Transbay Program

Re-evaluation of Final Supplemental Environmental Impact Statement

May 2023

TJPA

U.S. Department of Transportation
Federal Transit Administration

TRANSBAY JOINT POWERS AUTHORITY

Transbay Program

Re-evaluation of Final Supplemental Environmental Impact Statement

Prepared for: Transbay Joint Powers Authority

Federal Transit Administration

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Acronyms and Abbreviations

2004 FEIS/EIR	2004 Transbay Terminal/Caltrain Downtown Extension/Redevelopment Project Final Environmental Impact Statement/Environmental Impact Report
2018 Final SEIS/EIR	2018 Final Supplemental Environmental Impact Statement/Environmental Impact Report
AC Transit	Alameda-Contra Costa Transit
APE	area of potential effects
APTA	American Public Transit Association
ARDTPs	Archaeological Research Design and Treatment Plans
AWSS	Auxiliary Water Supply System
BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Rapid Transit
bgs	below ground surface
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CHSRA	California High-Speed Rail Authority
City	City and County of San Francisco
CO	carbon monoxide
CRHR	California Register of Historical Resources
dBA	A-weighted decibels
DPR	California Department of Parks and Recreation
DTX	Downtown Rail Extension
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
FOE	Finding of Effects
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
HSR	high-speed rail
I-	Interstate
LOS	level of service
mm	millimeter
MOW	maintenance-of-way
Muni	San Francisco Municipal Railway
NEPA	National Environmental Policy Act
NOx	nitrogen oxide
NRHP	National Register of Historic Places
$PM_{2.5}$	particulate matter – fine
POAQC	Project of Air Quality Concern
project	Transbay Terminal/Caltrain Downtown Extension/Redevelopment Project
Revised Project	2022 project as described in the NEPA Re-evaluation to the 2018 Transbay Transit Center Final Supplemental EIR

ROD	Record of Decision
RTP	regional transportation plan
SEIS	Supplemental Environmental Impact Statement
SEM	sequential excavation method
SF-CHAMP	San Francisco Chained Activity Modeling Process
SFMTA	San Francisco Municipal Transportation Agency
SFPUC	San Francisco Public Utilities Commission
SHPO	State Historic Preservation Office
SoMa	South of Market
SOP	Standard Operating Procedure
TIP	Transportation Improvement Program
TJPA	Transbay Joint Powers Authority (the CEQA lead agency)
Transbay Program	Transbay Terminal/Caltrain Downtown Extension/Redevelopment Project
Transit Center	Salesforce Transit Center
VMT	vehicle miles traveled

Chapter 1. Introduction

1.1. Background

The Transbay Program or "project" (Transbay Terminal/Caltrain Downtown Extension/Redevelopment Project) was approved by the Transbay Joint Powers Authority (TJPA) in 2004. The project includes the Downtown Rail Extension (DTX), establishment of a redevelopment area plan, and construction of a transit center on the site of the former Transbay Terminal at First and Mission Streets. The purpose of the Transbay Program is to improve public access to bus and rail services, modernize the former Transbay Terminal, improve service, reduce non-transit vehicle use, alleviate blight, and revitalize the Transbay Terminal area.

The Transbay Program is divided into two construction phases. Phase 1 has been completed and consisted of demolition of the Transbay Terminal and above-ground connections between the terminal and Interstate 80 (I-80) in 2011, and construction of the above-ground portion of the new Salesforce Transit Center (Transit Center) and the structure for the below-grade train station facilities at the Transit Center for Caltrain and future high-speed rail (HSR) in 2018. Phase 2, as approved in 2018, includes the fit-out of the below-grade train station at the Transit Center and the DTX tunnel, which will enable direct below-ground Caltrain and future HSR service to the Transit Center by extending the Caltrain line approximately 1.3 miles from Caltrain's current San Francisco terminus at Fourth and King Streets. Phase 2 also will build a new underground train station along the DTX alignment at Fourth and Townsend Streets, an intercity bus facility, and a pedestrian tunnel between the Transit Center and the Bay Area Rapid Transit (BART)/San Francisco Municipal Railway (Muni) Embarcadero Station. The project in this re-evaluation refers to the originally approved 2004 project, as revised and approved in 2019 by the Federal Transit Administration's Amended Record of Decision, to include modifications to DTX Phase 2.

1.2. Previous Environmental Documentation

The Federal Transit Administration (FTA) has served as the federal lead agency under National Environmental Policy Act (NEPA), and the TJPA has served as the lead agency under the California Environmental Quality Act (CEQA). The *2004 Transbay Terminal/Caltrain Downtown Extension/Redevelopment Project Final Environmental Impact Statement/Environmental Impact Report* (2004 FEIS/EIR) was certified in spring 2004 and the project was approved thereafter by the TJPA as the "Locally Preferred Alternative". FTA issued the Record of Decision (ROD) for the Transbay Terminal/Caltrain Downtown Extension/Redevelopment Project in February 2005. After issuance of the 2005 ROD, the TJPA identified modifications to the Transbay Program and prepared six addenda under CEQA to the 2004 FEIS/EIR, from 2006 to 2011. The Federal Railroad Administration (FRA) conducted an environmental reevaluation in 2010, in accordance with NEPA, to assess whether the 2004 FEIS/EIR provided adequate environmental analysis of the train box design and potential HSR service. The FRA issued a ROD in August 2010, adopting relevant findings from the 2004 FEIS/EIR.

Preliminary engineering for DTX Phase 2 was initially completed in July 2010. Subsequently, new design requirements by the California High-Speed Rail Authority (CHSRA), Caltrain, and the City and County of San Francisco (City), as well as other factors, added to and modified elements of Phase 2.

In 2013, consistent with Title 23 Part 771.130(a) of the Code of Federal Regulations (CFR), FTA (in cooperation with FRA and the TJPA) initiated preparation of a Supplemental EIS/EIR (SEIS/EIR), to examine changes to Phase 2 of the Transbay Program. The SEIS/EIR evaluated whether those project changes would result in possible significant environmental impacts that were not evaluated in the 2004 FEIS/EIR. The SEIS/EIR also analyzed whether new information or circumstances relevant to environmental concerns and bearing on the proposed action or its impacts would result in significant environmental impacts not evaluated in the 2004 FEIS/EIR.

The Transbay Terminal/Caltrain Downtown Extension/Redevelopment Project, with the proposed Phase 2 modifications, was described in the *2018 Transbay Transit Center Program, Final Supplemental Environmental Impact Statement/Environmental Impact Report* (2018 Final SEIS/EIR), prepared pursuant to NEPA and CEQA. The project analyzed in the SEIS/EIR consisted of the design, construction, and future operation of refinements to the previously approved Phase 2 of the Transbay Program and other transportation improvements within the City, including changes to the train box, siting of ventilation/emergency exit structures (vent structures), addition of an intercity bus facility, realignment of the station at Fourth and Townsend Streets, construction of a tunnel stub box in the Caltrain railyard, reconfiguration of trackwork south of the Caltrain railyard, and an underground pedestrian connector between the Transit Center and the BART/Muni Embarcadero Station. The TJPA Board of Directors certified the Final EIR in 2018 and then approved the Phase 2 project with the proposed modifications.

FTA issued an Amended ROD (amending the 2005 ROD) for the project in 2019. As stated in the Amended ROD, “FTA will require the project to be designed and built as presented in the 2018 Final SEIS/EIR and in the Amended ROD. Any proposed change must be evaluated in accordance with 23 CFR Section 771.129-130 and FTA must approve the change before the agency requesting the change can proceed.”

1.3. Need for Re-evaluation

Since approval of the Amended ROD by the FTA, the TJPA has reviewed and assessed the timing and need for several of the transportation improvements that are part of the approved Transbay Program. Based on this review, the DTX Phase 2 project is proposed to be modified to reduce or defer specific project components. Project components to be deferred would not be included as part of the proposed action and may be proposed at a future time, at which time, they would be subject to separate environmental review. Because of these revisions, NEPA and the FTA require a supplemental environmental review if the project is changed in any way from its description in the final NEPA document (in this case the 2018 Final SEIS/EIR), if new information or circumstances are identified, or if the project is idle for 3 years or more.

This re-evaluation addresses these questions and, more specifically, has been prepared pursuant to 23 CFR 771.129 and 23 CFR 771.130 and consistent with the FTA Standard Operating Procedure (SOP) No. 17 on re-evaluations and supplemental documents to:

- Determine whether proposed changes to the DTX Phase 2 would have significant new or changed environmental impacts not evaluated in the 2004 FEIS/EIR or 2018 Final SEIS/EIR.
- Determine whether new information or circumstance reveals significant new or changed impacts not evaluated in the 2004 FEIS/EIR or 2018 Final SEIS/EIR.
- Verify that, despite the passage of time, the 2004 FEIS/EIR and 2018 Final SEIS/EIR are still valid.

Because the 2018 Final SEIS/EIR augmented and updated the affected environment and applicable federal environmental laws and regulations from the 2004 FEIS/EIR, much of the analysis in this re-evaluation considers changes to the project and the circumstances under which the project would be implemented compared to the 2018 Final SEIS/EIR. However, as appropriate and relevant, this re-evaluation also considers changes in relation to the 2004 environmental review.

Chapter 2. Changes to the Project

2.1. 2018 Project

The project, based on FTA's Amended ROD, is described in Chapter 2 of the 2018 Final SEIS/EIR and consists of the following project components:

Phase 2 Project Components Not Changed from Original 2004 Project

- extending the alignment from the Transit Center along Second and Townsend Streets to the Caltrain Fourth and King Station
- using construction methods involving a combination of cut-and-cover and tunneling

Phase 2 Refinements Approved in 2018

- widening the throat structure at the west end of the train box, from the Transit Center to Clementina Street along Second Street
- extending the train box one block to the east side of Main Street
- realigning the underground Fourth and Townsend Street Station within Townsend Street
- relocating, adding, and modifying the vent/emergency exit structures
- constructing an underground train box (tunnel stub box) at the west end of the Caltrain railyard
- installing rock dowels along Second Street and along the curve to Townsend Street
- adding a turnback and maintenance-of-way (MOW) track between Hooper and Mariposa Streets, east of Seventh Street within the Caltrain right-of-way

Other Transportation Improvements Approved in 2018

- constructing an intercity bus facility at the Transit Center above the extended train box
- siting new taxi staging areas at the Transit Center
- constructing a new bicycle ramp, a bike storage facility, and a ramp for maintenance vehicles at the Transit Center
- adding off-hour/nighttime public parking at the Alameda-Contra Costa Transit (AC Transit) bus storage facility
- shifting a proposed underground pedestrian connector between the Transit Center and the Embarcadero BART/Muni Metro Station, from Fremont Street to Beale Street

2.2. Proposed Revisions to the Project

The current proposed revisions to the project are the result of further review by the TJPA, the San Francisco County Transportation Authority, the Metropolitan Transportation Commission, the Peninsula Corridor Joint Powers Board, the California High-Speed Rail Authority, and the City and County of San Francisco (collectively referred to as the Integrated Program Management Team, established to support the efforts of the TJPA in development of the DTX to a ready-for-procurement status). The purpose of the review was to determine whether new or revised operating conditions could improve service, alter project design, and/or reduce project costs. This review culminated in the Transbay Program Downtown Rail Extension Phasing

Study (TJPA 2021). Based on these efforts, the DTX Phase 2 project is proposed to be modified to reduce, defer, or refine the following project components:

- deferring the BART/Muni underground pedestrian connector
- reducing the size of the below-grade Transit Center train box extension and relocating the vent structure and emergency exit
- deferring the intercity bus facility, and constructing a new entrance/exit pavilion from the street level to the station below which had been included as part of the intercity bus facility
- removing the taxi staging area at the intercity bus facility
- reducing the number of tracks for train operations in a portion of the tunnel from three to two tracks
- modifying the Fourth and Townsend Street Station design
- realigning the tunnel stub box
- reconfiguring the at-grade trackwork south of the Caltrain railyard to include an additional track within the Caltrain right-of-way at the existing at-grade crossing of Mission Bay Drive and to eliminate the previously approved turnback track from the at-grade crossing of 16th Street to Mariposa Street
- modifying mitigation measures and an improvement measure previously adopted and incorporated into the Transbay Program

These revisions are summarized in Table 1 and their locations are shown in Figure 1.

Table 1. Changes to the DTX Phase 2 Project

Project Component	2004 Project	2018 Project	2022 Revised Project
Track alignment	Approved, underground from the Transit Center, along Second Street, then Townsend Street to a new Fourth and Townsend Street Station	Minor change, associated with the widened throat structure and the Fourth and Townsend Street Station	Minor change, associated with reconfiguration of the Fourth and Townsend Street Station
Alignment construction methods (cut-and-cover and tunneling)	Approved	Changed from stack drift to Sequential Excavation Method	No change
Train box (at Transit Center)	Approved	Extended one block eastward to Main Street	Reduce extension by 250 feet and terminate on TJPA parcel across the street from the Transit Center

Project Component	2004 Project	2018 Project	2022 Revised Project
Intercity bus facility	Not included	Added on street level above the extended train box	Defer and move entrance/exit pavilion from the street level to the station below. There would be no above ground intercity bus facility. If proposed in the future, the intercity bus facility would be reduced in size to fit on TJPA property and subject to separate environmental review.
Underground pedestrian connector between Transit Center and BART/Muni	Approved, under Fremont Street	Relocated to under Beale Street	Defer. If proposed in the future, this component would be subject to separate environmental review.
Taxi staging areas at Transit Center and intercity bus facility	Not included	Added	Remove taxi staging area at intercity bus facility
Bicycle ramp, bike storage facility, and ramp for maintenance vehicles at the Transit Center	Not included	Added	No change
Off-hour/nighttime public parking at the AC Transit bus storage facility	Not included	Added	No change
Vent structures	Approved	Change in siting with train box extension at the Transit Center and with realignment of the Fourth and Townsend Street Station	Minor shifts of structures at Fourth and Townsend Street Station within the Caltrain railyard and relocation of Transit Center station easternmost vent structure to the west onto TJPA parcel east of Beale Street across from the Transit Center
Throat structure	Approved	Widened; revised construction method	No change
Train tunnel	Approved with two tracks from Fourth and Townsend Street, along Townsend Street and north along Second Street to approximately Harrison Street, where there would be three tracks to the throat structure	Changed to three tracks from Fourth and Townsend Street Station to throat structure	Reduce number of tracks to two tracks between Fourth and Townsend Street Station and mid-way between Harrison and Folsom Streets along Second Street

Project Component	2004 Project	2018 Project	2022 Revised Project
Rock dowels along Second Street and along the curve to Townsend Street. and along Townsend Street to Third Street	Not included	Added installing rock dowels	No change; however, with the reduced train tunnel width, the rock dowels would not extend as far outward from the exterior surface of the tunnel
Fourth and Townsend Street Station	Included.	Realigned within Townsend Street	Modification of station design into Caltrain railyard with deeper and wider station box and platforms for high-speed trains
Tunnel stub box	Not included	Added, within the Caltrain railyard	Shorter and realigned with more of the tunnel stub box under Townsend Street
Turnback track and maintenance-of-way (MOW) track	Not included	Added	Reconfigure MOW track from the west side of the Caltrain ROW to the east side where it would connect to, and run parallel with, the turnback track; construct an additional track at an existing at-grade crossing of Mission Bay Drive and shift existing crossing gate eastward; construct new track within the Caltrain right-of-way between existing tracks, from approximately just north of Irwin Street to just north of 16th Street that, in conjunction with the additional track at Mission Bay Drive, would eliminate the need for the turnback track to extend across 16th Street and continue to Mariposa Street
Mitigation measures	Approved	Changes to some 2004 measures and adoption of new measures. The relevant measures included: • 2018 Mitigation Measure New-MM-C-GE-4 to reduce potential ground settlement from excavation and groundwater dewatering construction activities	• Minor modifications to 2018 Mitigation Measure New-MM-C-GE-4 to clarify intent and applicability

