Area TAZs would be substantially below the Bay Area regional average (i.e., between 34 and 91 percent, as noted above), it is anticipated that most subsequent mixed-use, office, residential, hotel, retail, or PDR projects pursuant to the Plan would not result in cumulative VMT impacts. Furthermore, as noted in Impact TR-1, all parcels within the Central SoMa Plan Area meet the Proximity to Transit Stations screening criterion (provided such projects also meet the floor area ratio and parking requirements of this screening criterion), which also indicates that subsequent projects in the Plan Area would not cause substantial additional VMT. This determination would be confirmed through project level environmental review at the time when subsequent projects are proposed and considered for approval through the entitlement review process.

Therefore, for the above reasons, implementation of the Plan, in combination with past, present and reasonably foreseeable development in San Francisco, would result in ***less-than-significant*** cumulative impacts on VMT.

Mitigation: None required.

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[230] Manoj Madhavan and Chris Espiritu, San Francisco Planning Department, Memo to Transportation Team, "CEQA – 2040 SF-CHAMP Modeling Methodology Assumptions", April 25, 2016.

Cumulative Traffic Hazards Impacts

Impact C-TR-2: Development under the Plan, including the proposed open space improvements and the street network changes, in combination with past, present, and reasonably foreseeable development in San Francisco, would not result in significant impacts related to traffic hazards. (Less than Significant)

As described above, a number of cumulative transportation network projects are currently underway, planned, or proposed that would enhance the transportation network in the Central SoMa vicinity, particularly for pedestrians and bicyclists. These include the Vision Zero projects aimed at eliminating traffic deaths by 2024, the Second Street Improvement Project, and Better Market Street project, among others. Cumulative transportation projects, including the Plan's proposed street network changes, would not introduce unusual design features, and these projects would be designed to meet City, NACTO and FHWA standards, as appropriate. Increases in vehicle, pedestrian and bicycle travel associated with cumulative development, including development under the Plan, could result in the potential for increased vehicle-pedestrian and vehicle-bicycle conflicts, even with the cumulative transportation network projects. However, the increased potential for conflicts would not be considered new traffic hazard. For these reasons, implementation of the Plan, in combination with past, present and reasonably foreseeable development in San Francisco, would result in ***less-than-significant*** cumulative impacts related to traffic hazards.

Mitigation: None required.

Cumulative Transit Impacts

Impact C-TR-3: Development under the Plan, including the proposed open space improvements and street network changes, in combination with past, present, and reasonably foreseeable development in San Francisco, would contribute considerably to significant cumulative transit impacts on local and regional transit providers. (Significant and Unavoidable with Mitigation)

Capacity Utilization Analysis

The 2040 cumulative transit analysis accounts for ridership and/or capacity changes associated with Muni Forward, the Central Subway Project (which is scheduled to open in 2019), the new Transbay Transit Center, the electrification of Caltrain, and expanded WETA ferry service. 2040 cumulative No Project and 2040 cumulative plus Plan conditions for the weekday a.m. and p.m. peak hours were developed for the Muni downtown screenlines, the Central SoMa cordons, and for the regional screenlines.

Muni Downtown Screenlines. Table IV.D-18, Muni Downtown Screenlines—Weekday AM and PM Peak Hours—2040 Cumulative Conditions, presents the Muni downtown screenlines for the a.m. and p.m. peak hours for year 2040 cumulative conditions without and with implementation of the Plan. Overall, under 2040 cumulative plus Plan conditions, capacity utilization on the Muni downtown screenlines would be 77.4 percent during the a.m. peak hour and 75.4 percent during the p.m. peak hour, which would be less than Muni's 85 percent capacity utilization standard. However, under year 2040 cumulative plus Plan conditions, the capacity utilization on the Northwest and Southwest screenlines and on eight corridors (i.e., the California,

TABLE IV.D-18 MUNI DOWNTOWN SCREENLINES—WEEKDAY AM AND PM PEAK HOURS—2040 CUMULATIVE CONDITIONS

Muni Screenline and Corridor	2040 Cumulative No Project			2040 Cumulative plus Plan	
	Ridership	Capacity	Capacity Utilization	Ridership	Capacity Utilization
AM PEAK HOUR (INBOUND)					
Northeast					
Kearny/Stockton	6,978	9,473	73.7%	7,406	78.2%
Other Lines	752	1,785	42.1%	763	42.7%
Screenline Total	*7,729*	*11,258*	*68.7%*	*8,168*	*72.6%*
Northwest					
Geary	2,576	3,764	68.4%	2,673	71.0%
California	1,914	2,306	83.0%	1,989	**86.3%**
Sutter/Clement	455	756	60.2%	581	76.9%
Fulton/Hayes	1,906	1,977	**96.4%**	1,965	**99.4%**
Balboa	669	1,008	66.4%	693	68.8%
Screenline Total	*7,519*	*9,810*	*76.6%*	*7,900*	*80.5%*
Southeast					
Third Street	2,356	5,712	41.2%	2,422	42.4%
Mission	3,027	3,008	**100.6%**	3,126	**103.9%**
San Bruno/Bayshore	1,858	2,197	84.6%	**1,959**	**89.2%**
Other lines	1,651	2,027	81.5%	**1,836**	**90.6%**
Screenline Total	*8,892*	*12,944*	*68.7%*	*9,343*	*72.2%*
Southwest					
Subway lines	6,093	7,020	**86.8%**	6,403	**91.2%**
Haight/Noriega	1,312	1,596	82.2%	1,417	**88.8%**
Other lines	171	560	30.5%	175	31.3%
Screenline Total	*7,577*	*9,176*	*82.6%*	***7,996***	***87.1%***
Muni Screenlines Total	*31,718*	*43,187*	*73.4%*	*33,408*	*77.4%*
PM PEAK HOUR (OUTBOUND)					
Northeast					
Kearny/Stockton	6,099	8,329	73.2%	6,304	75.7%
Other lines	1,216	2,065	58.9%	1,238	59.9%
Screenline Total	*7,314*	*10,394*	*70.4%*	*7,541*	*72.6%*
Northwest					
Geary	2,944	3,621	81.3%	2,996	82.7%
California	1,765	2,021	**87.3%**	1,765	**87.3%**
Sutter/Clement	700	756	**92.7%**	**749**	**99.1%**
Fulton/Hayes	1,554	1,877	82.8%	**1,775**	**94.5%**
Balboa	735	974	75.5%	775	79.6%
Screenline Total	*7,699*	*9,248*	*83.2%*	***8,061***	***87.2%***
Southeast					
Third Street	2,179	5,712	38.2%	2,300	40.3%
Mission	2,673	3,008	**88.9%**	2,687	**89.3%**
San Bruno/Bayshore	1,641	2,134	76.9%	**1,823**	**85.4%**
Other lines	1,465	1,927	76.0%	1,605	83.3%
Screenline Total	*7,958*	*12,781*	*62.3%*	*8,415*	*65.8%*
Southwest					
Subway lines	5,435	6,804	79.9%	5,756	84.6%
Haight/Noriega	1,211	1,596	75.9%	1,276	80.0%
Other lines	376	840	44.8%	380	45.2%
Screenline Total	*7,023*	*9,240*	*76.0%*	*7,413*	*80.2%*
Muni Screenlines Total	*29,994*	*41,664*	*72.0%*	*31,430*	*75.4%*

SOURCE: SF Planning Department Memorandum, *Transit Data for Transportation Impact Studies*, May 2015, Fehr & Peers, 2016.

NOTES:

Bold indicates capacity utilization of 85 percent or greater.

Shaded indicates cumulatively considerable contribution from implementation of the Plan.

Sutter/Clement, and Fulton/Hayes corridors of the Northwest screenline, the Mission, San Bruno/Bayshore, and Other Lines corridors of the Southeast screenline, and the Subway Lines and Haight/Noriega corridors of the Southwest screenline), would exceed Muni's 85 percent capacity utilization standard during the a.m. and/or p.m. peak hours. These capacity utilization standard exceedances would constitute ***significant*** cumulative impacts.

Based on the contribution of the Plan ridership to year 2040 cumulative plus Plan conditions for the Muni downtown screenlines and corridors operating at more than the 85 percent capacity utilization standard, the Plan would contribute considerably (i.e., more than five percent contribution to total transit ridership) to cumulative transit impacts at the following Muni downtown screenlines and corridors:

- California corridor of the Northwest screenline (a.m.);
- Sutter/Clement corridor of the Northwest screenline (p.m.);
- Fulton/Hayes corridor of the Northwest screenline (p.m.);
- Northwest screenline (p.m.);
- San Bruno/Bayshore corridor of the Southeast screenline (a.m., p.m.);
- Other Lines corridor of the Southeast screenline (a.m.);
- Haight/Noriega corridor of the Southwest screenline (a.m.); and
- Southwest screenline (a.m.).