Project Component	2004 Project	2018 Project	2022 Revised Project
		• 2018 Mitigation Measure New-MM-TR-1.1 to reduce potential transportation impacts at the 16th Street at-grade crossing if Caltrain required train crossings at this location during traffic peak hours	• Modify 2018 Mitigation Measure New-MM-TR-1.1 for the proposed fourth track within the existing at-grade crossing at Mission Bay Drive
		• 2018 Mitigation Measure New-MM-TR-3.1 to reduce pedestrian and bicycle effects at the 16th Street at-grade crossing with the railroad tracks	• Remove 2018 Mitigation Measure New-MM-TR-3.1 because the at-grade crossing with the railroad tracks that resulted in pedestrian and bicyclist effects would be eliminated
		• 2018 Improvement Measure New-I-TR-1.1 to reduce pedestrian and bicycle safety effects at at-grade crossing with railroad tracks	• Modify 2018 Improvement Measure New-I-TR-1.1 to focus only on the Mission Bay Drive at-grade crossing

Notes:
AC Transit = Alameda-Contra Costa Transit
BART = Bay Area Rapid Transit
MOW = maintenance-of-way
Muni = San Francisco Municipal Railway
Project = Transbay Terminal/Caltrain Downtown Extension/Redevelopment Project
Revised Project = 2022 project as described in the NEPA Re-evaluation to the 2018 Transbay Program Final Supplemental Environmental Impact Statement
ROW = right-of-way
TJPA = Transbay Joint Powers Authority
Transit Center = Salesforce Transit Center

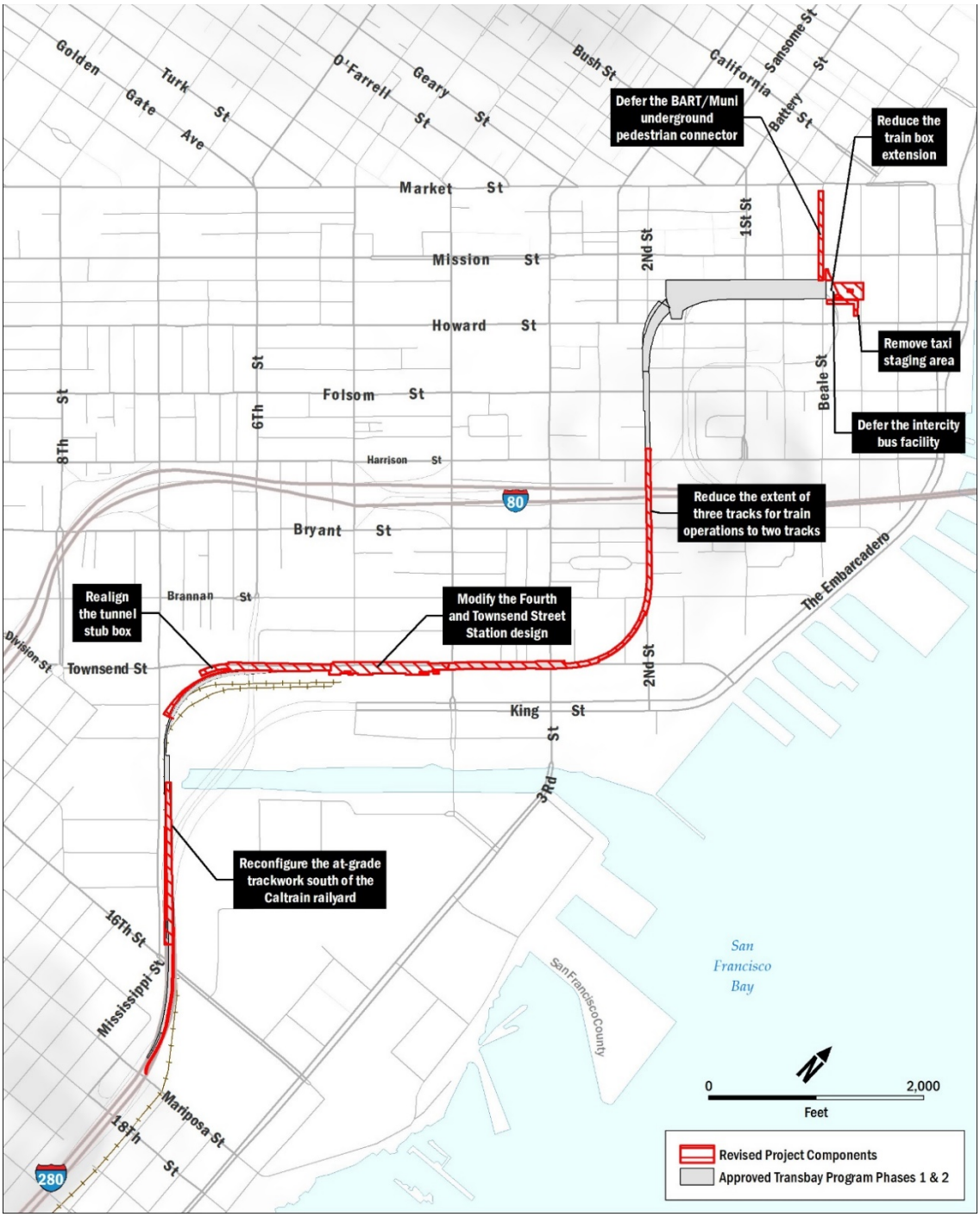

Figure 1. Revised Project Component Locations

Defer the BART/Muni Underground Pedestrian Connector

Project. The project included an underground pedestrian tunnel following Beale Street to provide direct connection between the Embarcadero BART/Muni Metro Station and the Transit Center (Figure 2). The tunnel, referred to as the BART/Muni pedestrian connector, would link the mezzanine level of the Embarcadero BART/Muni Metro Station with the lower concourse of the Transit Center. The purpose of the connector is to alleviate peak-hour pedestrian traffic congestion on sidewalks between Mission and Market Streets caused by passengers transferring between the two stations. According to estimates prepared by the TJPA in 2012, projected daily use of the pedestrian connector could be 13,350 transferring passengers and 33,500 neighborhood passengers. Without the connector, pedestrians could use First, Fremont, Beale, and Main Streets, as they do currently to move between the stations. Neighborhood passengers that account for the larger proportion of projected pedestrian volumes come from the financial district north of Market Street and the Transit Center District and Rincon Hill neighborhoods south of Market Street and could use any of the six north-south streets between The Embarcadero to the east and First Street to the west.

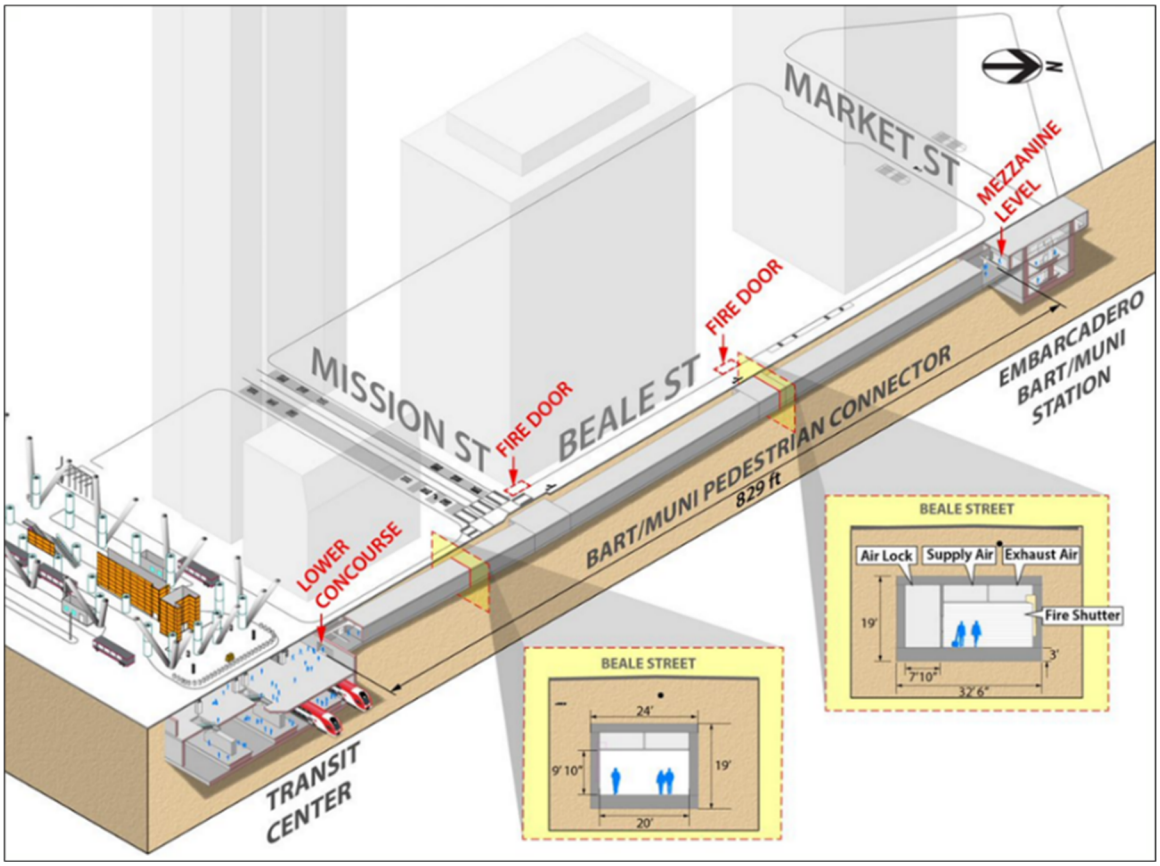

Figure 2. BART/Muni Pedestrian Connector to be Deferred

The TJPA would not construct the underground pedestrian connector analyzed in the 2018 Final SEIS/SEIR until station improvements were made at the Embarcadero BART/Muni Metro Station and the station could accommodate the incoming passengers. Construction of the BART/Muni pedestrian connector could occur later in the future to be coordinated with BART's multi-year, phased-capacity implementation strategy and modernization concept plan for the Embarcadero and Montgomery Stations.

Description, Purpose and Need for Proposed Revision. During preparation of the 2020–2021 Transbay Program Downtown Rail Extension Phasing Study (TJPA 2021), BART staff sent a letter to the TJPA expressing no objection to the deferral of the pedestrian connector, because BART's evaluation of the Embarcadero BART/Muni Metro Station capacity was in progress. BART conducted planning work on potential options to resolve (pre-pandemic) overcrowding issues at the Embarcadero BART/Muni Metro Station, which would involve station platform modifications, and therefore would affect the approved pedestrian connector. Also, BART, in partnership with the Capitol Corridor Joint Powers Authority, has begun studying a regional rail connection from the East Bay (known as Link21) that may include a station in San Francisco to address these capacity issues. BART indicates that the studies and possible station and transbay crossing concepts will be evaluated pursuant to NEPA and CEQA approximately in the 2024–2027 timeframe. Deferral of the pedestrian connector would allow BART to develop a plan to incorporate a pedestrian connection in concert with capacity-enhancing station modifications at the Embarcadero BART/Muni Metro Station.

Therefore, the TJPA proposes to defer design and construction of the BART/Muni pedestrian connector. The deferral of this DTX Phase 2 component acknowledges BART's role in determining the design and schedule for this element.

Reduce the Train Box Extension

Project. The train box (the shell of the underground train station at the Transit Center) evaluated in the 2018 Final SEIS/EIR extends to the east side of Main Street. This extension was necessary to allow tangent platforms on five of the six tracks to accommodate CHSRA double-consist trainsets. The train box extension made the new design of the train box compatible with CHSRA design standards at the time. The train box extension would require purchasing right-of-way, demolishing part of the building at 201 Mission Street, and displacing employees in the portion of the building to be removed. A ventilation and emergency exit structure at the eastern portion of the extended train box on the TJPA parcel that fronts onto Main Street is part of the project.

Description, Purpose and Need for Proposed Revision. Updated guidance from the CHSRA would allow reduced platform lengths, with several cars of the double-consist trains extending beyond the platform face, as long as the double-consists do not affect adjacent track movements (Zabaneh 2017). A TJPA feasibility analysis indicated that the train box extension could not be eliminated altogether, because space would be required for ventilation and emergency egress that could not be accommodated by the existing train box. However, a reduction in the train box extension of 250 feet would be possible, while allowing the train box to meet the space requirements to accommodate CHSRA double-consist length trainsets, fire–life safety systems, and emergency egress.

Therefore, the TJPA proposes to reduce the extension of the train box that was approved in the 2018 Final SEIS/EIR by approximately 250 feet (Figure 3). With this reduction, the train box extension would end at the TJPA property line just east of Beale Street. As a result of this reduction, no land acquisition would be required for this project component, and demolition of the lower podium portion of the building at 201 Mission Street would not occur. As part of the reduction, the vent structure and emergency exit that had been part of the extended train box at the Transit Center would be relocated to the TJPA parcel just east of Beale Street across from the Transit Center as shown in Figure 3.

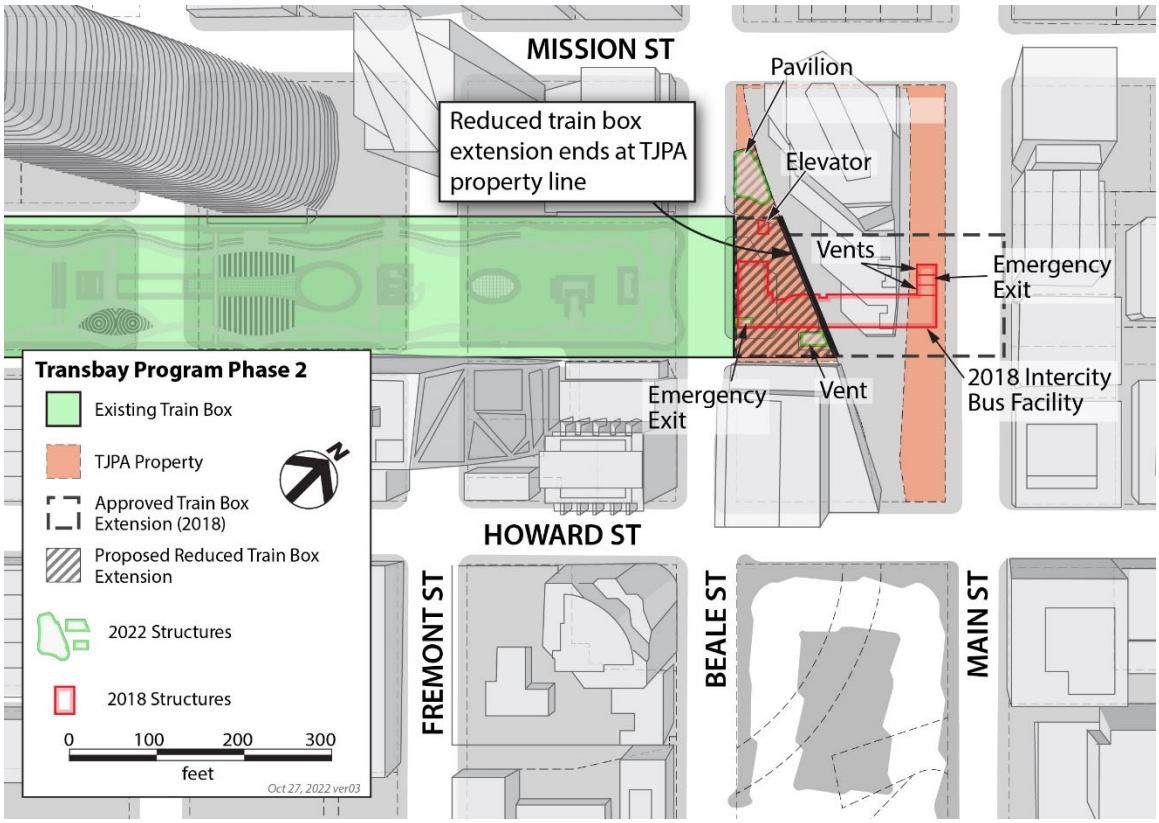

Figure 3. Proposed Reduced Train Box Extension

Defer the Intercity Bus Facility

Project. The intercity bus facility evaluated in the 2018 Final SEIS/EIR would be constructed at street level above the extended train box to accommodate regional and long-haul bus operators, such as Greyhound and Amtrak. The intercity bus facility would accommodate shuttle services and bus operations, and would expand and enhance the Transit Center's inter- and intra-regional transit linkages by connecting with the two below-ground levels of the Transit Center. Located behind the 201 Mission Street building (south side), the intercity bus facility would include 10 bus bays dedicated to regional bus services and two floors of office or residential space.

The intercity bus facility, shown in Figure 4, would be constructed across the street from the east end of the Transit Center. Buses would enter the intercity bus facility from Main Street and exit onto Beale Street. The facility would be dedicated to regional bus services, some of which currently operate from the Transit Center's bus deck under lease agreements with AC Transit, the master lease holder of the bus deck.

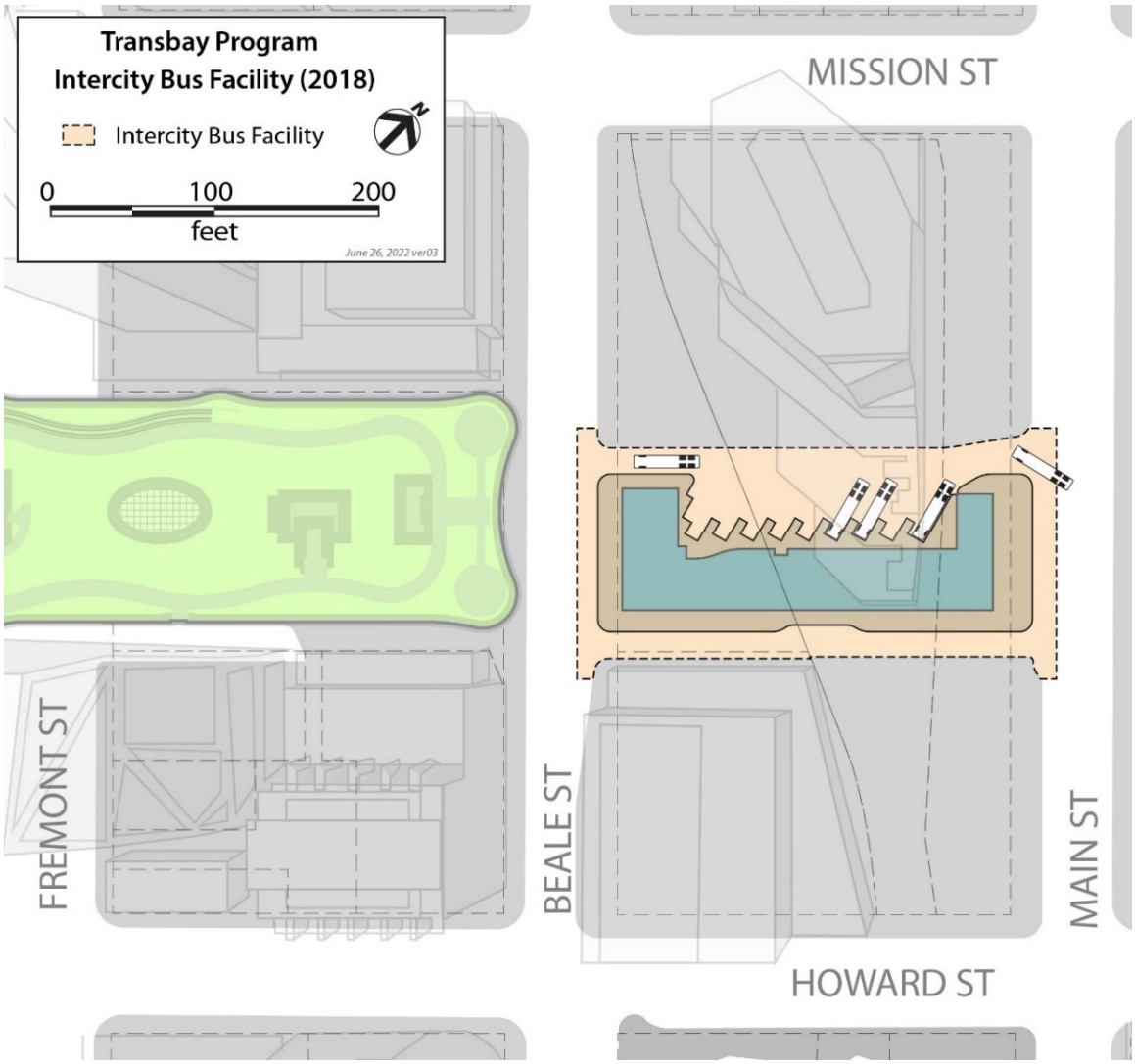

Figure 4. 2018 Intercity Bus Facility

Description, Purpose and Need for Proposed Revision. AC Transit anticipates that it will need to expand its use of the bus deck between 2035 and 2050. Currently, AC Transit leases two bus bays to Greyhound, with shared use of a third bay and an additional bus bay leased to WestCAT. Greyhound has a separate lease agreement with the TJPA for approximately 4,500 square feet of the Transit Center, for its office/ticketing area, package express operations, and passenger waiting area. Both of Greyhound's lease agreements will expire on August 31, 2029.

Because of the unknown timeline for the need for the intercity bus facility by AC Transit and other bus operators, and the proposed reduction in the train box extension, the TJPA proposes to defer construction of the intercity bus facility until a need is identified for this facility. If an intercity bus facility is proposed at a future time, it would be reduced in size above the reduced train box (described above) and restricted to the TJPA parcel across Beale Street from the Transit Center. Future design work will determine its size and operations. The TJPA would monitor changes in regional and intercity bus ridership and bus bay demand at the Transit Center, to determine whether future implementation of the intercity bus facility is warranted.

In addition, the 2018 intercity bus facility would have provided access to the Transit Center station, below. With the deferral of this facility, a new street-level entrance/exit pavilion to the Transit Center would be constructed on the TJPA parcel along Beale Street, immediately north of the site for the intercity bus facility, as shown in Figure 3.

Remove the Taxi Staging Area at the Intercity Bus Facility

Project. The project evaluated in the 2018 Final SEIS/EIR includes a taxi staging area at the intercity bus facility to provide taxi services to passengers at the intercity bus facility and persons exiting the Transit Center at Beale Street. The taxi staging area would be located along the north side of New Natoma Street between Beale and Main Streets and along the west side of Main Street between Natoma and Howard Streets, with a pick-up area on the south side of the intercity bus facility. The location of this taxi staging area is shown on the right side of Figure 5.

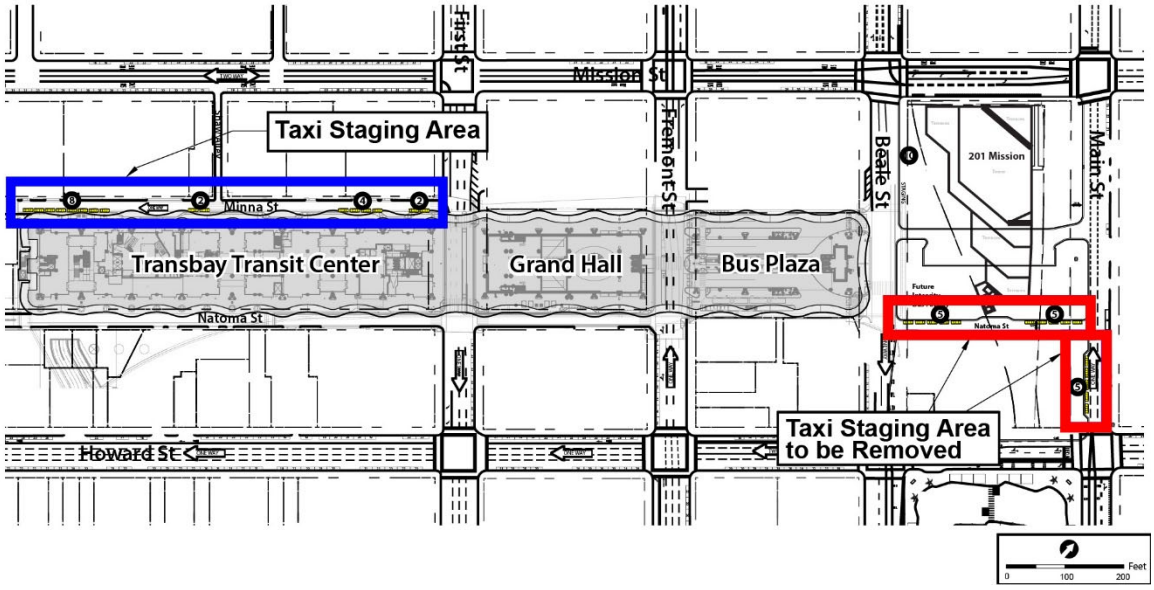

Figure 5. Taxi Staging Area at the Intercity Bus Facility to be Removed

Description, Purpose and Need for Proposed Revision. Because of the deferral of the intercity bus facility and the reduced size of a future intercity bus facility as described above, no space would be available for a taxi staging area at a smaller intercity bus facility. In addition, a taxi staging already is adjacent to the Grand Hall on Minna and Natoma Streets. Further, an increasing percentage of vehicle trips are performed by Transportation Network Companies that provide alternative taxi type service at designated pickup and drop off areas along Mission Street and Howard Street, around the Transit Center. Therefore, the Revised Project would remove the taxi staging area at the intercity bus facility.

Reduce the Number of Tracks for Train Operations from Three Tracks to Two Tracks

Project. The project evaluated in the 2018 Final SEIS/EIR includes a three-track tunnel configuration from the Fourth and Townsend Street Station along Townsend Street to the throat section on Second Street in the vicinity of Clementina Street.

Description, Purpose and Need for Proposed Revision. An updated operations analysis was conducted as part of the phasing study analysis in 2020, conducted by Deutsche Bahn International on behalf of Caltrain and CHSRA, to validate infrastructure requirements as new information regarding the rail operators' vehicles and operating plans were defined, and to determine whether the track configuration could be optimized to enhance rail service and/or result in reduced project costs. As part of this updated operations analysis, a longer two-track section and reduced three-track section in the tunnel were recommended, together with a proposed modification of the Fourth and Townsend Street Station design (described next).

In this configuration, the three-track section of the tunnel that would be reduced to two tracks would begin mid-way between Harrison and Folsom Streets along Second Street, continue south along Second Street, and then east along Townsend Street to Fourth Street (Figure 6). Approximately 3,900 feet of the previous three-track configuration in the tunnel would be replaced with two tracks as part of this proposed change in design. The width of tunnel for this 3,900-foot segment would decrease from 56 feet wide to less than 51 feet wide, which also would reduce the permanent easement width in this segment (Figure 7). The amount of excavation also would decrease by 67,000 cubic yards because of the reduced tunnel width in this segment.

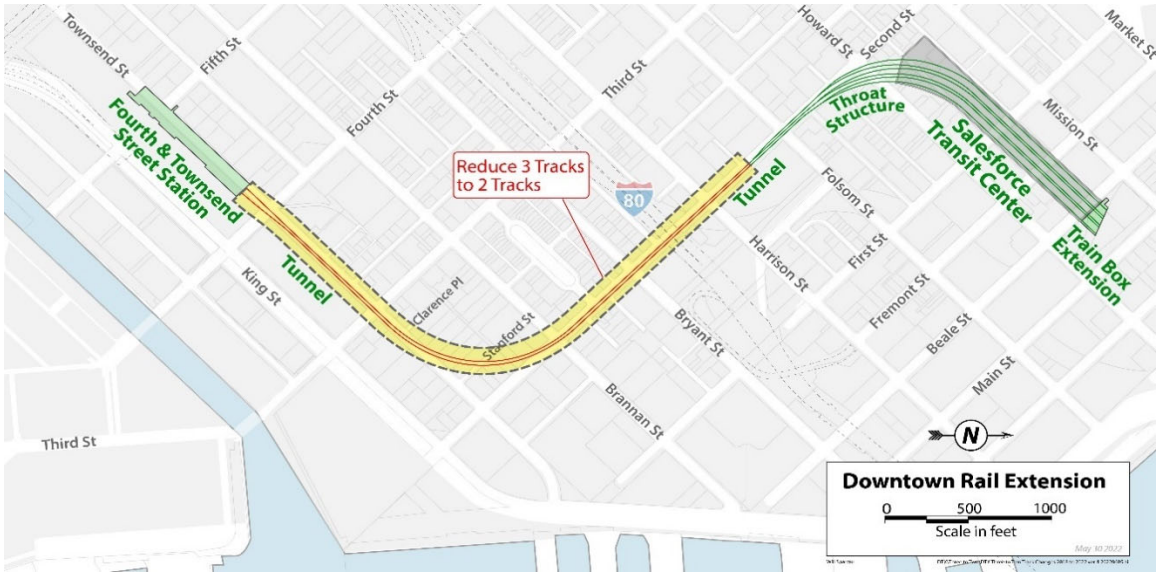

Figure 6. Three-Track Tunnel Segment to be Converted to Two Tracks

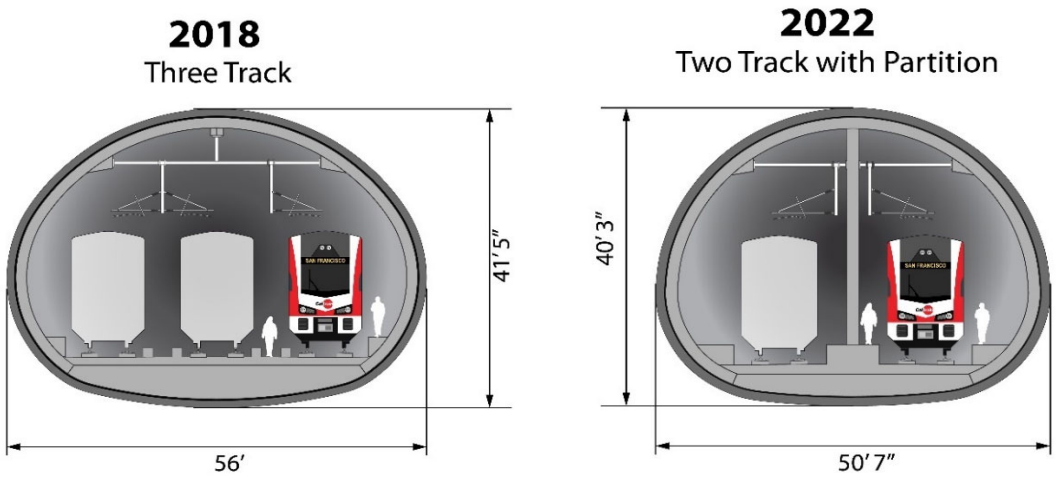

Figure 7. Cross Section of Proposed Two-Track Tunnel Segment Compared to Previous Three-Track Tunnel Segment

The reduced three-track segment within the tunnel would not change the throat structure that was approved in 2018. The updated operations analysis indicated that the reduced three-track segment of the tunnel would result in on-time operational performance, consistent with operators' established service standards. This reduction in the three-track section is made possible because of the improved performance of the Caltrain vehicle type and technology (i.e., electric multiple units that are self-propelled vehicles using electricity) from that previously assumed, and the modification of the Fourth and Townsend Station, as described below.

Modify the Fourth and Townsend Street Station Design

Project. The project evaluated in the 2018 Final SEIS/EIR includes a realigned Fourth and Townsend Street Station. The underground station design at Fourth and Townsend Streets would be lowered and realigned along and underneath Townsend Street, a mezzanine would be added, and the tunnel would be lengthened. The realignment would shift the station slightly north from the previous DTX station plan and profile, which was oriented diagonally partially under the Caltrain railyard and partially under Townsend Street (Figure 8). The 2018 station includes Caltrain tracks on either side of a center platform and a passing track for CHSRA trains that would pass through the station without stopping (Figure 9).