The Plan would not contribute considerably (i.e., less than five percent contribution to total transit ridership) to cumulative transit impacts on the California corridor of the Northwest screenline (p.m.), Fulton/Hayes corridor of the Northwest screenline (a.m.), Mission corridor of the Southeast screenline (a.m. and p.m.), and the Subway Lines corridor of the Southwest screenline (a.m.).

As described under Impact TR-3, implementation of **Mitigation Measure M-TR-3a, Transit Enhancements**, particularly transit frequency increases, would reduce the effect of increased ridership on Muni capacity utilization. However, because it is not known whether or how much additional funding would be generated for transit service and whether SFMTA would provide additional service on the impacted routes to fully mitigate project impacts, the Plan's transit impact on capacity utilization on the Muni downtown screenlines under 2040 cumulative conditions is considered ***significant and unavoidable with mitigation***.

Muni Central SoMa Cordons. Table IV.D-19, Central SoMa Cordons—Weekday AM and PM Peak Hours—2040 Cumulative Conditions, presents the Central SoMa Cordons for the a.m. and p.m. peak hours for 2040 cumulative conditions without and with implementation of the Plan. Under 2040 cumulative plus Plan conditions, the capacity utilization on the Northwest and Southwest cordon and on eight corridors (i.e., the Northern, Middle, and Southern corridors of the Northwest cordon, the Middle and Western corridors of the Southeast cordon, and the Northern, Middle, and Southern corridors of the Southwest cordon), would exceed Muni's 85 percent capacity utilization standard during the a.m. and/or p.m. peak hours, indicating ***significant*** 2040 cumulative impacts.

TABLE IV.D-19 CENTRAL SOMA CORDONS—WEEKDAY AM AND PM PEAK HOURS—2040 CUMULATIVE CONDITIONS

Central SoMa Cordon and Corridor	2040 Cumulative No Project			2040 Cumulative plus Plan	
	Ridership	Capacity	Capacity Utilization	Ridership	Capacity Utilization
AM PEAK HOUR (INBOUND)					
Northeast Cordon					
Eastern Corridor	568	1,190	47.7%	574	48.2%
Middle Corridor	2,595	3,761	69.0%	2,742	72.9%
Western Corridor	636	1,004	63.4%	652	65.0%
Cordon Subtotal	*3,799*	*5,955*	*63.8%*	*3,968*	*66.6%*
Northwest Cordon					
Northern Corridor	319	378	84.4%	**385**	**101.9%**
Middle Corridor	2,256	3,076	73.3%	2,323	75.5%
Southern Corridor	1,356	1,540	**88.1%**	1,377	**89.5%**
Cordon Subtotal	*3,931*	*4,994*	*78.7%*	*4,085*	*81.8%*
Southeast Cordon					
Eastern Corridor	3,028	6,594	45.9%	3,139	47.6%
Middle Corridor	1,984	2,449	81.0%	**2,144**	**87.5%**
Western Corridor	2,775	2,773	**100.1%**	2,839	**102.4%**
Cordon Subtotal	*7,787*	*11,816*	*65.9%*	*8,122*	*68.7%*
Southwest Cordon					
Northern Corridor	2,829	3,436	82.3%	**3,046**	**88.6%**
Middle Corridor	2,019	2,282	**88.5%**	2,097	**91.9%**
Southern Corridor	2,264	2,520	**89.8%**	2,378	**94.4%**
Cordon Subtotal	*7,112*	*8,238*	***86.3%***	*7,521*	***91.3%***
SoMa Cordon Total	*22,629*	*31,002*	*73.0%*	*23,696*	*76.4%*
PM PEAK HOUR (OUTBOUND)					
Northeast Cordon					
Eastern Corridor	963	1,470	65.5%	981	66.7%
Middle Corridor	1,951	2,617	74.5%	2,119	81.0%
Western Corridor	681	1,004	67.8%	683	68.0%
Cordon Subtotal	*3,594*	*5,091*	*70.6%*	*3,782*	*74.3%*
Northwest					
Northern Corridor	409	378	**108.2%**	**434**	**114.8%**
Middle Corridor	2,523	2,991	84.4%	**2,544**	**85.1%**
Southern Corridor	1,189	1,440	82.6%	**1,392**	**96.7%**
Cordon Subtotal	*4,121*	*4,809*	***85.7%***	***4,370***	***90.9%***
Southeast Cordon					
Eastern Corridor	2,910	6,594	44.1%	3,088	46.8%
Middle Corridor	1,774	2,386	74.4%	1,963	82.3%
Western Corridor	2,245	2,673	84.0%	2,245	84.0%
Cordon Subtotal	*6,929*	*11,653*	*59.5%*	*7,296*	*62.6%*
Southwest Cordon					
Northern Corridor	2,644	3,220	82.1%	**2,807**	**87.2%**
Middle Corridor	1,745	2,282	76.5%	1,838	80.5%
Southern Corridor	1,957	2,520	77.7%	2,070	82.2%
Cordon Subtotal	*6,346*	*8,022*	*79.1%*	*6,715*	*83.7%*
SoMa Cordon Total	*20,991*	*29,575*	*71.0%*	*22,164*	*74.9%*

SOURCE: SF Planning Department Memorandum, *Transit Data for Transportation Impact Studies*, May 2015; Fehr & Peers, 2016.

NOTES:

Bold indicates capacity utilization of 85 percent or greater.

Shaded indicates cumulatively considerable contribution from the Plan.

Based on the contribution of the Plan ridership to 2040 cumulative plus Plan conditions for the Central SoMa cordons and corridors operating at more than the 85 percent capacity utilization standard, the Plan would contribute considerably to cumulative transit impacts on the following Central SoMa cordons and corridors:

- Northern corridor of the Northwest cordon (a.m., p.m.);
- Middle corridor of the Northwest cordon (p.m.);
- Southern corridor of the Northwest cordon (p.m.);
- Northwest cordon (p.m.);
- Middle corridor of the Southeast cordon (a.m.); and
- Northern corridor of the Southwest cordon (a.m., p.m.).

Development under the Plan would not contribute considerably to cumulative transit impacts at the Southern corridor of the Northwest cordon (a.m.), the Western corridor of the Southeast cordon (a.m.), the Middle corridor of the Southwest cordon (a.m.), the Southern corridor of the Southwest cordon (a.m.), or the Southwest cordon (a.m.).

Implementation of **Mitigation Measure M-TR-3a, Transit Enhancements**, would potentially reduce the effect of increased ridership on Muni capacity utilization. However, because it is not known whether or how much additional funding would be generated for transit service and whether SFMTA could provide additional service on the impacted routes to fully mitigate project impacts, the Plan's transit impact on capacity utilization on the Central SoMa cordons under 2040 cumulative conditions is considered ***significant and unavoidable with mitigation***.

Regional Screenlines. Table IV.D-20, Regional Transit Screenlines—Weekday AM and PM Peak Hours—2040 Cumulative Conditions presents the regional transit screenline analysis for both 2040 cumulative No Project and 2040 cumulative plus Plan conditions. With exception of BART from the East Bay during the a.m. peak hour, and to the East Bay during the p.m. peak hour, no regional transit providers or regional screenlines are expected to exceed the regional provider capacity utilization threshold of 100 percent under 2040 cumulative conditions. Development under the Plan would add about 1,100 trips to BART from the East Bay during the a.m. peak hour, and about 1,000 trips to BART to the East Bay during the p.m. peak hour, which would be a considerable contribution to cumulative impacts on BART and the East Bay screenline. Therefore, for both a.m. and p.m. peak hour conditions, development under the Plan would contribute considerably to cumulative impacts on the regional screenlines.

Implementation of **Mitigation Measure M-TR-3a, Transit Enhancements**, would potentially reduce the effect of increased ridership on BART capacity utilization. However, because it is not known whether or how much additional funding would be generated for transit service and whether additional service to fully mitigate project impacts would be provided, the Plan's transit impact on regional capacity utilization under 2040 cumulative conditions is considered ***significant and unavoidable with mitigation***.