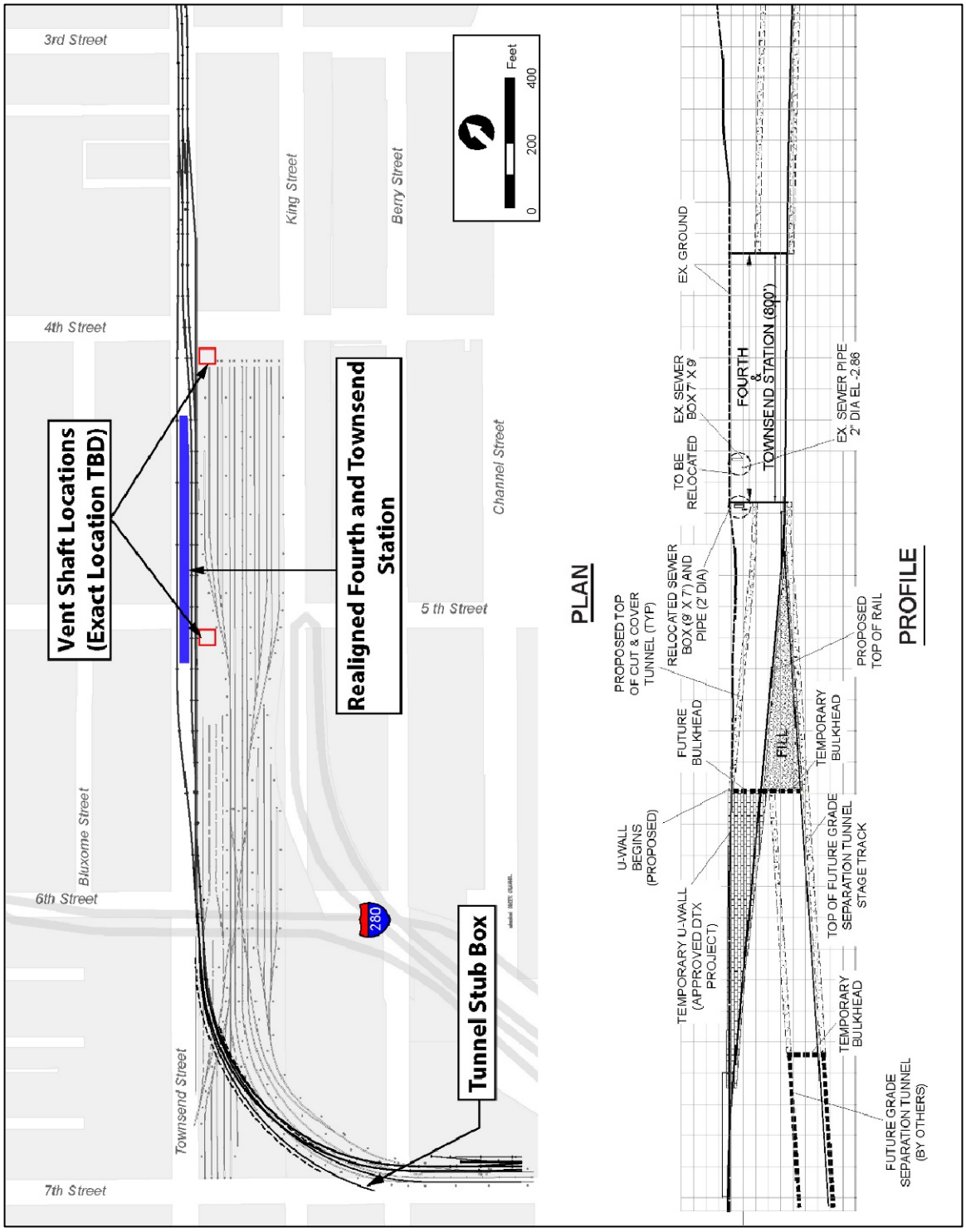

Figure 8. 2018 Fourth and Townsend Street Station Plan and Profile to be Modified

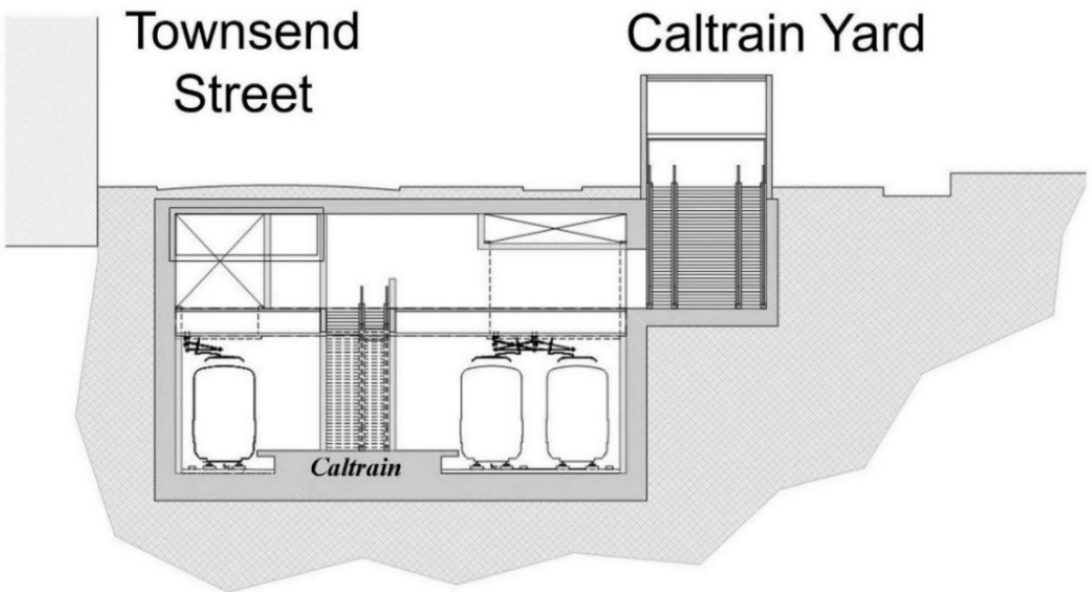

Figure 9. 2018 Fourth and Townsend Street Station Design

Description, Purpose and Need for Proposed Revision. CHSRA has determined that high-speed trains would stop at the Fourth and Townsend Street Station (CHSRA 2020 and 2022a). The station layout and trackwork would be modified to include two tracks serving one center platform for Caltrain passengers and two side platforms serving CHSRA passengers (Figure 10). The modified Fourth and Townsend Street Station design would allow service for both Caltrain and CHSRA with dedicated platforms, eliminating conflicting inbound and outbound train movements in the throat section and enabling the reduced three-track segment in the tunnel as described above. To maintain Caltrain as the regional rail service and support HSR as the intercity rail service, HSR trains would disembark passengers at the Fourth and Townsend Street Station on northbound (inbound) trips toward the Transit Center, but would not pick up passengers at the Fourth and Townsend Street Station. Northbound Caltrain riders could transfer to a southbound HSR train at the Fourth and Townsend Street Station, but would remain on Caltrain if headed north (to the Transit Center). In the opposite, southbound (outbound) direction (away from the Transit Center), HSR trains would pick up passengers at the Fourth and Townsend Street Station, but passengers would not be able to disembark. The changes to the trackwork, the addition of platforms for HSR service, and the operational analysis were reviewed and endorsed by the Integrated Program Management Team.

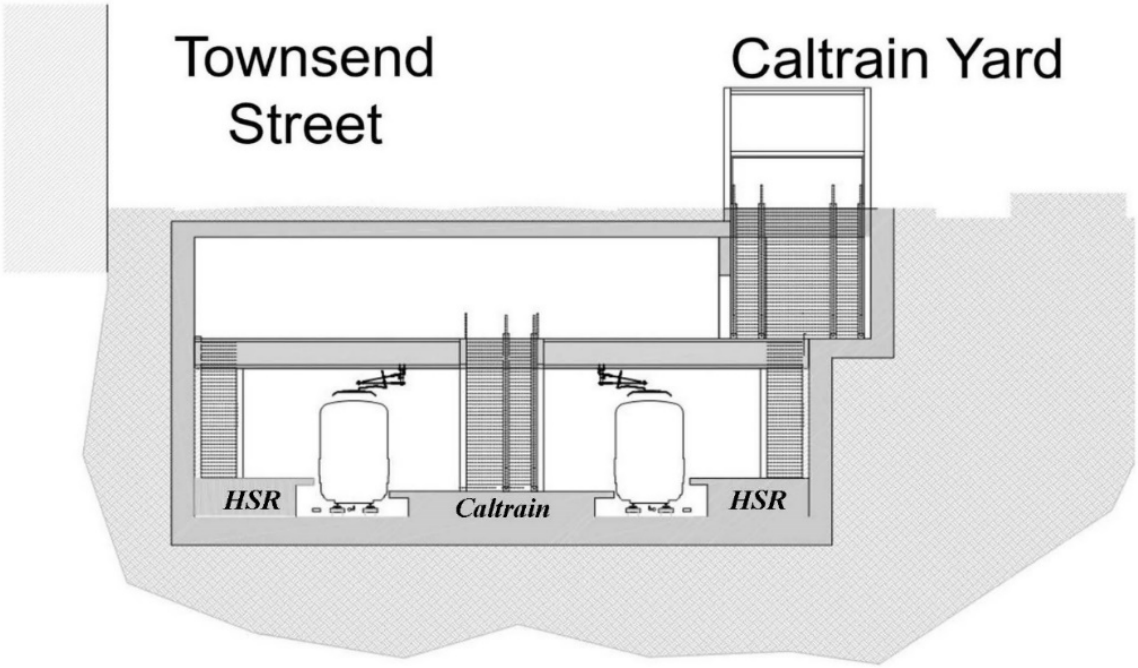

Figure 10. Proposed Modifications to Fourth and Townsend Street Station Design–Transverse Section of Change in Station Platforms

The addition of the platforms for high-speed trains would widen the station box, compared to the approved station. Along the 1,000-foot-long southern perimeter of the station box, certain sections would encroach approximately 4 feet further while other sections would encroach 16 feet further into the Caltrain railyard, creating a more rectangular footprint than the 2018 station box. The previous station design was irregularly shaped along its southern limits with the Caltrain railyard because structures for vertical circulation (i.e., stairs, escalators, elevators) and vent structures extended beyond the station train box. With this proposed change, the resulting encroachment and land acquisition would be approximately 0.29 acre more than for the 2018 station. The sections that would encroach approximately 4 feet further into the Caltrain railyard would be for the vertical circulation and vent structures, as shown in Figure 10. The 2018 project acknowledged that the siting of the vent structures was “to be determined” and was only generally identified. The current plans identify the vent structure sites more precisely, and the resulting shift has been conservatively analyzed as 4 feet further south than previously evaluated in the 2018 Final SEIS/EIR. The vent structure at the eastern end of the station would also be sited further to the west within the revised station footprint. The modified Fourth and Townsend Street Station, which would widen the station approximately 16 feet and lower it 4 feet (at the west end) to 11 feet (at the east end), would require an additional 50,200 cubic yards of excavation and disposal of spoil material, compared to the 2018 project.

Realign the Tunnel Stub Box

Project. The project evaluated in the 2018 Final SEIS/EIR includes a below-grade train box segment (referred to as the tunnel stub box) at the west end of the Caltrain railyard beneath the interim U-wall. The purpose of the tunnel stub box is to expedite future below-grade Caltrain and HSR service (i.e., the transition between the existing at-grade tracks south of the railyard and the below-grade Fourth and Townsend Street Station), and to preserve future options regarding grade separations. The tunnel stub box that was evaluated in the 2018 Final SEIS/EIR and approved would be south of Townsend Street between Sixth and Seventh Streets within the

Caltrain railyard. The underground construction for the tunnel stub box described in the 2018 Final SEIS/EIR is shown in magenta in Figure 11. In the future, when an underground tunnel is constructed to avoid at-grade crossings between the mainline tracks and surface streets south of the Caltrain railyard (which is a separate project under study by the San Francisco County Transportation Authority, and is not part of the DTX project), the interim U-wall portion could be demolished and the tunnel stub box could be outfitted with tracks, systems, and other required elements.

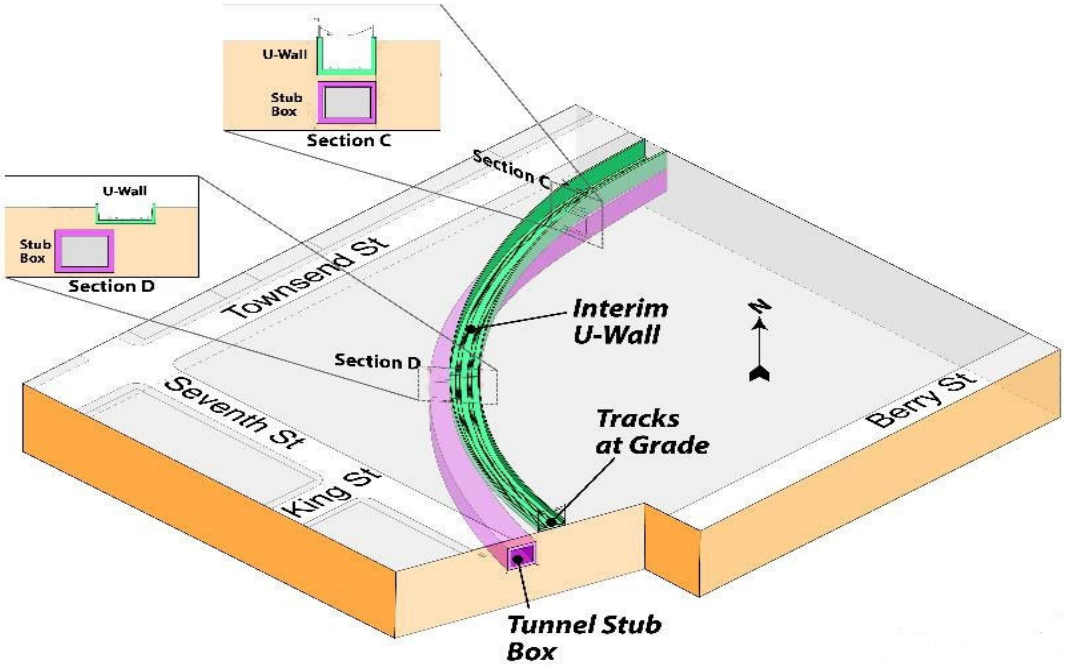

Figure 11. 2018 Tunnel Stub Box at Caltrain Railyard

Description, Purpose and Need for Proposed Revision. In furthering design of the Fourth and Townsend Street Station and analyzing the operational impacts of the future grade separation tunnel, the tunnel stub box alignment has been refined. The modifications would alter its alignment so that it would be shorter, adjacent to the U-wall rather than underneath it, and partially underneath the Townsend Street right-of-way. The tunnel stub box would be underneath one-half of the width of Townsend Street between Fifth and Sixth Streets and underneath one traffic lane of Townsend Street between Sixth and Seventh Streets, for a total length of approximately 1,000 feet. Only the south side of Townsend Street adjacent to the Caltrain railyard would be affected by the realigned tunnel stub box (stub box shown in pink in Figure 12). During the cut-and-cover construction of the tunnel stub box, street-level decking would be laid on Townsend Street, to allow continued vehicular access. No modifications to the U-wall would be required to realign the tunnel stub box.

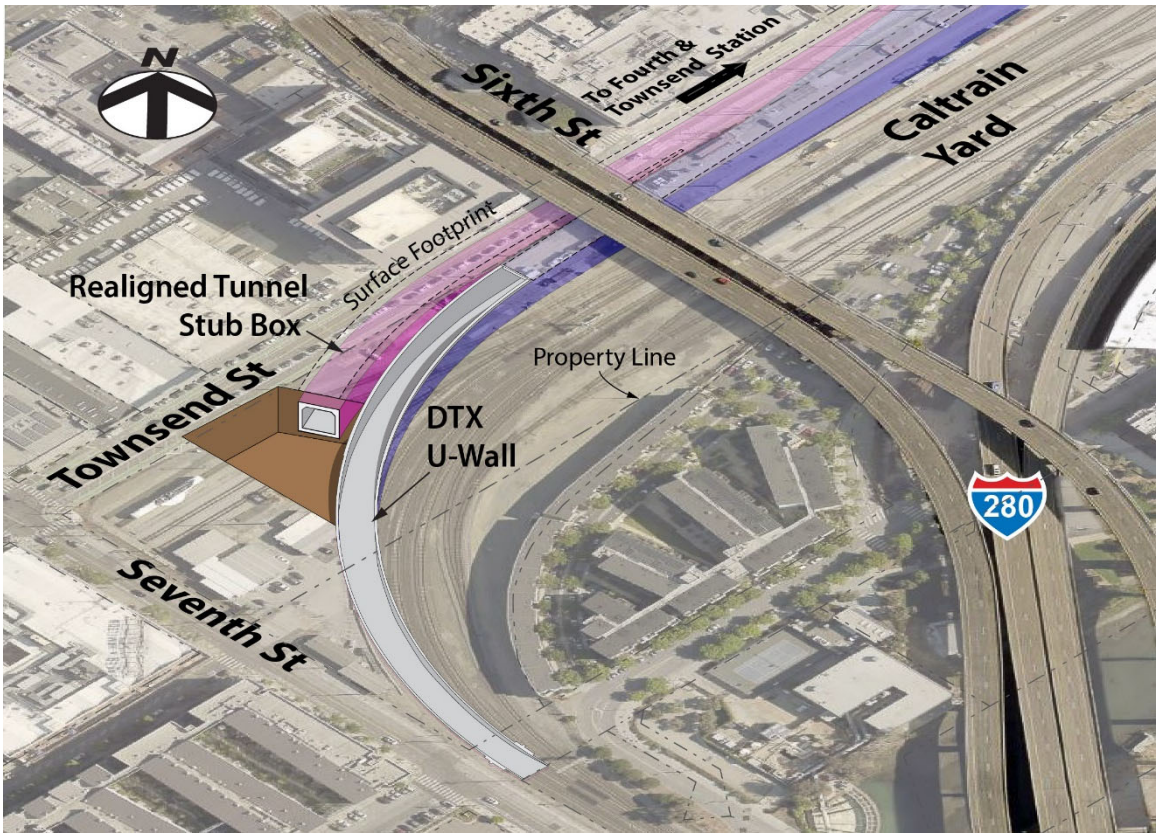

Figure 12. Proposed Realigned Tunnel Stub Box

The proposed realignment of the tunnel stub box to be adjacent to the U-wall would enable both to be used at the same time. The U-wall would be available for trains to move from the railyard into the tunnel, and the tunnel stub box would provide access into the tunnel by a future underground connection for Caltrain and HSR. The rationale for constructing the tunnel stub as part of the Revised Project is the same as presented in the 2018 Final SEIS/EIR; which is to support the future arrival of below-grade Caltrain and high-speed rail service, and to preserve future options regarding grade separations. The proposed alignment would require less excavation than the previous project because of the shallower tunnel stub box. In addition, the proposed alignment of the U-wall and tunnel stub box would allow Caltrain service and movements between the railyard and the tunnel to continue with minimal disruption when the future underground connection is constructed through the western portion of the Caltrain railyard.

Reconfigure At-Grade Trackwork South of the Caltrain Railyard

Project. The previous project evaluated in the 2018 Final SEIS/EIR includes an at-grade turnback track on the east side of the existing mainline tracks within the Caltrain right-of-way, from Hubbell Street on the north, extending southward for approximately 1,400 feet under the elevated I-280 freeway across 16th Street, and terminating at Mariposa Street (Figure 13). Caltrain trains from the Caltrain railyard would travel south along the track lead, onto the mainline track, and onto the turnback track at Hubbell Street.

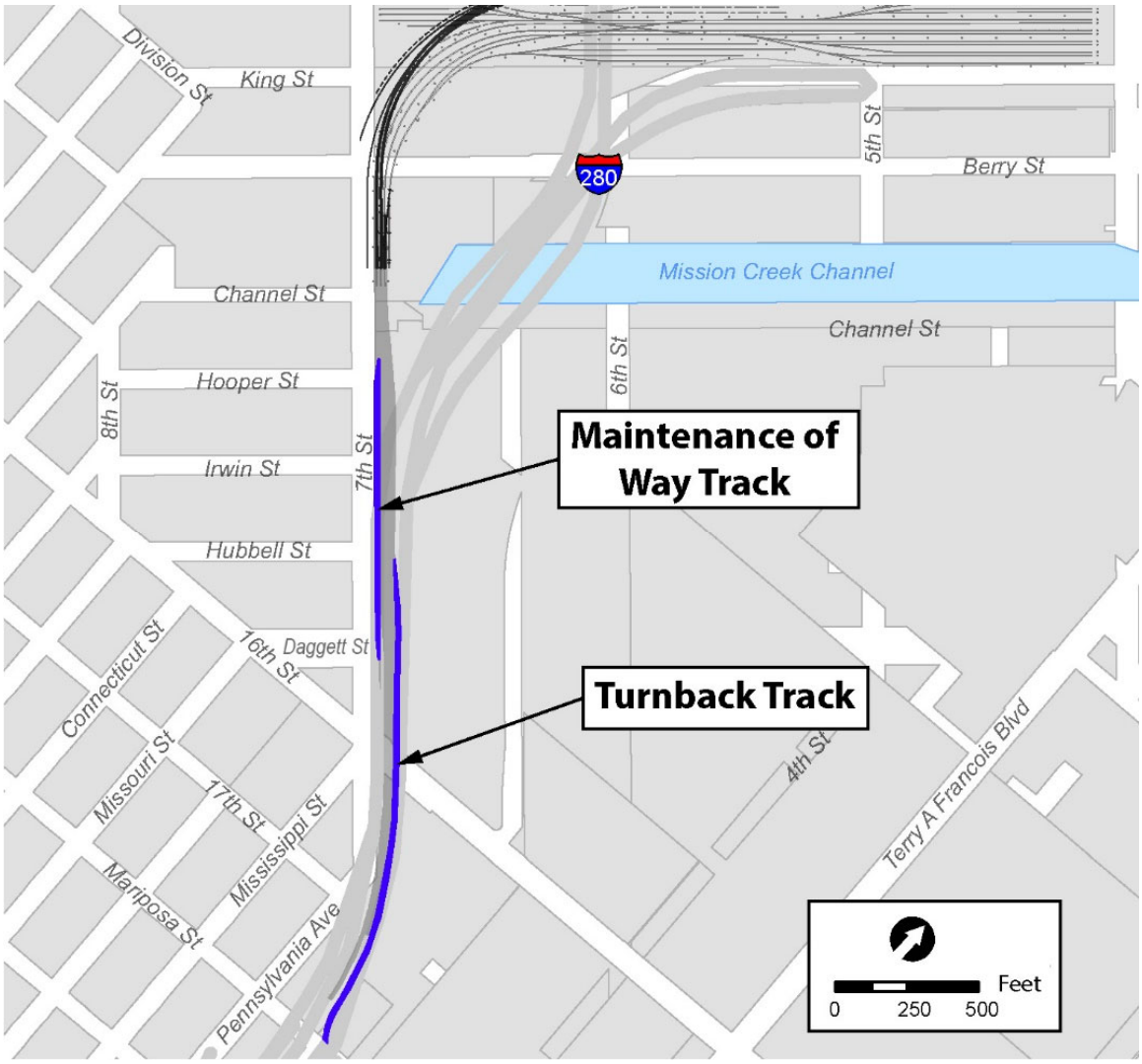

Figure 13. 2018 Trackwork South of the Railyard

Trains would continue south along the turnback track, crossing 16th Street at-grade, until Mariposa Street. Trains then would proceed north, back along the turnback track, and would transition onto the mainline heading toward the Transit Center. The same movements would be followed in reverse to move trains from the Transit Center to the Caltrain railyard. The turnback track would cross 16th Street at grade, but would not cross Mission Bay Drive to the north or Mariposa Street to the south.

The 2018 project also includes a MOW storage track. This track was planned to be constructed on the west side of the main tracks within the Caltrain right-of-way, beginning at Hooper Street on the north and extending southward to Daggett Street for approximately 850 feet. The MOW storage track would be used for equipment storage, needed for railway maintenance. The MOW track would not cross any through streets.

Description, Purpose and Need for Proposed Revision. In furthering the design of the at-grade trackwork south of the Caltrain railyard, the TJPA and Caltrain have agreed that relocating the MOW track from the west side of the mainline tracks to the east side, where it would connect and run parallel to the turnback track, would allow more efficient train movement

between the railyard and the Transit Center. This reconfiguration would include an additional track at the existing at-grade crossing of Mission Bay Drive within the Caltrain right-of-way (the red-colored track in Figure 14), resulting in four tracks at this crossing compared to the three existing Caltrain tracks. The additional, fourth track could be used to access either the MOW or turnback track. It would be at a slight angle (further from the other tracks at the south end) and would require moving the east side railroad crossing gate further east along Mission Bay Drive by approximately 9 feet. To facilitate train operations, a new crossover track also would be added between the existing tracks at the Mission Bay Drive crossing (the green-colored track in Figure 14). A crossover track is a special trackwork element that allows trains to move from one track to another as directed by the central train control dispatch and the signaling system. The westbound Mission Bay Drive vehicle signal stop line is east of Berry Street; signal timing along Mission Bay Drive at Berry Street is interconnected with the timing at Seventh Street and allows vehicle clearance on the track. The red-colored track (see Figure 14) would connect to two existing, MOW tracks on the east side of the Caltrain right-of-way that would be upgraded for use as a MOW or turnback track.

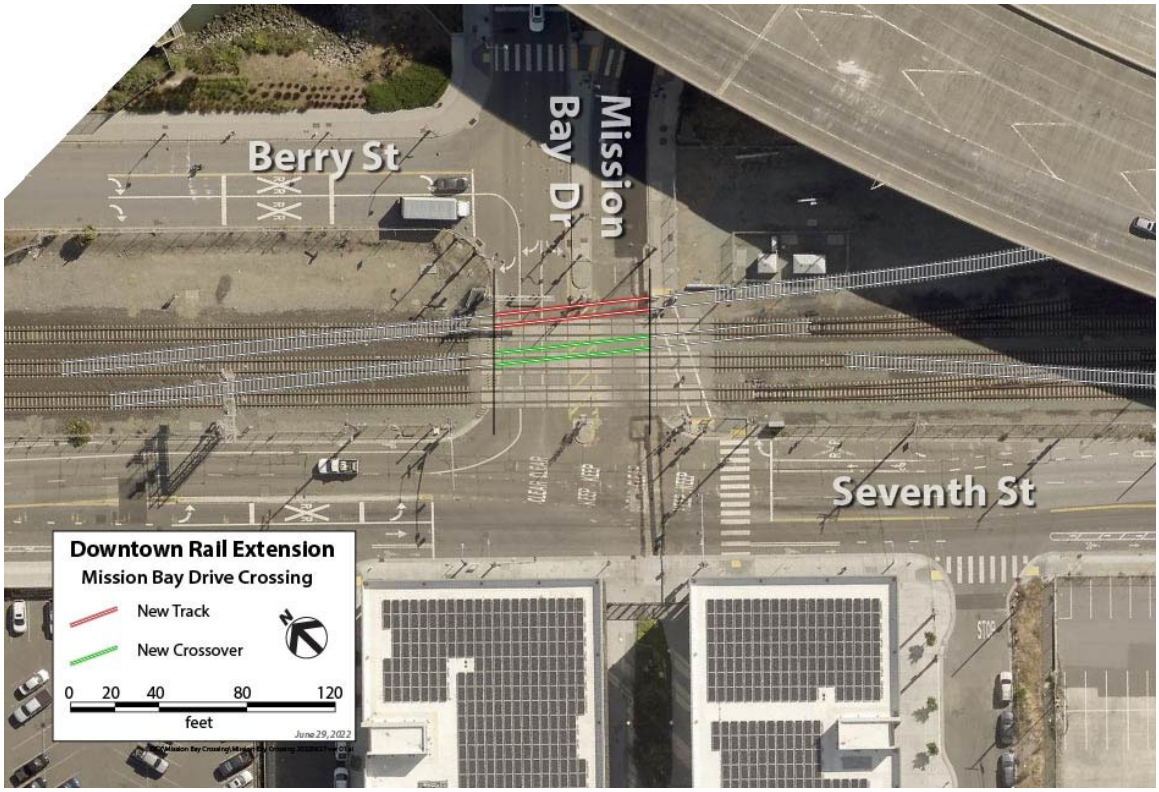

Figure 14. Proposed Reconfiguration of At-Grade Trackwork at Mission Bay Drive

Trains would continue to use the existing tracks at the Mission Bay Drive grade crossing for routine revenue service, while use of the additional MOW/turnback track would occur only during off-peak hours. Caltrain is working to identify the number of off-peak movements for the additional track at Mission Bay Drive based on the Caltrain Business Plan.

In addition to the changes to the trackwork at Mission Bay Drive, another new track within the Caltrain right-of-way between existing tracks, from approximately just north of Irwin Street to just north of 16th Street, would be constructed to provide operational flexibility. This project modification was developed by TJPA in collaboration with Caltrain, and would, in conjunction

with the additional track at Mission Bay Drive, eliminate the need for the turnback track to extend across 16th Street and continue to Mariposa Street. Figure 15 shows this new track, as well as the new track across Mission Bay Drive described above.

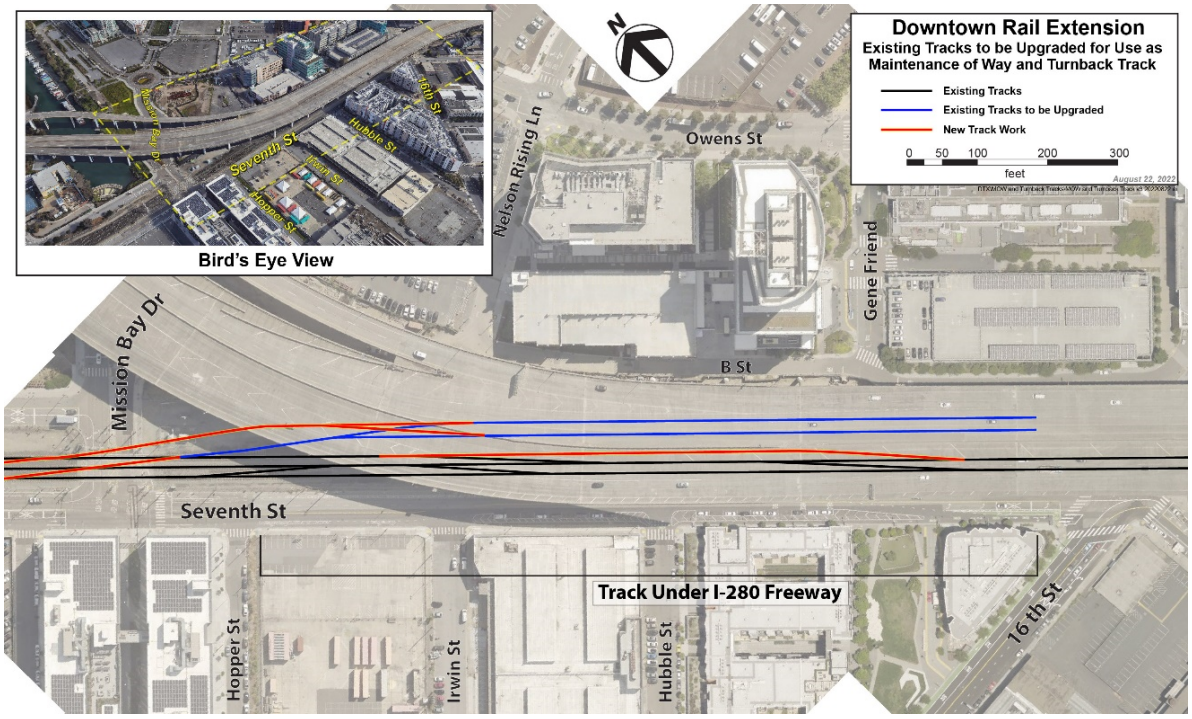

Figure 15. Proposed Reconfiguration of At-Grade Trackwork South of the Caltrain Railyard

Modifications to Mitigation Measures and an Improvement Measure Previously Adopted and Incorporated into the Transbay Program

Project. The 2004 FEIS/EIR and the 2018 Final SEIS/EIR identified mitigation measures to address significant impacts from the project. After approval of each of these environmental documents, the identified mitigation measures were adopted and incorporated into the Transbay Program by the TJPA. The 2018 Final SEIS/EIR evaluated impacts on geology, soils, and seismicity, and found that during excavation, there was a risk of ground settlement. Implementation of 2018 Mitigation Measure New-MM-C-GE-4.1 was included to minimize the adverse effect.