Transit Delay Analysis

As described in Impact TR-3 for existing plus Plan conditions, a transit delay analysis was conducted for Muni routes traveling within the Central SoMa study area to determine the impact associated with additional vehicles generated by new development under the Plan, as well as for conditions for development under the Plan with

TABLE IV.D-20 REGIONAL TRANSIT SCREENLINES—WEEKDAY AM AND PM PEAK HOURS—2040 CUMULATIVE CONDITIONS

Regional Screenline	2040 Cumulative No Project			2040 Cumulative plus Plan	
	Ridership	Capacity	Capacity Utilization	Ridership	Capacity Utilization
AM PEAK HOUR (INBOUND)					
East Bay					
BART	36,923	32,100	**115.4%**	38,000	**118.4%**
AC Transit	6,791	12,000	56.6%	7,000	58.3%
Ferry	4,577	5,940	77.1%	4,682	78.8%
Subtotal	*48,291*	*50,040*	*96.8%*	*49,682*	*99.3%*
North Bay					
GGT Buses	1,734	2,543	70.1%	1,990	78.3%
Ferry	1,606	1,959	82.0%	1,619	82.6%
Subtotal	*3,340*	*4,502*	*75.3%*	*3,609*	*80.2%*
South Bay					
BART	20,539	28,800	71.9%	21,000	72.9%
Caltrain	1,945	3,600	55.4%	2,310	64.2%
SamTrans	281	520	54.0%	271	52.1%
Ferries	59	200	29.5%	59	29.5%
Subtotal	*22,824*	*33,120*	*71.9%*	*23,640*	*71.4%*
Total All Screenlines	*74,455*	*87,662*	*85.4%*	*76,931*	*87.8%*
PM PEAK HOUR (OUTBOUND)					
East Bay					
BART	34,999	32,100	**109.9%**	36,000	**112.1%**
AC Transit	6,873	12,000	57.3%	7,000	58.3%
Ferry	5,153	5,940	86.8%	5,319	89.5%
Subtotal	*47,025*	*50,040*	*94.5%*	*48,39*	*96.6%*
North Bay					
GGT Buses	1,904	2,817	69.3%	2,070	73.5%
Ferry	1,601	1,959	81.7%	1,619	82.6%
Subtotal	*3,505*	*4,776*	*74.4%*	*3,689*	*77.2%*
South Bay					
BART	19,392	28,808	68.3%	20,000	69.4%
Caltrain	2,243	3,600	63.6%	2,529	70.3%
SamTrans	126	320	39.4%	150	46.9%
Ferries	60	200	30.0%	59	29.5%
Subtotal	*22,821*	*32,928*	*67.2%*	*22,738*	*69.1%*
Total All Screenlines	*72,351*	*87,744*	*83.2%*	*74,746*	*85.2%*

SOURCE: SF Planning Department Memoranda, *Transit Data for Transportation Impact Studies*, May 2015 and *Updated BART Regional Screenlines*, October 2016, Fehr & Peers, 2016.

NOTE:

Bold indicates capacity utilization of 100 percent or greater.

the proposed street network changes. Under existing plus Plan conditions, implementation of the Plan would result in increased congestion and significant and unavoidable impacts related to transit delay for ten Muni routes (i.e., the 8 Bayshore, 8AX Bayshore Express, 8BX Bayshore Express, 10 Townsend, 14 Mission, 14R Mission

Rapid, 27 Bryant, 30 Stockton, 45 Union-Stockton, 47 Van Ness routes), and on Golden Gate Transit and SamTrans routes that travel on Mission, Howard, Folsom, and Harrison Streets. Under 2040 cumulative plus Plan conditions, average vehicle delay at intersections are projected to increase from existing conditions due to other background traffic growth, and would result in increased delays to these and all other Muni, Golden Gate Transit, and SamTrans routes operating within Central SoMa. This would be considered a significant cumulative impact related to transit delay on Muni, Golden Gate Transit and SamTrans operations, and development under the Plan with the proposed street network changes) would contribute considerably to this cumulative impact.

Implementation of **Mitigation Measure M-TR-3a, Transit Enhancements**, could potentially result in additional funding that could be dedicated to increased Muni, Golden Gate Transit, and SamTrans service, however, it would be speculative at this time to presume that sufficient funding could be available to offset project effects related to increased congestion. If implemented, **Mitigation Measures M-TR-3b, Boarding Improvements**, **M-TR-3c, Signalization and Intersection Restriping at Townsend/Fifth Streets**, and **M-TR-3d, Implement Tow-away Transit-only Lanes on Fifth Street**, may potentially reduce peak period transit delays on Muni, Golden Gate Transit, and SamTrans routes operating in the Central SoMa transportation study area; however, the feasibility of these mitigation measures is uncertain, and under 2040 cumulative conditions would not be adequate to mitigate impacts to less–than-significant levels. Therefore, the cumulative transit impact on Muni, Golden Gate Transit, and SamTrans operations would remain ***significant and unavoidable with mitigation***.

Summary of Impact C-TR-3

Implementation of the Plan would result in significant cumulative impacts, or contribute considerably to cumulative impacts, on capacity utilization on multiple Muni downtown screenlines and corridors, and Central SoMa cordons and corridors. Under 2040 cumulative conditions, development under the Plan would contribute considerably to BART ridership for travel from the East Bay during the a.m. peak hour and to the East Bay during the p.m. peak hours, and the BART East Bay screenlines would operate at more than the 100 percent capacity utilization standard. All other regional screenlines and transit providers ware not projected to exceed the capacity utilization standard under 2040 cumulative conditions. Implementation of the Plan would contribute considerably to cumulative impacts, as a result of increased congestion and transit delay on Muni, Golden Gate Transit, and SamTrans routes that operate within the Central SoMa transportation study area. The feasibility of identified mitigation measures is uncertain and may not be adequate to mitigate cumulative impacts to less-than-significant levels. Therefore, for the above reasons, implementation of the Plan, in combination with past, present and reasonably foreseeable development in San Francisco, would contribute considerably to the ***significant and unavoidable with mitigation*** cumulative local and regional transit impacts.

> **Mitigation:** Implement **Mitigation Measures M-TR-3a, Transit Enhancements**; **M-TR-3b, Boarding Improvements**; **M-TR-3c, Signalization and Intersection Restriping at Townsend/Fifth Streets**; and **M-TR-3d, Implement Tow-away Transit-only Lanes on Fifth Street**.

Significance after Mitigation: Even with these mitigation measures, this impact would remain ***significant and unavoidable with mitigation***.

Cumulative Pedestrian Impacts

Impact C-TR-4: Development under the Plan, including the proposed open space improvements and street network changes, in combination with past, present, and reasonably foreseeable development in San Francisco, would contribute considerably to significant cumulative pedestrian impacts. (Significant and Unavoidable with Mitigation)

Pedestrian Safety Hazards Assessment

Between existing and year 2040 cumulative conditions, without and with development under the Plan, the number of pedestrians on the transportation study area crosswalks, sidewalks and corners are anticipated to increase substantially. In addition to increases in pedestrians in the study area, there would be an increase in vehicle and bicycle travel, which would result in an increase in the potential for vehicle-pedestrian and bicycle-pedestrian conflicts at intersections in the study area. The SFMTA is currently implementing a number of projects within the Central SoMa transportation study area including sidewalk widening, new traffic signals, leading pedestrian intervals, continental crosswalks, corner sidewalk extensions, daylighting (i.e., restricting parking adjacent to corners to enhance visibility for pedestrians and drivers at the intersection), and travel lane reductions. Upcoming Vision Zero projects include improvements on streets within Central SoMa, including on Sixth, Seventh, Eighth, Folsom, and Howard Streets. The Plan's proposed street network changes, in combination with other cumulative projects would improve the pedestrian network in Central SoMa and enhance pedestrian safety, including for seniors and persons with disabilities. Thus, under 2040 cumulative conditions, impacts related to cumulative pedestrian safety hazards would be ***less than significant***.

Crosswalk, Sidewalk, and Corner Pedestrian LOS Impact Analysis

Future year 2040 cumulative pedestrian volumes were estimated based on cumulative development and growth identified by the Transportation Authority's SF-CHAMP travel demand model, using model output that represents existing conditions and model output for year 2040 cumulative conditions. **Table IV.D-21, Pedestrian Crosswalk Level of Service—Weekday Midday Peak Hour—2040 Cumulative Conditions**, and **Table IV.D-22, Pedestrian Crosswalk Level of Service—Weekday PM Peak Hour—2040 Cumulative Conditions**, present the pedestrian volumes and LOS conditions for the year 2040 cumulative conditions at the crosswalk locations for the weekday midday and p.m. peak hours, respectively. **Table IV.D-23, Pedestrian Sidewalk Level of Service—Weekday Midday Peak Hour**, and **Table IV.D-24, Pedestrian Sidewalk Level of Service—Weekday PM Peak Hour—2040 Cumulative Conditions**, present the pedestrian volumes and LOS conditions for the 2040 cumulative conditions at the sidewalk locations for the weekday midday and p.m. peak hours, respectively. **Table IV.D-25, Pedestrian Corner Level of Service—Weekday Midday Peak Hour—2040 Cumulative Project Conditions**, and **Table IV.D-26, Pedestrian Corner Level of Service—Weekday PM Peak Hour—2040 Cumulative Conditions**, present the pedestrian volumes and LOS conditions for the year 2040 cumulative conditions at the corner locations for the weekday midday and p.m. peak hours, respectively. For the year 2040 cumulative conditions with implementation of the Plan, two scenarios are presented: for conditions with only the additional pedestrian trips generated by only development under the Plan (i.e., the Land Use Plan Only Alternative), and for conditions including development under the Plan with the proposed street network changes. As noted in Impact TR-4 above, the proposed street network changes include signal timing upgrades, sidewalk widening, and corner sidewalk extensions to meet the standards in the *Better Streets Plan*, where possible.

TABLE IV.D-21 PEDESTRIAN CROSSWALK LEVEL OF SERVICE—WEEKDAY MIDDAY PEAK HOUR—2040 CUMULATIVE CONDITIONS

Intersection and Crosswalk Locations	2040 Cumulative No Project			2040 Cumulative plus Land Use Plan Only Alternative (see Section VI.F, Alternatives)			2040 Cumulative plus Plan[c]		
	Pedestrians	sf/ped[a]	LOS[b]	Pedestrians	sf/ped	LOS	Pedestrians	sf/ped	LOS
Third/Mission									
North	1,951	17	D	2,060	16	D	2,076	19	D
South	2,146	14	**E**	**2,266**	**13**	**E**	2,283	16	D
East	2,253	12	**E**	**2,379**	**11**	**E**	**2,397**	**<8**	**F**
West	1,851	19	D	1,954	18	D	1,969	**<8**	**F**
Third/Howard									
North	1,312	30	C	1,386	29	C	1,396	32	C
South	1,439	37	C	1,519	35	C	1,531	51	B
East	1,461	19	D	1,543	18	D	1,554	29	C
West	1,379	23	D	1,456	22	D	1,467	**<8**	**F**
Fourth/Mission									
North	2,353	14	**E**	**2,485**	**14**	**E**	2,504	19	D
South	2,795	12	**E**	**2,952**	**11**	**E**	2,974	15	D
East	3,601	14	**E**	**3,803**	**13**	**E**	**3,831**	**<8**	**F**
West	3,306	16	D	**3,491**	**15**	**E**	**3,517**	**<8**	**F**
Fourth/Howard									
North	1,344	42	B	1,420	40	C	1,430	41	B
South	**1,166**	**14**	**E**	1,231	13	**E**	1,240	37	C
East	2,150	29	C	2,270	27	C	2,288	41	B
West	**1,244**	**10**	**E**	1,313	10	**E**	**1,323**	12	**E**
Fourth/Folsom									
North	50	>60	A	76	>60	A	76	>60	A
South	375	34	C	566	21	D	570	>60	A
East	591	24	D	**893**	**15**	**E**	899	18	D
West	449	>60	A	678	>60	A	683	>60	A
Fourth/Harrison									
North	253	>60	A	383	>60	A	385	>60	A
South	253	57	B	383	37	C	385	>60	A
East	889	41	B	1,342	26	C	1,351	25	C
West	41	>60	A	62	>60	A	62	>60	A
Ramp	294	56	B	444	35	C	447	33	C
Fourth/Bryant									
North	32	>60	A	48	>60	A	48	>60	A
South	296	42	B	447	27	C	450	40	B
East	816	19	D	**1,232**	**12**	**E**	**1,241**	**12**	**E**
West	36	>60	A	55	>60	A	55	>60	A
Ramp	12	>60	A	18	>60	A	18	>60	A
Fourth/Brannan									
North	305	>60	A	590	>60	A	595	>60	A
South	356	>60	A	689	44	B	694	42	B
East	650	50	B	1,258	24	D	1,268	32	C
West	424	52	B	822	25	C	828	22	D
Fourth/Townsend									
North	665	40	B	1,287	19	D	1,298	30	C
South	398	>60	A	771	39	C	777	30	C
East	664	43	B	1,285	21	D	1,295	27	C
West	670	19	D	**1,298**	9	**E**	**1,308**	<8	**F**
Fourth/King									
North	412	>60	A	798	35	C	804	35	C
South	615	53	B	1,192	25	C	1,201	25	C
East	1,021	53	B	1,976	26	C	1,992	26	C
West	1,055	48	B	2,043	24	D	2,059	23	D

SOURCE: SF Planning Department, Fehr & Peers, 2016. Research, studies, and analysis for the Central SoMa Plan.

NOTES:

a. Square feet per pedestrian. Inputs into this metric include signal cycle length, pedestrian green time, crosswalk square footage, and pedestrian volumes. Changes to any of these inputs across the scenarios (e.g. change in signal cycle from 60 to 90 seconds) lead to changes in the metric value and the resulting LOS.

b. Shaded indicates cumulatively considerable contribution from the Plan or the Land Use Plan Only Alternative.

c. With Plan analysis assumes that crosswalks would be widened to width of adjacent sidewalks, and travel lane and signal control changes would be implemented.

TABLE IV.D-22 PEDESTRIAN CROSSWALK LEVEL OF SERVICE—WEEKDAY PM PEAK HOUR—2040 CUMULATIVE CONDITIONS

Intersection and Crosswalk Locations	2040 Cumulative No Project			2040 Cumulative plus Land Use Plan Only Alternative (see Section VI.F, Alternatives)			2040 Cumulative plus Plan[c]		
	Pedestrians	sf/ped[a]	LOS[b]	Pedestrians	sf/ped	LOS	Pedestrians	sf/ped	LOS
Third/Mission									
North	2,098	16	D	2,215	15	D	2,232	18	D
South	1,316	25	C	1,390	23	D	1,400	28	C
East	2,198	15	D	**2,321**	**14**	**E**	**2339**	**<8**	**F**
West	1,772	20	D	1,872	19	D	1866	**<8**	**F**
Third/Howard									
North	948	44	B	1,002	41	B	9	47	B
South	1,063	56	B	1,123	52	B	1,131	77	A
East	1,714	18	D	1,810	17	D	1,824	27	C
West	1,511	25	C	1,596	24	D	1,608	**<8**	**F**
Fourth/Mission									
North	2,259	15	D	2,385	**11**	**E**	2,403	20	D
South	**2,914**	**11**	**E**	3,077	**8**	**E**	**3,100**	**15**	**E**
East	**4,771**	**10**	**E**	5,037	**8**	**F**	**5,076**	**<8**	**F**
West	**3,872**	**13**	**E**	4,089	**10**	**E**	**4,120**	**<8**	**F**
Fourth/Howard									
North	1,196	50	B	1,263	47	B	1,272	46	B
South	878	20	D	927	19	D	931	51	B
East	2,534	21	D	2,676	20	D	2,696	34	C
West	1,212	11	E	1,280	**10**	**E**	**1,289**	**12**	**E**
Fourth/Folsom									
North	44	>60	A	66	>60	A	**67**	>60	A
South	373	28	C	563	18	D	**567**	>60	A
East	**977**	**13**	**E**	1,495	**<8**	**F**	**1,485**	**10**	**E**
West	491	>60	A	742	>60	A	**747**	>60	A
Fourth/Harrison									
North	335	>60	A	506	>60	A	**510**	>60	A
South	335	42	B	506	27	C	**510**	49	B
East	1,436	21	D	2,169	**13**	**E**	2,184	**12**	**E**
West	32	>60	A	48	>60	A	48	>60	A
Ramp	367	43	B	554	27	C	**558**	25	C
Fourth/Bryant									
North	29	>60	A	44	>60	A	**44**	>60	A
South	312	55	B	472	35	C	**475**	53	B
East	**1,400**	**10**	**E**	2,114	**<8**	**F**	2,129	**<8**	**F**
West	53	>60	A	80	>60	A	81	>60	A
Ramp	23	>60	A	34	>60	A	35	>60	A
Fourth/Brannan									
North	640	51	B	1,239	24	D	1,249	23	D
South	525	49	B	1,016	23	D	1,024	23	D
East	937	39	C	1,814	18	D	1,828	24	D
West	870	30	C	**1,684**	**14**	**E**	**1,697**	**12**	**E**
Fourth/Townsend									
North	806	51	B	1,561	24	D	1,574	38	C
South	1,045	36	C	2,024	17	D	**2,040**	**12**	**E**
East	775	46	B	1,500	21	D	1,512	28	C
West	**2,087**	**<8**	**F**	**4,040**	**<8**	**F**	**4,072**	**<8**	**F**
Fourth/King									
North	1,158	27	C	**2,242**	**12**	**E**	**2,260**	**12**	**E**
South	1,089	28	C	**2,109**	**13**	**E**	**2,126**	**13**	**E**
East	989	42	B	1,915	20	D	1,930	20	D
West	2,634	20	D	**5,099**	**9**	**E**	**5,139**	**9**	**E**

SOURCE: SF Planning Department, Fehr & Peers, 2016. Research, studies, and analysis for the Central SoMa Plan.