The 2018 Final SEIS/EIR also included 2018 Mitigation Measures New-MM-TR-1.1 and New-MM-TR-3.1 to modify signal operations and safety features at the 16th Street intersection with Seventh Street/Mississippi Street, the Caltrain tracks, and Owens Street. These mitigation measures were adopted to reduce the transportation impacts related to traffic congestion and delays and to pedestrian and bicyclist safety that resulted from the turnback track at-grade crossing of 16th Street. In addition, the 2018 Final SEIS/EIR included 2018 Improvement Measure New-I-TR-1.1 to further reduce impacts to traffic at the at-grade crossing of the turnback track.

Description, Purpose and Need for Proposed Revision. Since the 2018 Final SEIS/EIR was completed, further geotechnical engineering review of the project has been performed, and, based on this review, the 2018 Mitigation Measure New-MM-C-GE-4.1 is proposed to be

revised to clarify its intent with respect to control of groundwater levels to limit damage to buildings.

The mitigation measure text revisions are shown in strikeout (text deletions) and underline (text additions) below.

> **New-MM-C-GE-4.1** – *Groundwater Control during Construction.* Groundwater control shall be implemented to reduce ground instability in the construction area, where excavations encroach into the prevailing groundwater table. The measure is consistent with the provisions and performance criteria regarding groundwater level and pressures in the DTX Design Criteria (Section 9.5 Groundwater Control in Chapter 9, Geotechnical Requirements). The contractor will install equipment to maintain groundwater conditions, while measuring the ground deformations and groundwater behavior to verify that the work meets the performance requirements as follows:
>
> - For excavations with the cut-and-cover technique, the groundwater level within the footprint of the excavation shall be maintained a minimum of 2 feet or more beneath the bottom of the excavation throughout construction to minimize the potential for failure of the base of the excavation due to high groundwater seepage at construction sites. ~~The groundwater level outside of the excavation footprint shall remain unchanged.~~ Groundwater levels outside the excavation shall be controlled so that they do not induce damage to surrounding structures or infrastructure beyond that which can be described as "slight" as defined in Table 1–Classification of Visible Damage to Walls with Particular Reference to Ease of Repair of Plaster and Brickwork or Masonry (Son and Cording 2005). Slight damage is characterized by visible cracks (1–5 mm) that can be filled easily, may require some repointing to ensure weathertightness, and with redecoration required.
>
> - For excavations with the SEM construction method in rock, groundwater intrusion into the tunnel excavation is expected to be minimal and localized at joints in the rock. Groundwater seeping into the excavation shall be controlled locally by panning and piping channel inflows to sump pumps~~located in the portal area~~.
>
> - For excavations with the SEM construction method in soft ground conditions (i.e., sands and clays), the groundwater level shall be locally drawn down to below the bottom of the excavation in order to increase the strength of the ground and reduce potential ground instability.

Because of the proposed reconfiguration of the trackwork south of the Caltrain railyard, the turnback track would no longer cross 16th Street and extend south to Mariposa Street. As a result, the significant transportation impacts from this at-grade crossing reported in the 2018 Final SEIS/EIR would not occur and the need for 2018 Mitigation Measure New-MM-TR-3.1 for the 16th Street crossing would not be required. As described below, New-MM-TR-1.1 would be revised to address the proposed Mission Bay Drive crossing. In addition, 2018 Improvement Measure New-I-TR-1.1 would be revised to remove language related to the 16th Street at-grade crossing and focus solely on the Mission Bay Drive at-grade crossing. The mitigation/improvement measure text revisions are shown in strikeout (text deletions) and underline (text additions) below.

> **New-MM-TR-1.1** – Modify Signal Operations at the Mission Bay Drive~~16th Street~~ Intersection with Seventh Street~~/Mississippi Street~~, the Caltrain tracks, and Berry~~Owens~~ Street. If Caltrain's service and operations plan requires the use of the MOW/turnback

track during the AM/PM peak hours in the future, prior to Caltrain making any such changes, the TJPA, in conjunction with Caltrain, shall conduct further traffic and train operation analysis of the turnback and maintenance of way tracks to evaluate traffic operations along Mission Bay Drive at 16th Street at Seventh/Mississippi Street, the Caltrain MOW/turnback track, and BerryOwens Street. Changes to the PCEP OCS and specialty trackwork, such as control points, switches, and train signals, will be undertaken by the TJPA to allow Caltrain to continue its operations at the level of service defined in the PCEP EIR. In addition, if the traffic/train operation analysis shows that the traffic delays attributable to the gate downtime during the AM/PM peak hours would increase at Mission Bay Drive and Seventh/Mississippi Street or at Berry Owens Street (already operating at LOS E and F) such that the overall intersection would operate at unacceptable LOS E or LOS F, v/c ratio would worsen by more than 10 percent (i.e., a v/c ratio increase of more than 0.10), then improvements shall be implemented to restore operations to the LOS of the intersection at the time of the train/traffic operation analysisso the resulting v/c ratio is no greater than 10 percent above the v/c ratio without use of the turnback track during the AM/PM peak hours. Actions or improvements that could achieve the performance standard, either individually or in combination, include but are not limited to:

- Signal timing adjustments;
- Signal phasing modifications;
- Lane reconfiguration/re-striping in conjunction with phasing modification;
- Left-turn pocket lengthening;
- Pre-empt, pre-signal or queue cutters provision or modification as necessary to manage queues; and/or
- Other improvements identified in the future due to technology advancement.

The TJPA and Caltrain shall coordinate with the City and shall be responsible for reasonable costs of design, permitting, and construction of the necessary improvements at thisese crossings to attain the v/c performance standard. These changes to the crossing will also satisfy the performance standard for safe pedestrian and bicycle circulation identified in New-MM-TR-3.1.

New-MM-TR-3.1 – *Modify 16th Street Intersection with the Caltrain and turnback track to provide a safe crossing for pedestrians and bicyclists*. At the time of the construction and operation of the proposed turnback track, the Caltrain electrification project (including mitigation measures adopted by Caltrain for this intersection), SFTMA's 22 Fillmore Transit Priority Project, and the Warriors Arena project may have been implemented. The combination of these projects will modify the intersection configuration and operation at the time of the proposed project. As a result, the TJPA is using a safety-based performance standard, explained below, to guide future improvements for pedestrian and bicyclist safety. At the time of final design, the TJPA shall determine the then-current overall time required by pedestrians and bicyclists traveling along 16th Street to cross the Seventh Street/Mississippi Street intersection, the Caltrain mainline tracks, and the turnback track, and the TJPA shall coordinate and consult with Caltrain, the California Public Utilities Commission, and the City to identify the changes to the intersection and grade crossing warning devices, including signal timing, that are needed to provide adequate time, as determined by the Institute of Transportation Engineers,

~~Caltrans, and the City, for pedestrians and bicyclists to safely cross the widened intersection that results from the construction of the turnback track. The TJPA shall commit to implementing changes necessary to protect pedestrians and bicyclists from potential safety issues, prior to operation of the new turnback track. Specific changes are expected to be determined during final design, which will be after the location of the crossing gates for the turnback track along 16th Street has been determined and based on the then-current signal timing at that time and which is expected to account for other major development and transit projects in the vicinity. The changes to the intersection due to the turnback track will be included in the design specifications for the project. Possible improvements that may attain the above performance standard include:~~

~~Adjust signal timing for the warning devices and adjacent traffic signals. The warning phase before the gates start to come down shall be extended to take into account the additional time needed for pedestrians and bicyclists to clear the track zone based on industry standards (such as the Caltrans California Manual on Uniform Traffic Control Devices or the Institute of Transportation Engineers' Design and Safety of Pedestrian Facilities) or City guidelines that define the walking speed of a pedestrian.~~

~~Provide sufficient refuge areas for pedestrians and bicyclists to wait while the crossing gates are down. The refuge, or waiting, area shall be sufficient to accommodate the projected pedestrians and bicyclists and be ADA compliant.~~

~~Install a smooth surface in the areas next to and between the rails to reduce tripping hazards and unintended forces on bicycle tires.~~

New-I-TR-1.1 *Traffic Improvement and Adaptive Management Plan*. A traffic improvement plan and adaptive management plan ~~will~~shall be developed for the fourth track within the existing ~~two~~ at-grade rail crossing of Mission Bay Drive and shall address the effects on the intersection~~s along the turn-back track length (~~ at Seventh~~7th~~ Street/Mission Bay Drive and Berry Street/Mission Bay Drive from the fourth track ~~16th Street/Mississippi Street/7th Street~~). This plan shall include~~, which will outline~~ all aspects of avoiding, minimizing, and compensating for all temporary and permanent impacts associated with the project. The traffic improvement plan ~~will~~shall be reviewed and approved by the City and County of San Francisco prior to implementation.

- Final monitoring requirements for the area ~~will~~shall be determined through coordination with regulatory agencies (including San Francisco, Caltrain and California High Speed Rail Authority (CHSRA)) and details ~~will~~shall be included in the improvement plan approved by the City and County of San Francisco. A minimum of two monitoring events of the compensatory mitigation ~~will~~shall take place after implementation for the first six years after implementation (or until CHSRA serves San Francisco whichever comes first), and one monitoring event for three additional years is required. Additional monitoring after this time period may be necessary based on impacts and any adaptive management applied.

- After each monitoring event, a report ~~will~~shall be submitted to the City and County of San Francisco which ~~will~~shall include, but not be limited to, a narrative of the site conditions, representative analysis including traffic counts, gate down time, and delays, and the performance metrics included in the traffic improvement plan~~City and County of San Francisco-approved mitigation plan~~.

Chapter 3. Environmental Re-evaluation of Pertinent 2018 Final Supplemental EIS Analyses

3.1. Introduction

This section re-evaluates certain aspects of the physical, cultural, and socioeconomic environments addressed in the 2018 Final SEIS/EIR that may have experienced substantial change or may be more likely to be affected by the Revised Project. In particular, this section updates the transportation, land use, noise and vibration, air quality, cultural resources, Section 4(f), and environmental justice sections of the 2018 Final SEIS/EIR because of new information that is pertinent to the Revised Project and its potential environmental effects.

Technical memoranda or reports that have been prepared to supplement this re-evaluation include:

- TJPA Transbay Program Final SEIS/EIR Addendum/Re-evaluation–Land Use and Planning Technical Memorandum (AECOM 2022a)
- TJPA Transbay Program Final SEIS/EIR Addendum/Re-evaluation–Socioeconomics, Population and Housing, and Environmental Justice Technical Memorandum (AECOM 2022b)
- TJPA Transbay Program Final SEIS/EIR Addendum/Re-evaluation–Transportation Technical Memorandum (AECOM 2022c)
- Transbay Program Downtown Rail Extension-Mission Bay Drive and 16th Street At-Grade Crossing Traffic Analysis Preliminary Engineering Technical Memorandum (Parsons 2022a)
- Transbay Program Downtown Rail Extension–Noise and Vibration Preliminary Engineering Technical Memorandum (Parsons 2022b)
- TJPA Transbay Program Area of Potential Effect Amendment and Supplemental Section 106 Memorandum (AECOM 2023)

The analysis considers new information that is pertinent to the Revised Project and its potential environmental effects. For example, new long-term transportation-related plans and projects being undertaken in the project area, are considered as they relate to changes in environmental setting and cumulative impacts:

- Link21 program focused on improving interregional passenger rail connectivity with a new crossing of the San Francisco Bay as a priority;
- the Pennsylvania Avenue Extension that would enable Caltrain and future high-speed trains to travel in a tunnel and avoid street-level crossings at Mission Bay Drive and 16th Street;
- Geary-19th Avenue Subway Project providing faster transit service to two of the City's heavily traveled corridors; and
- smaller, shorter term future projects, such as the Transit U Improvement Project, Transbay Howard Streetscape Improvement Project, and Minna Natoma Streetscape Project, which emphasize sidewalk widenings, traffic signal changes, and reconfiguration of travel lanes.

- The proposed modification to the underground Transbay Fourth and Townsend Street Station would include improvements so as not to preclude use by HSR trains, particularly platforms that would allow passengers to board and alight HSR trains at this station. The CHSRA's Final EIR/EIS for the HSR service between San Francisco and San Jose analyzes an interim 2029 scenario in which HSR trains would stop at the Caltrain Fourth and King Station before the DTX is completed. A Fourth and Townsend Street Station was not analyzed in CHSRA's Final EIR/EIS although it would be sited adjacent to the existing Caltrain station and the effects of the 2029 interim scenario would be expected to be the same for a Fourth and Townsend Street Station. A HSR stop at the Fourth and Townsend Street Station also was not previously analyzed by the TJPA in its prior environmental documents. Because the HSR and DTX each has independent utility and different federal lead agencies, the effects of HSR stopping at the Fourth and Townsend Street Station are discussed below in the cumulative effect analysis.

Resource Topics Not Analyzed Further in this Re-evaluation

The resource topics from the 2018 Final SEIS/EIR listed in Table 2 are not included in this re-evaluation. These topics are not examined in this re-evaluation because no known new information or circumstances exist that reveal significant new or changed effects, and the proposed changes to the DTX Phase 2 project would not have a new or substantially more severe adverse effect than reported in the 2004 FEIS/EIR or 2018 Final SEIS/EIR.

Table 2. Resource Topics Not Included in this Re-Evaluation

Resource Topic	Justification for No Further Analysis in this Re-evaluation
Wind and Shadow	The Revised Project is an underground facility with few above-ground features (at-grade trackwork, vent structures, emergency exits, and station entrances) that are identical or relocated slightly from the previous project and would not be tall enough to create wind turbulence or increase wind speeds at the street level or cast new shadows on any nearby public spaces.
Visual Quality/Aesthetics	There are no new scenic resources or vistas along the project corridor. The height and massing of development along the project corridor has intensified. The Revised Project is an underground facility with few above-ground features (at-grade trackwork, vent structures, emergency exits, and station entrances) that are identical or relocated slightly from the previous project and would not be noticeable from their previous sites, would be visually compatible with their visual setting and adjacent development, and would not affect the highly urbanized, mixed use character or streetscape along the corridor.
Biological Resources	There is no habitat that supports listed biological species requiring consultation under the federal Endangered Species Act Section 7 based on review of state databases for sensitive species, compared to those reported in the previous environmental documents. As previously reported in the 2018 Final SEIS/EIR, there would be potential disturbance from construction to nesting migratory birds where trees are present along the corridor. However, a 2018 mitigation measure that was adopted and incorporated into the Transbay Program would apply and minimize and/or avoid potential effects to migratory birds from the Revised Project. The text following this table provides more details about this measure. No other threatened or endangered species were determined to have suitable habitat along the project alignment.

Resource Topic	Justification for No Further Analysis in this Re-evaluation
Water Resources and Quality	There are no wetlands or other aquatic features requiring consideration under the Clean Water Act Section 404 or the Rivers and Harbor Act Section 10, the same as in the previous environmental documents. Furthermore, there are no new project areas within a 100-year flood hazard area subject to Executive Order 11988 regarding floodplain management, based on review of the Federal Emergency Management Agency's floodplain maps, compared to those reported in the previous environmental documents.
Geology, Soils, and Seismicity	The Revised Project would occur in the same general locations as analyzed in the previous environmental document. There are no changes to geological conditions or hazards, fault hazards, or soil limitations, compared to those reported in the previous environmental documents. The Revised Project would be designed and built to local and state building design and safety standards. It would not change or introduce effects related to geology, soils, or seismicity.
Hazardous Materials	There are no new listed hazardous materials sites based on review of the state databases for soil and groundwater contamination cases, compared to those reported in the previous environmental documents. In addition, previously adopted mitigation measures that have been incorporated into the Transbay Program would apply and minimize and/or avoid effects from environmental contamination. The text following this table provides more details about these measures.
Electromagnetic Fields	There are no new sources of electromagnetic fields or known facilities that could be affected by electromagnetic interference from the project, other than the increasing development of health care facilities in the Mission Bay South neighborhood near the at-grade Caltrain tracks, which was recognized in the 2018 Final SEIS/EIR and for which mitigation was adopted and incorporated into the Transbay Program and would thus serve to now avoid or minimize potential effects on new facilities sensitive to electromagnetic fields.
Greenhouse Gas and Climate Change	There are no changes to the alignment, system operations, number of employees, and number of stations. However, with an HSR stop at the Fourth and Townsend Street Station, ridership would be expected to increase. Therefore, the greenhouse gas emission reduction and climate change benefits associated with the project due to its effect on vehicular travel (diverting people from driving automobiles to the more efficient transit mode of travel) are expected to be greater than reported in the previous environmental documents.
Public Services, Community Services and Recreation Facilities, Safety and Security, Utilities	There are no changes to demand or access of public services or utilities and no effects related to safety and security, because the alignment, system operations, number of employees, and number of stations are the same as reported in the previous environmental documents.