NOTES:

a. Square feet per pedestrian. Inputs into this metric include signal cycle length, pedestrian green time, crosswalk square footage, and pedestrian volumes. Changes to any of these inputs across the scenarios (e.g. change in signal cycle from 60 to 90 seconds) lead to changes in the metric value and the resulting LOS.

b. Shaded indicates cumulatively considerable contribution from the Plan or the Land Use Plan Only Alternative.

c. With Plan analysis assumes that crosswalks would be widened to width of adjacent sidewalks, and travel lane and signal control changes would be implemented.

TABLE IV.D-23 PEDESTRIAN SIDEWALK LEVEL OF SERVICE—WEEKDAY MIDDAY PEAK HOUR—2040 CUMULATIVE CONDITIONS

Intersection and Sidewalk Location	2040 Cumulative No Project			2040 Cumulative plus Land Use Plan Only Alternative (see Section VI.F, Alternatives)			2040 Cumulative plus Plan[c]		
	Pedestrians	ped/ min/ft[a]	LOS[b]	Pedestrians	ped/ min/ft	LOS	Pedestrians	ped/ min/ft	LOS
Fourth Street between Market and Mission[d]									
West	2,529	7.7	D	**3,821**	**11.7**	**E**	3,847	4.5	C
East	2,135	4.1	C	3,225	6.2	D	6,247	4.6	C
Fourth Street between Mission and Howard[e]									
West	1,011	1.9	B	5,128	2.8	B	1,538	1.6	B
East	**3,407**	**12.5**	**E**	5,147	**>18**	**F**	5,182	4.1	C
Fourth Street between Folsom and Harrison[f]									
West	270	0.6	B	408	0.9	B	410	0.6	B
East	1,359	3.3	C	2,052	5.1	C	2,066	3.1	C
Fourth Street between Bryant and Brannan[g]									
West	185	0.5	B	359	1.0	B	362	1.0	B
East	385	1.1	B	745	2.1	B	751	2.1	B
Fourth Street between Brannan and Townsend[g]									
West	367	0.9	B	710	1.8	B	716	1.8	B
East	580	1.5	B	1,122	3.0	B	1,131	3.0	C

SOURCE: SF Planning Department, Fehr & Peers, 2016. Research, studies, and analysis for the Central SoMa Plan.

NOTES:

a. Pedestrians per foot per minute.

b. Shaded indicates cumulatively considerable contribution from the Plan or the Land Use Plan Only Alternative.

c. With Plan analysis assumes that sidewalks on one or both sides of the street would be widened by about five feet between Market and Harrison Streets as detailed below. Analysis assumes implementation of Howard/Folsom One-Way Option, although pedestrian conditions under the Howard/Folsom Two-Way Option would be similar.

d. On Fourth Street between Market and Mission Streets, with the proposed street network improvements, the west sidewalk would be widened from 10 to 17.5 feet, and the east sidewalk would remain the same as under existing conditions.

e. On Fourth Street between Mission and Howard Streets, with the proposed street network improvements, the west sidewalk would be widened from 18 to 20 feet, and the east sidewalk would be widened from 12 to 25 feet.

f. On Fourth Street between Folsom and Harrison Streets, with the proposed street network improvements, the west sidewalk would be widened from 12 to 17 feet, and the east sidewalk would be widened from 10 to 15 feet.

g. On Fourth Street between Bryant and Brannan Streets, and between Brannan and Townsend Streets, the west and east sidewalks would remain the same as under existing conditions.

TABLE IV.D-24 PEDESTRIAN SIDEWALK LEVEL OF SERVICE—WEEKDAY PM PEAK HOUR—2040 CUMULATIVE CONDITIONS

Intersection and Sidewalk Location	2040 Cumulative No Project			2040 Cumulative plus Land Use Plan Only Alternative (see Section VI.F, Alternatives)			2040 Cumulative plus Plan[c]		
	Pedestrians	ped/ min/ft[a]	LOS[b]	Pedestrians	ped/ min/ft	LOS	Pedestrians	ped/ min/ft	LOS
Fourth Street between Market and Mission[d]									
West	2,801	8.6	D	**4,231**	**12.8**	**E**	4,259	5.0	C
East	3,107	6.0	C	4,693	9.0	D	4,725	6.7	D
Fourth Street between Mission and Howard[e]									
West	1,136	2.1	B	1,716	3.1	C	1,727	1.8	B
East	2,921	10.7	D	**4,412**	**16.1**	**E**	4,442	3.5	C
Fourth Street between Folsom and Harrison[f]									
West	240	0.6	B	362	1.0	B	364	0.7	B
East	1,638	3.7	C	2,474	5.6	C	2,491	3.5	C
Fourth Street between Bryant and Brannan[g]									
West	492	1.3	B	952	2.4	B	960	2.5	B
East	1,028	2.6	B	1,990	5.1	C	2,005	5.1	C
Fourth Street between Brannan and Townsend[g]									
West	1,295	3.3	C	2,508	6.3	D	2,528	6.4	D
East	740	2.1	B	1,434	4.1	C	1,445	4.2	C

SOURCE: SF Planning Department, Fehr & Peers, 2016. Research, studies, and analysis for the Central SoMa Plan.

NOTES:

a. Pedestrians per foot per minute.

b. Shaded indicates cumulatively considerable contribution from the Plan or the Land Use Plan Only Alternative.

c. With Plan analysis assumes that sidewalks on one or both sides of the street would be widened by about five feet between Market and Harrison Streets as detailed below. Analysis assumes implementation of Howard/Folsom One-Way Option, although pedestrian conditions under the Howard/Folsom Two-Way Option would be similar.

d. On Fourth Street between Market and Mission Streets, with the proposed street network improvements, the west sidewalk would be widened from 10 to 17.5 feet, and the east sidewalk would remain the same as under existing conditions.

e. On Fourth Street between Mission and Howard Streets, with the proposed street network improvements, the west sidewalk would be widened from 18 to 20 feet, and the east sidewalk would be widened from 12 to 25 feet

f. On Fourth Street between Folsom and Harrison Streets, with the proposed street network improvements, the west sidewalk would be widened from 12 to 17 feet, and the east sidewalk would be widened from 10 to 15 feet.

g. On Fourth Street between Bryant and Brannan Streets, and between Brannan and Townsend Streets, the west and east sidewalks would remain the same as under existing conditions.

TABLE IV.D-25 PEDESTRIAN CORNER LEVEL OF SERVICE—WEEKDAY MIDDAY PEAK HOUR—2040 CUMULATIVE PROJECT CONDITIONS

Intersection and Corner Locations	2040 Cumulative No Project			2040 Cumulative plus Land Use Plan Only Alternative (see Section VI.F, Alternatives)			2040 Cumulative plus Plan[c]		
	Pedestrians	sf/ped[a]	LOS[b]	Pedestrians	sf/ped	LOS	Pedestrians	sf/ped	LOS
Third/Mission									
Northwest	4,182	<2	**F**	**4,916**	**<2**	**F**	4,450	6	C
Northeast	4,624	<2	**F**	**4,883**	**<2**	**F**	4,920	6	D
Southwest	4,397	<2	**F**	**4,643**	**<2**	**F**	4,678	4	D
Southeast	4,839	<2	**F**	**5,109**	**<2**	**F**	5,148	4	D
Third/Howard									
Northwest	2,960	>13	A	3,125	>13	A	3,149	>13	A
Northeast	3,050	>13	A	3,221	>13	A	3,246	>13	A
Southwest	3,099	>13	A	3,272	>13	A	3,297	>13	A
Southeast	3,190	<2	**F**	3,368	**<2**	**F**	3,794	>13	A
Fourth/Mission									
Northwest	6,225	8	C	6,573	7	C	6,623	>13	A
Northeast	6,550	>13	A	6,916	>13	A	6,969	9	C
Southwest	6,711	>13	A	7,086	>13	A	7,140	>13	A
Southeast	7,036	<2	**F**	7,430	**<2**	**F**	7,486	12	B
Fourth/Howard									
Northwest	2,847	>13	A	3,006	>13	A	3,029	>13	A
Northeast	3,844	>13	A	4,059	>13	A	4,090	>13	A
Southwest	2,650	>13	A	2,799	>13	A	2,820	>13	A
Southeast	3,647	<2	**F**	**3,851**	**<2**	**F**	3,881	>13	A
Fourth/Folsom									
Northwest	549	>13	A	829	>13	A	835	>13	A
Northeast	706	>13	A	1,066	>13	A	1,073	>13	A
Southwest	906	>13	A	1,368	>13	A	1,377	>13	A
Southeast	1,063	>13	A	1,605	>13	A	1,616	>13	A
Fourth/Harrison									
Northwest	324	>13	A	489	>13	A	492	>13	A
Northeast	1,256	>13	A	1,887	>13	A	1,910	>13	A
Southwest	324	>13	A	489	12	B	492	>13	A
Southeast	1,256	>13	A	1,897	>13	A	1,910	>13	A
Fourth/Bryant									
Northwest	75	>13	A	113	>13	A	114	>13	A
Northeast	932	>13	A	1,408	>13	A	1,418	>13	A
Southwest	365	>13	A	552	>13	A	556	>13	A
Southeast	1,223	>13	A	1,847	7	C	1,859	>13	A
Fourth/Brannan									
Northwest	802	>13	A	1,554	>13	A	1,566	>13	A
Northeast	1,050	>13	A	2,033	12	B	2,050	>13	A
Southwest	858	>13	A	1,662	>13	A	1,675	>13	A
Southeast	1,106	>13	A	2,142	>13	A	2,159	>13	A
Fourth/Townsend									
Northwest	1,469	>13	A	2,844	>13	A	2,866	>13	A
Northeast	1,461	>13	A	2,829	>13	A	2,852	>13	A
Southwest	1,176	>13	A	2,276	>13	A	2,294	>13	A
Southeast	1,168	>13	A	2,262	>13	A	2,280	>13	A
Fourth/King									
Northwest	1,614	>13	A	3,125	>13	A	3,150	>13	A
Northeast	1,576	>13	A	3,052	>13	A	3,076	>13	A
Southwest	1,838	>13	A	3,558	>13	A	3,586	>13	A
Southeast	1,800	>13	A	3,485	>13	A	3,512	>13	A

SOURCE: SF Planning Department, Fehr & Peers, 2016. Research, studies, and analysis for the Central SoMa Plan.

NOTES:

a. Square feet per pedestrian.

b. Shaded indicates cumulatively considerable contribution from the Plan or the Land Use Plan Only Alternative.

c. With Plan analysis assumes that sidewalks would be widened to width of adjacent sidewalks, and travel lane and signal control changes would be implemented.

TABLE IV.D-26 PEDESTRIAN CORNER LEVEL OF SERVICE—WEEKDAY PM PEAK HOUR—2040 CUMULATIVE CONDITIONS

Intersection and Corner Locations	2040 Cumulative No Project			2040 Cumulative plus Land Use Plan Only Alternative (see Section VI.F, Alternatives)			2040 Cumulative plus Plan[c]		
	Pedestrians	sf/ped[a]	LOS[b]	Pedestrians	sf/ped	LOS	Pedestrians	sf/ped	LOS
Third/Mission									
Northwest	4,257	<2	**F**	**4,496**	**<2**	**F**	4,530	6	C
Northeast	4,726	<2	**F**	**4,990**	**<2**	**F**	5,028	6	C
Southwest	3,398	<2	**F**	**3,588**	**<2**	**F**	3,615	8	C
Southeast	3,866	<2	**F**	**4,082**	**<2**	**F**	4,113	7	C
Third/Howard									
Northwest	2,706	>13	A	2,857	>13	A	2,879	>13	A
Northeast	2,929	>13	A	3,093	>13	A	3,116	>13	A
Southwest	2,832	>13	A	2,990	>13	A	3,013	>13	A
Southeast	3,055	<2	**F**	**3,226**	**<2**	**F**	3,250	>13	A
Fourth/Mission									
Northwest	6,744	8	C	7,121	8	C	7,176	>13	A
Northeast	7,732	>13	A	8,165	>13	A	8,227	9	C
Southwest	7,465	11	B	7,882	10	B	7,942	11	B
Southeast	8,453	<2	**F**	**8,926**	**<2**	**F**	8,994	8	C
Fourth/Howard									
Northwest	2,648	>13	A	2,796	>13	A	2,818	>13	A
Northeast	4,103	>13	A	4,332	>13	A	4,365	>13	A
Southwest	2,299	>13	A	2,428	>13	A	2,446	>13	A
Southeast	3,753	<2	**F**	**3,963**	**<2**	**F**	3,993	>13	A
Fourth/Folsom									
Northwest	589	>13	A	889	>13	A	895	>13	A
Northeast	1,123	>13	A	1,696	>13	A	1,707	>13	A
Southwest	951	>13	A	1,436	>13	A	1,446	>13	A
Southeast	1,485	>13	A	2,242	>13	A	2,258	>13	A
Fourth/Harrison									
Northwest	404	>13	A	610	11	B	614	>13	A
Northeast	1,948	>13	A	2,943	>13	A	2,963	>13	A
Southwest	404	>13	A	610	8	C	614	>13	A
Southeast	1,948	>13	A	2,943	5	D	2,963	>13	A
Fourth/Bryant									
Northwest	90	>13	A	136	>13	A	137	>13	A
Northeast	1,571	>13	A	2,373	12	B	2390	>13	A
Southwest	402	>13	A	607	>13	A	611	12	B
Southeast	1,883	3	D	**2,845**	**<2**	**F**	2864	>13	A
Fourth/Brannan									
Northwest	1,661	>13	A	3,215	12	B	3,241	>13	A
Northeast	1,735	>13	A	3,359	6	D	3,385	>13	A
Southwest	1,534	>13	A	2,970	3	D	2,993	12	B
Southeast	1,608	>13	A	3,113	5	D	3,138	>13	A
Fourth/Townsend									
Northwest	3,182	>13	A	6,162	4	D	6,211	4	D
Northeast	1,739	>13	A	3,368	>13	A	3,394	>13	A
Southwest	3,445	>13	A	6,671	>13	A	6,724	>13	A
Southeast	2,002	>13	A	3,877	>13	A	3,907	>13	A
Fourth/King									
Northwest	4,171	>13	A	8,075	>13	A	8,139	>13	A
Northeast	2,362	>13	A	4,573	>13	A	4,609	>13	A
Southwest	4,095	>13	A	7,929	3	D	7,992	3	D
Southeast	2,286	>13	A	4,427	>13	A	4,462	>13	A

SOURCE: SF Planning Department, Fehr & Peers, 2016. Research, studies, and analysis for the Central SoMa Plan.

NOTES:

a. Square feet per pedestrian.

b. Shaded indicates cumulatively considerable contribution from the Plan or the Land Use Plan Only Alternative.

c. With Plan analysis assumes that sidewalks would be widened to width of adjacent sidewalks, and travel lane and signal control changes would be implemented.

Crosswalks. As described in Impact TR-4 for existing plus Plan conditions, implementation of the Plan would result in project-specific pedestrian impacts at one or more crosswalks at the intersections of Third/Mission, Fourth/Mission, Fourth/Brannan, Fourth/Townsend, and Fourth/King, and these impacts would also be considered significant cumulative pedestrian impacts of the Plan. Under year 2040 cumulative conditions, the Plan would contribute considerably to significant cumulative pedestrian impacts at one or more crosswalks at the intersections of Third/Mission, Third/Howard, Fourth/Mission, Fourth/Howard, Fourth/Folsom, Fourth/Harrison, Fourth/Bryant, Fourth/Brannan, Fourth/Townsend, and Fourth/King during the midday and/or p.m. peak hours. As noted in Table IV.D-21 and Table IV.D-22, implementation of the proposed street network changes would eliminate year 2040 cumulative No Project LOS E or LOS F conditions at the south crosswalk at the intersection of Third/Mission, at the north and south crosswalks at the intersection of Fourth/Mission, and at the south crosswalk at the intersection of Fourth/Howard during the midday peak hour. The proposed signal timing changes would result in a cumulative impact at the west crosswalks at the intersections of Third/Mission and Third/Howard, and at the south crosswalk at the intersection of Fourth/Townsend.

Implementation of **Mitigation Measure M-TR-4, Upgrade Central SoMa Crosswalks**, would improve the crosswalk LOS operating conditions at the four intersections of Third/Mission, Fourth/Mission, Fourth/Brannan, and Fourth/Townsend to LOS D or better under existing plus Plan conditions. However, under 2040 cumulative conditions, the cumulative pedestrian crosswalk impacts at these four intersections and at crosswalks at the intersections of Third/Howard, Fourth/Howard, Fourth/Folsom, Fourth/Harrison, Fourth/Bryant, Fourth/Brannan, and Fourth/King, would require additional crosswalk widening. Because the feasibility of the crosswalk widening beyond the current width and those identified in Mitigation Measure M-TR-4 is uncertain due to roadway or other physical constraints (e.g., presence of bus stops or platforms), the cumulative pedestrian impacts at the crosswalks at these ten intersections would remain ***significant and unavoidable with mitigation***. One or more crosswalks at the intersections of Third/Mission, Fourth/Mission, Fourth/Townsend, and Fourth/King would require crosswalks greater than 40 feet, which would not be feasible at these locations. Therefore implementation of the Plan would contribute considerably to significant and unavoidable cumulative pedestrian impacts at one or more crosswalks at the intersections of Third/Mission, Third/Howard, Fourth/Mission, Fourth/Howard, Fourth/Folsom, Fourth/Harrison, Fourth/Brannan, Fourth/Bryant, Fourth/Townsend, and Fourth/King, and cumulative pedestrian crosswalk impacts would be ***significant and unavoidable with mitigation***.