Source: Compiled by AECOM 2022.
Note: An assessment of the potential effects of the Revised Project on the above resources and consideration of new information or circumstances that could have a substantial bearing on the previously reported effects is included in a 2022 CEQA Addendum to the 2018 Final SEIS/EIR (TJPA 2022b). The CEQA Addendum addresses approximately 20 resource topics related to the physical environment and includes substantial evidence to support its determination that the Revised Project would not result in new significant environmental consequences. The CEQA addendum includes information that the modifications to the project would not result in new significant impacts or substantially increase the severity of impacts on the resource topics included in Table 2, which provides additional justification why no further analysis of the above resource topics is not warranted.
CEQA = California Environmental Quality Act
EIR = Environmental Impact Report
SEIS = Supplemental Environmental Impact Statement

There is no new information and no new or changed effects for the resource topics listed in Table 2. In addition the Revised Project must adhere to the updated DTX Design Criteria that specify the design standards to which the system and its operations must comply and to the mitigation measures in the previous environmental documents that were adopted and incorporated into the Transbay Program and would apply to the construction and operation of the Revised Project. Selected design criteria and mitigation measures that apply to the above resource topics that would avoid or minimize effects are enumerated below. Because there would be no effects or no adverse effects with these measures included as part of the project, no further discussion of these topics is necessary.

Wind

- 2004 Mitigation Measure W 1 requires consideration of potential wind effects and design modifications or other control measures of buildings or structures that would exceed the City's wind hazard criterion.

Visual Quality/Aesthetics

- DTX Design Criteria Chapter 5 Civil Design addresses the design for roads, streets, landscaping, drainage, and traffic control, including the protection and restoration of infrastructure during construction, which would minimize effects to visual quality/aesthetics during and post construction.
- DTX Design Criteria Chapter 17 Electrical Systems contains a number of measures to prevent spillover light in the direction of neighboring residential and commercial properties, which would include providing lower light levels, selecting appropriate luminaries, and shielding.
- 2004 Mitigation Measures VA 1 requires construction crews working at night to direct lighting to minimize "spill over" light or glare effects on adjacent areas.

Biological Resources

- 2018 New Mitigation Measure C-BR-1.1 requires preconstruction bird surveys to avoid disturbance to potential nesting habitat and specific procedures to follow if a special-status bird or migratory bird species is found in or near any work area.

Water Resources and Water Quality

- DTX Design Criteria Chapter 5 Civil Design addresses the design for roads, streets, landscaping, drainage, and traffic control, including the protection and restoration of infrastructure during construction, which would minimize effects to water resources and water quality during and post construction.
- 2018 New Mitigation Measure CU-WQ-9.1 requires the preparation of a sea-level rise adaptation plan to protect new project facilities from potential damage to future flooding from sea-level rise.

Geology, Soils, and Seismicity

- DTX Design Criteria Chapter 9 Geotechnical Requirements addresses ground improvement methods, excavations, groundwater control, and monitoring, using standards, codes, and guidelines from organizations and references such as the Caltrain Engineering Standards, Caltrans Trenching and Shoring Manual, San Francisco Building Code, and San Francisco Regulations for Excavating and Restoring Streets to guide the development of criteria for

the soil strata and rock units, groundwater levels, potential for ground deformation, and load-bearing capacity along the corridor.

- DTX Design Criteria Chapter 10 Seismic Design contains standards and specifications to minimize geology, soils, and seismicity effects associated with groundshaking, seismic and non-seismic ground failure, shallow bedrock, and expansive soils.
- 2004 Mitigation Measure SG 1 requires TJPA to monitor adjacent buildings for movement and, if movement is detected, take immediate action to control the movement.

Hazardous Materials

- 2004 Mitigation Measure HMC 1 and HMC 6 require the TJPA to perform detailed investigations for soil and groundwater contamination prior to construction and develop a mitigation plan to dispose of contaminated soil and discharge contaminated dewatering effluent.
- 2004 Mitigation Measure HMC 9 and HMC 10 require TJPA to perform surveys for hazardous building materials (e.g., asbestos and lead-based paints) for buildings to be demolished, and if detected, to prepare abatement plans prior to demolition.

Electromagnetic Fields

- 2018 New Mitigation Measure EF-1.1 requires the TJPA to conduct site-specific electromagnetic analysis during final design to determine if sensitive electric equipment used by medical and research facilities may be affected by the project south of the Caltrain railyard and to remediate such effects.

Greenhouse Gas and Climate Change

- DTX Design Criteria Chapter 4 Environmental Requirements includes, among many other specifications, use of a new critical inundation level that is based on the 2018 State of California Sea-Level Rise Guidance (California Ocean Protection Council and California Natural Resources Agency 2018) estimate of sea-level rise in 2100 along with 100-year storm surge added to the mean higher high water elevation which would serve to minimize climate change effects.

Public and Community Services, Utilities, and Safety and Security

- DTX Design Criteria Chapter 3 System Safety and Security contains system safety management, reliability assurance, and safety certification requirements and design criteria to minimize safety and security effects, based on guidelines and references such as the California Building Code, Crime Prevention through Environmental Design, FTA Circular 5800.1 (Safety and Security Management Guidance for Major Capital Projects), National Fire Protection Association Standard 130, and the California Public Utilities Commission General Orders.
- DTX Design Criteria Chapter 6 Utilities includes standards, criteria, and guidelines of the utility owners (for example, the San Francisco Public Utilities Commission and the San Francisco Public Works Bureau of Engineering) or other industry standards for the support, maintenance, relocation, abandonment, restoration, and new construction to avoid or minimize effects on utilities and service interruptions to customers.
- 2004 Mitigation Measure GC 4 requires maintenance of sidewalks at the existing width during construction wherever feasible, but if necessary to narrow temporarily during

construction; the sidewalk would be restored to its original width during the majority of the construction period.

- 2004 Mitigation Measure Saf 3 requires the TJPA to prepare a risk analysis to determine the number of personnel necessary to maintain an acceptable level of service at Project facilities.

3.2. Transportation

3.2.1. Changes to the Affected Environment

Many changes have occurred to the transportation network in the vicinity of the DTX Phase 2 project components since the 2018 Final SEIS/EIR. These changes consist of street, pedestrian, bicycle, and safety upgrades that are part of widespread implementation of streetscape improvements, originating from various San Francisco Municipal Transportation Agency (SFMTA) plans. These improvements have been targeted to alter traffic flow (e.g., road diets and conversions to two-way traffic), enhance pedestrian safety (e.g., widened sidewalks, sidewalk bulb outs at intersections, and crosswalk striping), improve bicycle facilities (primarily new or enhanced on-street bikeways), and allow for faster and more reliable bus service (e.g., installation of transit only lanes, transit signal priority, and consolidation/relocation of bus stops). In particular, projects such as the Transit U Improvement Project, Transbay Howard Streetscape Improvement Project, and Minna Natoma Streetscape Project, would improve streetscape elements near the Transit Center including sidewalk widenings, traffic signal changes, and reconfiguration of travel lanes. These improvements are scheduled to be completed by 2025 and provide enhanced vehicular, pedestrian, and bicycle circulation around the Transit Center when the Revised Project is expected to commence construction. As such, these improvements would be part of the future baseline conditions and would result in cumulative beneficial transportation effects with the Revised Project.

During the pandemic, public transit service was curtailed and ridership dropped. Post pandemic, it is unknown how the transportation network and travel demand may shift as the work commute patterns evolve with the rise of the work-from-home lifestyle; shifts in residential development within and beyond the current commute shed; changes in tourism; and rise in virtual conventions/conferences and other large-scale events.

The 22-Fillmore bus route that travels along 16th Street across the southern end of the DTX Phase 2 project corridor is seeing ridership levels at 133 percent of pre-pandemic levels, and Muni has begun to restore service and even improve frequencies on multiple routes. As of mid-April 2022, Muni transit ridership was 67 percent of pre-pandemic levels on weekends and 54 percent on weekdays, according to a May 3, 2022 Tweet from SFMTA Director Jeffrey Tumlin. Automobile traffic is returning to pre-pandemic levels during the weekday commute periods on streets accessing the Bay Bridge on- and off-ramps; however, traffic levels generally still are lower than pre-pandemic levels and frequently exhibit less of the commute-focused peaking that was typical before the pandemic. Similarly, bicycle and pedestrian activity generally is below pre-pandemic levels, particularly during the weekday peak period and midday periods.

Although the 2018 Final SEIS/EIR used “level of service” (LOS) for transportation impacts related to congestion and delays to travel at intersections and pedestrian crowding, the use of this metric is replaced with consideration of vehicle miles traveled (VMT) in this analysis for the following reasons. In response to Senate Bill 743, the CEQA Guidelines were amended to remove automobile LOS from consideration as an environmental impact and to require use of vehicle VMT to determine a project’s transportation impacts. The San Francisco Planning

Department screens out active transportation projects from a detailed VMT analysis because they contribute to a creation or expansion of existing transit service from LOS to VMT (San Francisco Planning 2019). This analysis evaluates the Revised Project pursuant to the City's VMT screening criteria, consistent with City and statewide requirements that were adopted after completion of the 2018 Final SEIS/EIR.

3.2.2. Project Effects

The following analyses describe the changes to construction impacts from the Revised Project, to transportation impacts from the project components that would be located at the surface street level and could affect transportation conditions, and cumulative impacts.

Vehicle Miles Traveled

The Transbay Program essentially is a last-mile connection, enabling Caltrain and future high-speed train passengers to access the Transit Center, Downtown San Francisco, and the Financial District. The DTX Phase 2 would not introduce new traffic lanes or directly alter the capacity of the road network in the project area. As defined by the City's VMT guidelines, the Revised Project would qualify as an active transportation project because it would contribute to improved Caltrain service by expanding its service closer to Downtown San Francisco and enabling high speed rail to enter the Transit Center. As described above, the Revised Project would not increase physical roadway capacity in congested areas, which would support and induce additional VMT. Instead, it would improve multimodal connectivity in Downtown San Francisco and shift a substantial portion of future person trips onto the rail system from personal automobiles, contributing to an overall reduction in VMT. Similarly, the State Office of Planning and Research states in its technical advisory regarding transportation impacts in CEQA that "Transit and active transportation projects generally reduce VMT and they are presumed to cause a less-than-significant impact on transportation. This presumption may apply to all passenger rail projects, bus and bus rapid transit projects, and bicycle and pedestrian infrastructure projects" (Governor's Office of Planning and Research 2018).

Therefore, the Revised Project would not have an adverse VMT effect; rather, the Revised Project would contribute to the net VMT benefit of the Transbay Program, which include promoting higher intensity transit supportive land uses through the redevelopment plan for the lands around the Transit Center, and construction of the Transit Center that now functions as a major bus transit hub and will become a major bus/rail intermodal center with the Revised Project. A 2019 assessment of greenhouse gas emissions attributable to DTX, using the California Air Resources Board Greenhouse Gas calculator, estimated the passenger VMT reduction as one of the co-benefits of greenhouse gas emissions reductions. The calculator results showed a 9.87 billion reduction in VMT over a 50-year lifetime (AECOM 2019).

Construction Impacts

The Revised Project removes or reduces a number of components from the previous 2018 project. Specifically, the Revised Project would reduce the Transit Center station train box extension, defer the intercity bus facility and the underground pedestrian connector, reduce the number of tracks in a portion of the tunnel from three to two, reduce the size of the tunnel stub box, and reduce the length trackwork upgrades south of the Caltrain railyard for turnback and maintenance-of-way tracks. Because all of these project components would be reduced or eliminated, there would be correspondingly lesser transportation-related construction impacts because of a smaller area and scope of construction activity (particularly for below-grade construction). The smaller scope of construction activity would result in fewer truck trips for

material deliveries and haul out of excavated materials; less disruption to local circulation by motorists, pedestrians, bicyclists, and transit; shorter construction schedules; and lower safety risks related to truck movements, traffic detours, and closure of travel lanes and sidewalks.

Modification of the design of the Fourth and Townsend Street Station and realignment of the tunnel stub box would increase the area and scope of construction activities along Townsend Street, between Fourth and Seventh Streets. In this segment of Townsend Street, the Fourth and Townsend Street Station would be wider and deeper than the 2018 project, and the tunnel stub box would align with the southern half of Townsend Street rather than within the Caltrain railyard. These changes would increase truck movements along Townsend Street and impact traffic circulation, pedestrian and bicycle movements, and transit service on Townsend Street during construction. To mitigate these adverse effect construction effects on traffic circulation, the 2004 FEIS/EIR Mitigation Measures Ped 1, 2, 3, 4, 5, and 6; PC 2, 4, 5, 6, and 7; and GC 1, 2, 3, and 4 were adopted and incorporated into the Transbay Program, and would continue to remain applicable to the Revised Project. The DTX Design Criteria (TJPA 2022a) also references the SFMTA's Blue Book (SFMTA 2021), which prohibits construction activities on streets of major traffic importance and would further reduce transportation impacts. With implementation of these measures and adherence to the DTX Design Criteria, construction effects of the Revised Project on transportation would be not adverse, the same as reported in the 2018 Final SEIS/EIR.

Defer the BART/Muni Underground Pedestrian Connector

Pedestrian operations for the deferral of the underground pedestrian connector were analyzed in the 2018 Final SEIS/EIR. The analysis evaluated the pedestrian levels of services for crosswalks and street corners at the Beale Street/Market Street and Beale Street/Mission Street intersections during the weekday midday and PM peak periods under the 2040 Cumulative Condition. All crosswalks and intersection corners at the two intersections would operate at acceptable LOS D or better, except for the west crosswalk and the northeast and the northwest corners at the Beale Street/Mission Street intersection during the PM peak hour. At the Beale Street/Mission Street intersection, the west crosswalk, northeast and northwest corners would operate at LOS E during the PM peak hour.

The analysis assumes that pedestrians would use First, Fremont, Beale and Main Streets as they do now in the absence of the underground pedestrian connector. However, the vast majority of users of the pedestrian connector would be "neighborhood passengers" who come from a wider geographic area including the Financial District north of Market Street, the Transit Center District/East Cut area, and the Rincon Hill neighborhood. These individuals would likely use any of the north-south streets between The Embarcadero and First Street to approach or depart from the south end of the connector and multiple streets north of Market Street between The Embarcadero and Battery Street to approach or depart from the north end of the connector. Thus, due to the availability of multiple pedestrian routes, the actual increase in pedestrian volumes would be lower than those reported in the 2018 Final SEIS/EIR, and the effect of deferring this project component would be similar or better than evaluated in the prior environmental document.

Defer the Intercity Bus Facility

This project component would be deferred and therefore would not alter existing conditions related to activity on the surface streets and would not alter circulation for pedestrians, bicyclists, or local Muni and Golden Gate Bridge and Highway Transit District bus service. Existing long-haul bus operators, including AC-Transit, WestCAT, and Greyhound would

continue to use the bus deck of the Transit Center as they do currently. In the future, if the intercity bus facility is implemented, a separate environment review will be required to evaluate its transportation and other effects.