Sidewalks. As shown on Table IV.D-23 and Table IV.D-24, under 2040 cumulative conditions with development under the Plan and the proposed street network changes, pedestrian LOS at the study sidewalks would remain similar to or improve over cumulative No Project conditions. With implementation of the proposed sidewalk widening as part of the Plan street network changes, the LOS for all study sidewalks would be LOS D or better, and 2040 cumulative pedestrian sidewalk impacts would be ***less than significant***.

Corners. As shown on Table IV.D-25 and Table IV.D-26, under 2040 cumulative conditions with development under the Plan and the proposed street network changes (including sidewalk widening), all corners would operate at LOS D or better during the midday and p.m. peak hours, and 2040 cumulative pedestrian corner impacts would be ***less than significant***.

Overall, implementation of the Plan, in combination with past, present and foreseeable development in San Francisco, would contribute to cumulative pedestrian impacts at multiple crosswalk locations that could not

be mitigated to less-than-significant levels, and cumulative pedestrian impacts would be ***significant and unavoidable with mitigation***.

Mitigation: Implement **Mitigation Measure M-TR-4, Upgrade Central SoMa Crosswalks**.

Significance after Mitigation: Even with mitigation, impacts would remain ***significant and unavoidable***.

Cumulative Bicycle Impacts

Impact C-TR-5: Development under the Plan, including the proposed open space improvements and the street network changes, in combination with past, present, and reasonably foreseeable development in San Francisco, would not result in cumulative bicycle impacts. (Less than Significant)

The Plan includes improvements to existing bicycle facilities on Howard and Folsom Streets, and provides new protected cycle tracks on Brannan, Third, and Fourth Streets. These improvements would be in addition to the planned bicycle lanes on Fifth Street that would be consistent with the adopted *Bicycle Plan* (design of facility on Fifth Street is being developed by SFMTA), as well as other bicycle facility improvements included as part of Vision Zero projects. These bicycle improvements would enhance cycling conditions within the transportation study area. As bicycling continues to increase throughout San Francisco, the number of bicyclists on the transportation study area bicycle routes and lanes is also anticipated to increase. While there would be a general increase in vehicle traffic that is expected through the future 2040 cumulative conditions, development under the Plan and/or the proposed street network changes would not create potentially hazardous conditions for bicycles, or otherwise interfere with bicycle accessibility to the transportation study area and adjoining areas, or substantially affect the existing, planned, and proposed bicycle facilities in Central SoMa. If implemented, **Improvement Measures I-TR-5a, Cycle Track Public Education Campaign**, and **I-TR-5b, Cycle Track Post-Implementation Surveys**, would further reduce potential, less-than-significant conflicts between bicyclists and pedestrians, transit, trucks, and autos. Therefore, for the above reasons, implementation of the Plan, in combination with past, present and reasonably foreseeable development in San Francisco, would result in ***less-than-significant*** cumulative impacts on bicyclists.

Mitigation: None required.

Cumulative Loading Impacts

Impact C-TR-6: Development under the Plan, including the proposed open space improvements and street network changes, in combination with past, present, and reasonably foreseeable development in San Francisco, would contribute considerably to significant cumulative loading impacts. (Significant and Unavoidable with Mitigation)

Commercial vehicle and passenger loading/unloading impacts are by their nature localized and site-specific, and generally would not contribute to impacts from other development projects outside of the Central SoMa Plan Area. However, as described in Impact TR-6, to the extent that loading demand associated with development under the Plan is not accommodated on-site, or could not be accommodated within existing or

new on-street commercial loading spaces, double-parking, illegal use of sidewalks and other public space is likely to occur with associated disruptions and impacts to traffic and transit operations, as well as to bicyclists and pedestrians. Thus, development under the Plan in combination with street network changes associated with other cumulative projects, such as the Transit Center District Plan or the Second Street Improvement Project to the east, the Sixth Street Improvement project to the west, and the Muni Forward Travel Time Reduction Proposal (TTRP) project on Mission Street to the north, could result in cumulative loading impacts. The cumulative impact related to the loss of on-street commercial loading spaces as a result of the various street network projects would depend on the number of commercial loading spaces that would be eliminated, the location of the spaces, the availability of alternate locations to accommodate loading/unloading activities, and whether the loss of loading would result in potentially hazardous conditions or significant delays affecting transit, traffic, bicycles, or pedestrians. In situations where large amounts of commercial loading spaces are removed, where loading demand cannot be reasonably accommodated within existing nearby spaces, and roadway right-of-way is constrained such that a potential hazardous condition is created or significant delay affecting transit, bicycles, or pedestrians occurs, potential significant cumulative impacts to loading may result, and development under the Plan would contribute considerably to these significant cumulative impacts.

Implementation of the Plan's street network changes would also contribute considerably to the significant cumulative impact on loading. The proposed street network changes would result in the permanent removal of about 60 on-street commercial loading spaces, and access to about 70 on-street commercial loading spaces would be restricted during peak periods. A small portion of the permanent and peak period reduction in commercial loading spaces would be offset by new commercial loading spaces that could be installed within recessed commercial loading bays within the sidewalks. In addition, some commercial loading spaces could be relocated to the other side of the street where on-street parking would be maintained, however, these spaces may not be in proximity to the need for these spaces. The permanent and peak period removal of on-street commercial loading spaces would require existing delivery and service vehicles using these spaces to seek alternative locations, particularly during the morning peak period when commercial deliveries are greatest, and would also result in fewer on-street loading spaces being available for future development. Even with implementation of **Mitigation Measures M-TR-6a, Driveway and Loading Operations Plan**, and **M-TR-6b, Accommodation of On-Street Commercial Loading Spaces and Passenger Loading/Unloading Zones**, it is anticipated that the development under the Plan and the street network changes could result in double-parking along streets that could adversely affect local vehicular, transit, and bicycle circulation, particularly where protected transit and bicycle facilities are not provided, and lead to congestion and delays. These conditions would worsen with cumulative projects that also remove on-street commercial loading spaces (such as the Transit Center District Plan, the Second Street Improvement Project, the Sixth Street Improvement Project, the Muni Forward TTRP project on Mission Street noted above), and increase in loading demand associated with development projects outside of the proposed rezoning area but on streets affected by the Plan's proposed street network changes. Therefore, for the above reasons, implementation of the Plan, in combination with past, present and reasonably foreseeable development in San Francisco, would result in ***significant and unavoidable with mitigation*** cumulative commercial vehicle loading impacts.

Similar to commercial loading spaces, the design of the Plan's street network changes would consider the potential relocation of passenger loading/unloading zones, particularly those serving the hotel and Moscone Center uses on Third and Fourth Streets, and the Bessie Carmichael School/Filipino Education Center on

Harrison Street between Fourth and Fifth Streets. The need for and location of passenger loading/unloading zones on study area streets could be affected by nearby development outside of Central SoMa that would also contribute to cumulative passenger loading/unloading impacts. Implementation of **Mitigation Measure M-TR-6b: Accommodation of On-Street Commercial Loading Spaces and Passenger Loading/Unloading Zones**, would serve to ensure that existing and future passenger loading/unloading needs are accommodated. However, the feasibility of providing replacement passenger loading/unloading zones cannot be assured in every situation, and the Plan's impact on passenger loading/unloading operations was determined to be significant and unavoidable under existing plus Plan conditions. As described in Impact TR-6 above, the impacts of inadequate passenger loading/unloading zones could result in double-parking along streets that could adversely affect local vehicular, transit, and bicycle circulation, particularly where protected transit and bicycle facilities are not provided, and lead to congestion and delays, and could worsen with nearby cumulative projects. Therefore, for the above reasons, implementation of the Plan, in combination with past, present and reasonably foreseeable development in San Francisco, would result in ***significant and unavoidable*** cumulative passenger loading/unloading impacts with mitigation.

> **Mitigation:** Implement **Mitigation Measure M-TR-6a, Driveway and Loading Operations Plan**, and **Mitigation Measure M-TR-6b: Accommodation of On-Street Commercial Loading Spaces and Passenger Loading/Unloading Zones**.

Significance after Mitigation: Even with these mitigation measures, this impact would remain ***significant and unavoidable with mitigation***.

Cumulative Parking Impacts

Impact C-TR-7: Development under the Plan, including the proposed open space improvements and the street network changes, in combination with past, present, and reasonably foreseeable development in San Francisco, would not result in cumulative parking impacts. (Less than Significant)

Over time, due to the land use development and increased density anticipated within the city, parking demand and competition for on-street and off-street parking is likely to increase. As described in Impact TR-7, the new off-street parking supply provided as part of development projects within Central SoMa would not be expected to accommodate the projected parking demand, and would result in a shortfall in parking spaces that would need to be accommodated in other off-street public parking facilities and on-street. Other cumulative development projects would further increase the projected parking shortfall. Additionally, through the implementation of the City's Transit First Policy, the City's *Better Streets Plan*, Vision Zero projects, and related projects, on-street parking spaces may be further removed to promote sustainable travel modes and sustainable street designs including cycle tracks, bicycle lanes, transit bulbs, and corner bulb-outs. These projects would encourage transit use through the reduction of transit travel time and increase of transit reliability, and would encourage bicycle use through provision of separate bicycle facilities that would offer a higher level of security than bicycle lanes and would be attractive to a wider spectrum of the public. The Plan's proposed street network changes include peak period and permanent removal of on-street parking on Howard, Folsom, Brannan, Bryant, Third, and Fourth Streets. The parking demand associated with development and displaced through on-street parking removal would need to be accommodated within on-site facilities, and in nearby public parking facilities, and, as a result, the midday and overnight on-street and

off-street parking occupancy in the study area would increase. Under 2040 cumulative conditions, within Central SoMa, the absence of a ready supply of parking spaces, combined with available alternatives to auto travel (e.g., transit service, taxis, bicycles or travel by foot) and a relatively dense pattern of urban development, may induce drivers to shift to other modes of travel, or change their overall travel habits. Implementation of **Mitigation Measure M-NO-1a, TDM Plan for Development Projects**, may further lead to a mode shift from private passenger vehicles to transit or other modes of travel. As noted in section "Regulatory Framework" above, the Planning Department is currently pursuing an ordinance amending the *Planning Code* to establish a citywide TDM Program. Resolution 19628 of intent to initiate these *Planning Code* amendments was approved by the Planning Commission on August 4, 2016. If the proposed *Planning Code* amendments are legislated by the Board of Supervisors, all cumulative development projects within San Francisco would be subject to the requirements of the TDM Program.

Under 2040 cumulative conditions, it is anticipated that on-street parking management would be active within the Central SoMa Plan Area. As noted in Impact TR-7 above, the SFMTA and the U.S. Department of Transportation are currently evaluating the data collected as part of the SF*park* pilot program. Implementation of SF*park* would include on-street parking management to facilitate short-term parking and reduce the around-the-block maneuvers associated with drivers searching for parking, and discourage long-term on-street parking to support a shift in travel from auto to public transit or other modes. In addition, it is anticipated that the pilot program to use on-street parking spaces as carshare spaces would be active in Central SoMa under 2040 cumulative conditions.

Considering the location in the downtown area with multiple alternative public parking facilities and travel modes available (including local and regional transit, bicycling, and walking), proposed improvements to the transit, pedestrian, and bicycle network, the cumulative increase in parking demand as part of new development and associated parking shortfall, and on-street parking loss in the Central SoMa vicinity as a result of the proposed street network changes would not be considered substantial, nor would the on-street parking loss be expected to result in hazardous conditions such as impairing visibility on narrow streets (e.g., at midblock alleys), blocking sidewalks or crosswalks, or blocking access to fire hydrants. Discussion of potential hazards such as double-parking, illegal use of sidewalks and other public space that could result from removal of on-street commercial or passenger loading spaces is provided in Impact C-TR-6 above.

Therefore, for the above reasons, implementation of the Plan, in combination with past, present and reasonably foreseeable development in San Francisco, would result in ***less-than-significant*** cumulative impacts on parking.

Mitigation: None required.

Cumulative Emergency Vehicle Access Impacts

Impact C-TR-8: Development under the Plan, including the proposed open space improvements and street network changes, in combination with past, present, and reasonably foreseeable development in San Francisco, could contribute considerably to significant cumulative emergency vehicle access impacts. (Less than Significant with Mitigation)

Implementation of the Plan could contribute considerably to cumulative emergency vehicle access conditions in Central SoMa. Cumulative growth in housing and employment within Central SoMa and San Francisco would result in an increased demand of emergency response calls, and would also increase the number of vehicles on Central SoMa streets, and result in increased vehicle delays. As described above, a number of cumulative projects would affect the street network in the vicinity of Central SoMa, however, none of these projects would introduce physical barriers that would preclude emergency vehicle access. The Plan's proposed street network changes, in combination with street network changes of other cumulative projects noted above, would result in fewer mixed-flow travel lanes on a number of study area streets, which would reduce the available capacity for vehicles, and would thereby increase the number of vehicles in the remaining travel lanes and result in additional vehicle delay on these streets. As described in Impact TR-8 for existing plus Plan conditions, a number of the Plan's street network changes would also reduce the available roadway width available for drivers to pull over to allow emergency vehicles to pass as these street network changes include barriers between the mixed-flow travel lanes and adjacent transit-only lanes or cycle tracks. Emergency vehicle providers may need to adjust travel routes to respond to incidents, and would be subject to increased congestion associated with cumulative development and street network changes. Thus, as under existing plus Plan conditions, under 2040 cumulative conditions, the increased number of vehicles in the remaining mixed-flow travel lanes and increased levels of traffic congestion would occasionally impede emergency vehicle access in the transportation study area during peak periods of peak traffic volumes, resulting in significant cumulative impacts on emergency vehicle access. Development under the Plan and the proposed street network changes would contribute considerably to these significant cumulative impacts on emergency vehicle access.

Implementation of **Mitigation Measure M-TR-8, Emergency Vehicle Access Consultation**, would reduce the Plan's potential to delay emergency vehicles within Central SoMa. As described in Impact TR-7, this mitigation measure would require that final design of each street network projects be reviewed by the San Francisco Fire Department and the San Francisco Police Department to ensure that private vehicles would not be precluded from yielding the right-of-way to approaching emergency vehicles. **Mitigation Measure M-TR-8, Emergency Vehicle Access Consultation**, would mitigate cumulative impacts on emergency vehicle access to a less-than-significant level. Therefore, for the above reasons, implementation of the Plan, in combination with past, present and reasonably foreseeable development in San Francisco, would result in ***less-than-significant with mitigation*** cumulative emergency vehicle access impacts.

Mitigation: Implement **Mitigation Measure M-TR-8, Emergency Vehicle Access Consultation.**

Significance after Mitigation: Implementation of **Mitigation Measure M-TR-8** would ensure that the significant cumulative emergency vehicle access impact would be reduced to a ***less-than-significant*** level.

Construction-Related Transportation Impacts

Impact C-TR-9: Development under the Plan, including the proposed open space improvements and the street network changes, in combination with past, present, and reasonably foreseeable development in San Francisco, would not result in significant cumulative construction-related transportation impacts. (Less than Significant)

Construction of proposed development under the Plan, the street network changes, and streetscape improvements may overlap with the construction of other cumulative projects, including, among others, the Moscone Center Expansion, 706 Mission Street, 250 Fourth Street, and the 942 Mission Street projects for which building permits have already been approved and/or are under construction, and the 5M Project which has been approved, although the timing of construction is not currently known. The Central Subway project, including the Central Subway Moscone Station on Fourth Street between Clementina and Folsom Streets, is currently under construction, and construction is anticipated to be completed by 2017 (and revenue service initiated in 2019). Other cumulative transportation projects include Muni Forward and Vision Zero projects which include a number of ongoing and planned/proposed changes to the transportation network, and the proposed Better Market Street.

The combined impacts of implementation of the Plan, in combination with construction of other projects outside of the Plan Area would not result in significant cumulative construction-related transportation impacts for the following reasons:

- Many of the identified cumulative projects are currently underway, and/or will be completed in the near term, prior to initiation of construction of development projects, open space improvements, or transportation projects under the Plan.
- Transportation-related construction impacts are typically located in the immediate vicinity of the construction activities, and are of limited duration (e.g., typically two to three years for development projects, and one to two years for street network changes).
- There are no forecasted development, open space, or transportation projects in the vicinity of the Plan Area that would overlap in location and schedule, so as to result in significant disruptions to traffic, transit, pedestrians, or bicyclists.

Therefore, for the above reasons, development under the Plan with the proposed street network changes, in combination with past, present and reasonably foreseeable development in San Francisco, would result in ***less-than-significant*** cumulative construction-related transportation impacts.

Mitigation: None required.

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