Reconfigure At-Grade Trackwork South of the Caltrain Railyard

Caltrain trains would use the proposed fourth track and cross Mission Bay Drive at grade to access either the MOW track as needed or the turnback track. Caltrain is working to identify the number of off-peak movements for the additional track at Mission Bay Drive based on the Caltrain Business Plan. Caltrain has committed not to use the additional fourth track during the AM and PM peak hours (7:30 a.m. to 8:30 a.m. and 4:30 p.m. to 5:30 p.m.), because Caltrain's proposed schedule at the Transit Center does not require the use of these tracks during this peak period and it would avoid impacts on peak-hour traffic. If, however, Caltrain determines that use of the fourth track may be needed during peak hours in the future, the intersection operations may worsen, resulting in unacceptable delays. To reduce this potential effect on local circulation, the adopted 2018 Mitigation Measure New-MM-TR-1.1 that was developed for the 16th Street at-grade crossing impacts would be revised to apply to the proposed fourth track within the existing Mission Bay Drive at-grade crossing.

The TJPA has conducted a traffic analysis to further evaluate the effects of the new track within the at-grade crossing of Mission Bay Drive (Parsons 2022a). The new fourth track within the existing at-grade crossing at Mission Bay Drive would be completed entirely within the Caltrain right-of-way and would not alter the geometric layout of the affected intersections at Mission Bay Drive and Seventh Street and the next intersection to the east at Mission Bay Drive and Berry Street. The additional track would require that the existing railroad crossing gate be relocated 9 feet eastward towards Berry Street. Because the westbound Mission Bay Drive vehicle signal stop line is east of Berry Street and the signal timing along Mission Bay Drive at Berry Street and Seventh Street are interconnected, which allows for vehicle clearance on the track, vehicular operations and movement along Mission Bay Drive would not be affected by the addition of the proposed fourth track. The wider crossing could still be traversed by a pedestrian and adds less than 3 seconds (based on an average walking speed of 3.5 feet/second) to the time needed for a pedestrian to complete the crossing, which is a negligible increase. Delays or disruptions to transit service also would be marginal because none of the streets (Seventh Street, Mission Bay Drive, and Berry Street) are major transit corridors, and all improvements at the crossing would be designed to applicable standards to ensure adequate safety for all roadway users, including pedestrians and bicyclists. Therefore, the impacts of the fourth track across Mission Bay Drive on transportation operations and facilities would be not adverse and would not require any modifications to the street lane or intersection geometrics.

The previous turnback track at-grade crossing of 16th Street included the adoption of mitigation and improvement measures (2018 Mitigation Measures New-MM-TR-1.1 and New-MM-TR-3.1, and 2018 Improvement Measure New-I-TR-1.1) to reduce the transportation impacts on traffic congestion, vehicle delays, and pedestrian and bicyclist safety. Under the Revised Project, the turnback track would no longer need to cross 16th Street and continue to Mariposa Street. As a result, the reported effects would be avoided, and the 2018 Mitigation Measures New-MM-TR-1.1 to reduce vehicular impacts if Caltrain elected to use the turnback tracks during the AM/PM peak hours and New-MM-TR-3.1 to minimize pedestrian and bicycle safety impacts would no longer apply to the 16th Street at-grade crossing. However, 2018 Mitigation Measure New-MM-TR-1.1 and 2018 Improvement Measure New-I-TR-1.1 would be revised to apply to the Mission Bay Drive at-grade crossing. The improvement measure was adopted as an environmental commitment and incorporated into the Transbay Program to ensure that circulation conditions at the at-grade crossing (i.e., Mission Bay Drive) would be monitored and a plan would be in place

to avoid motorist, pedestrian, or bicyclist circulation or safety impacts if Caltrain's service and operations plan requires the use of the MOW/turnback track during the AM/PM peak hours in the future. Caltrain has indicated that it has no plans or need to use the fourth track at the at-grade crossing during the AM/PM peak hours.

Modification to Fourth and Townsend Street Station

The modification to the design of the Fourth and Townsend Street Station is related to physical changes that widen the station box, primarily to accommodate platforms for future high-speed train use when service commences and extends to the Transit Center, and relocation of ancillary above-ground structures that were not well-defined at the time of the 2018 Final SEIS/EIR. As a result, similar to the 2018 Final SEIS/EIR, the effects of the station design are examined in terms of how they alter the surface circulation network. The wider station would involve a larger area of ground disturbance, extending to the north side of Townsend Street, from Fourth Street to just past Fifth Street (approximately 1,000 feet) and 4 – 16 feet further into the Caltrain railyard to the south. The disturbance to the surface circulation would occur during the construction period, and would affect pedestrians, bicyclists, motorists, transit, and emergency response vehicles. The construction-period adverse effects along Townsend Street to these various modes of travel would be reduced by the previously adopted mitigation measures that were subsequently incorporated into the Transbay Program and thus would be implemented as part of the Revised Project. These measures are identified in the earlier analysis of construction impacts.

Because the long-term operation of this station would not change with the design modifications, the effects of DTX passenger boardings and alightings on the circulation network of streets and intersections surrounding the station entrances would be the same as described in the previous environmental documents. The 2004 EIS/EIR did not identify adverse transit effects that required mitigation measures, but did identify improved travel times for passengers along the Caltrain corridor and reduced VMT. The report also concluded there would be adverse intersection delays around the Transit Center, based on the LOS criteria that were in effect at the time. Reduction of these adverse intersection traffic impacts was to be provided through an Integrated Transportation System Management System. The 2018 Final SEIS/EIR did not identify transportation impacts associated with the refinement to the Fourth and Townsend Street Station, which involved shifting the station to align along Townsend Street.

The 2018 Fourth and Townsend Street Station design included Caltrain tracks on either side of a center platform and a passing track for CHSRA trains that would pass through the station without stopping. CHSRA has determined that high-speed trains would stop at the Fourth and Townsend Street Station (CHSRA 2020 and 2022a). The proposed modification to the underground Fourth and Townsend Street Station would include improvements to accommodate HSR trains, particularly platforms that would allow passengers to board and alight HSR trains at this station. Because the HSR and DTX each has independent utility and different federal lead agencies, the effects of HSR stopping at the Fourth and Townsend Street Station are discussed below as a cumulative effect.

Cumulative Effects

Future baseline conditions in 2040 for the project area were described in the 2018 Final SEIS/EIR (Appendix C Transportation Analysis Supplement). Consistent with the City's standard approach for transportation impact analyses, background growth in travel demand, including traffic and pedestrian volumes, was derived from forecasts produced by the San Francisco Chained Activity Modeling Process (SF-CHAMP) travel demand forecasting model.

The model specifically accounts for major land use changes in the cumulative timeframe and reasonably foreseeable transportation investments.

In addition to the City's land use and transportation growth forecasts from its travel demand model, the 2018 Final SEIS/EIR included a list of development projects that had been proposed or approved but not yet constructed, as well as long-range projects and plans, such as the Transit Center District Plan, the Central SoMa Area Plan, Caltrain Peninsula Corridor Electrification Project, the Central Subway, and the HSR Business Plan. New land development projects are now proposed or planned along the project corridor; however, they are consistent with the City's adopted area plans that were already considered in the 2018 Final SEIS/EIR. New long-term transportation-related plans and projects in the project area represent new circumstances under which the Revised Project would be implemented, some of which could have cumulative effects with the Revised Project. The following transportation projects are known and have the potential to affect the cumulative effects of the Revised Project. However, for the reasons cited below, they are not included in this cumulative impact analysis.

- Link21 Program is a large-scale megaregional passenger rail effort to enhance connectivity throughout a 21-county area in northern California. It is focusing on improving interregional passenger rail connectivity with a new crossing of the San Francisco Bay as a priority. The program is in a project identification phase, during which project concepts are identified and refined based on inputs received from the public and technical analyses by BART and the Capitol Corridor Joint Powers Authority. The project selection and environmental review process will not be complete until 2027, followed by the project delivery scheduled for 2039. Although this project is reasonably foreseeable, the extent of the Link21 Program's effect on the future transportation infrastructure and service, and its possible cumulative effects with DTX are unknown at this time because the project concepts are still under development. Future transbay crossings that could be used by BART and regional rail could occur at multiple locations along the east side of the City and have substantial differences on potential cumulative effects, which at this time are remote and speculative (Bay Area Rapid Transit (BART) and Capitol Corridor Joint Powers Authority 2022). Therefore, this program is not included in the cumulative impact analysis.
- Pennsylvania Avenue Extension Project would enable Caltrain and future high-speed trains to travel in a tunnel and avoid street-level crossings at Mission Bay Drive and 16th Street. This project would provide a dedicated right-of-way for Caltrain and high-speed rail trains that would replace the portion of the tracks that currently operate at grade through the southern portion of the City. The Revised Project would be completed and start operations and not preclude a later connection to the Pennsylvania Avenue Extension. The Pennsylvania Avenue Extension is currently in the public engagement process and considering alternatives. The project does not have a certified CEQA/NEPA document nor a definitive schedule for project implementation, other than recognition that further project planning and environmental review, design, and construction would require approximately 10 or more years. The Pennsylvania Avenue Extension Project will be defined based on the public input and stakeholder engagement underway currently. Given that the project is currently in early planning stages and the alternatives are under development, the effects would be remote and speculative. Therefore, this program is not included in the cumulative impact analysis.
- Geary/19th Avenue Subway Project providing faster transit service to two of the City's heavily traveled corridors along Geary Boulevard and 19th Avenue. The alignment and stations of a Geary-19th Avenue subway have not yet been determined. This project is a component of the City's 2017 Subway Vision, "to explore the expansion of San Francisco's subway network". The Geary/19th Avenue Subway Project is currently early in its

preliminary study phase to identify potential benefits, costs, and risks of the project and to undertake initial technical coordination and policy discussions with local and regional public agencies. The San Francisco County Transportation Authority in collaboration with the San Francisco Municipal Transportation Agency, San Francisco Planning, and the City's Office of Economic & Workforce Development identified the Geary/19th Avenue Subway project as part of the ConnectSF process to build an effective, equitable, and sustainable transportation system; however, a schedule for this improvement has not yet been defined, and information regarding its future only recognizes that the planning and construction for a project of this size will be a multi-phase effort spanning many years. Given that the project is currently in early planning stages and the alternatives are under development, the effects would be remote and speculative. Therefore, this program is not included in the cumulative impact analysis.

The cumulative project that overlaps the Revised Project in timeframe, geography, and type of impact is the HSR project. The CHSRA Final EIR/EIS, certified in August 2022, for high-speed rail service between San Francisco and San Jose analyzes two future horizon years. The first future year analysis considers a 2029 scenario in which high-speed rail trains would stop at the Caltrain Fourth and King Station before the DTX is completed. The second future year analysis is for the year 2040 when DTX would be complete and both Caltrain and high-speed trains would use the Fourth and Townsend Street Station and be able to continue on to the Transit Center.

Because the first scenario assumes the DTX project is still under construction and revenue service to the Transit Center has not yet started, there would be no operational cumulative transportation effects of the Revised Project in combination with high-speed rail service for this interim 2029 scenario.

DTX construction under the Revised Project could overlap with high-speed rail operation in 2029 in the vicinity of the Caltrain railyard where construction of the tunnel stub box and the Fourth and Townsend Street Station could be underway and high-speed trains would be passing through the railyard to arrive at or depart from the existing Fourth and King Station that is currently used only by Caltrain. Revised Project construction would involve cut-and-cover construction along Townsend Street between Fourth and Seventh Streets, requiring relocation of transit stops and pedestrian/bicyclist detours. At the same time, high-speed rail passenger riders arriving and departing from the existing Fourth and King Caltrain Station would contribute to increased vehicle, bicycle and pedestrian volumes in the same area along Townsend Street. Together, DTX construction and high-speed rail operations could result in potential cumulative transportation impacts on transit access and pedestrian/bicyclist circulation. The San Francisco Planning Department assumes that construction of a project within the city would not typically create potentially adverse transportation effects because the existing city regulations (e.g., the San Francisco Regulations for Working in San Francisco Streets, San Francisco Transportation Code, and San Francisco Public Works Code) collectively and effectively reduce transportation-related construction impacts to less than significant (San Francisco Planning 2021b). Under these regulations, Revised Project contractors would be required to consult with various agencies and develop coordinated plans that would address potential construction-related impacts on vehicle circulation, and transit, bicycle and pedestrian movements near the Caltrain railyard area. In particular, a Transportation Management Plan that addresses multimodal transportation impacts during the Revised Project construction, including the identification of relocated bus stops and pedestrian/bicyclist detour routes, would be required for the Revised Project (CHS Consulting Group 2022). Based on these regulations, the DTX construction impacts would be reduced and potential cumulative impacts of Revised Project construction of

the Fourth and Townsend Street Station and tunnel stub box, and high-speed rail service to the existing Fourth and King Caltrain Station would be not adverse.

For the long-term 2040 year analysis, the CHSRA Final EIR/EIS qualitatively concluded there would be adverse cumulative impacts on bus transit service performance in the vicinity of the Revised Project's Fourth and Townsend Street Station from high-speed rail and DTX passengers, vehicle trips coming to or leaving the station, and population growth from cumulative land use development. This level of activity and growth combined with transportation network capacity improvements insufficient to keep up with demand and population growth would result in localized congestion that would impede bus operations. The CHSRA Final EIR/EIS also concluded the high-speed train and Caltrain stop at the Fourth and Townsend Street Station under the Revised Project, in combination with growth from other planned development projects supported by the Mission Bay North Plan and the Central South of Market (SoMa) Plan, would result in adverse cumulative impacts on bicycle and pedestrian circulation in the Fourth and Townsend Street Station area.

Although each of these cumulative projects and plans would contribute to the adverse transportation effects around the Fourth and Townsend Street Station, implementation of the Revised Project would be expected to account for a relatively small portion of these cumulative impacts. Under the Revised Project, a substantial portion of Caltrain and high-speed rail riders would shift to the Transit Center, away from the Fourth and Townsend Street Station area. While all of the Caltrain boardings and alightings would occur at the existing Caltrain Fourth and King Station without the Revised Project, once the Revised Project is implemented and became operational, many of the Caltrain passengers would board and alight at the Transit Center, which is closer to employment and Financial District destinations than the existing station at Fourth and King Streets. A 2018 TJPA ridership forecast report provides an analysis of Caltrain ridership with both the Fourth and Townsend Street Station and the Transit Center (Cambridge Systematics 2018). The study did not involve updated model runs, but was intended to update 2015 and 2040 Caltrain and HSR ridership and identify destinations and modes of access/egress for passengers disembarking at the Fourth and Townsend Street Station. The analysis was performed by making adjustments to update land use assumptions, Caltrain's growth in ridership, and more recent operational assumptions (six trains per hour stopping at each station). The report shows that 63.3 percent of the Caltrain riders would use the Transit Center and 36.7 percent would use the Fourth and Townsend Street Station. The 2018 TJPA report also presents an HSR ridership forecast based on the CHSRA's 2016 Business Plan and a sensitivity analysis test; however, the CHSRA has since updated the HSR ridership forecast using its 2020 Business Plan. The HSR ridership forecast based on the 2020 Business Plan shows that 89.1 percent of HSR riders would use the Transit Center and 10.9 percent would use the Fourth and Townsend Street Station.

As presented in the 2018 Final SEIS/EIR, Caltrain ridership and associated effects on automobile, transit, pedestrian, and bicycle circulation would be reduced in the vicinity of the Fourth and Townsend Street intersection with implementation of the DTX, because passengers would shift to the Transit Center. The TJPA and CHSRA's latest ridership forecasts confirm that of the total 27,570 daily Caltrain riders and 18,163 daily HSR riders, approximately 33,642 passengers (63.3 percent of Caltrain riders and 89.1 percent of HSR riders) would board at the Transit Center (Cambridge Systematics 2018, CHSRA 2022b). The remaining 12,091 passengers (36.7 percent of Caltrain riders and 10.9 percent of HSR riders) would board at the Fourth and Townsend Street Station. If the Revised Project is not implemented, there would be no Caltrain or HSR passengers boarding in the Transit Center, and all 45,733 Caltrain and HSR riders would board at the existing Fourth and King Street Station. The Revised Project would thus contribute to reduced ridership at the Fourth and Townsend Street Station area (due to the

shift in ridership to the Transit Center) by approximately 74 percent from 45,733 daily riders to 12,091 daily riders and associated travel demand. Therefore, the Revised Project's contribution to cumulative transportation impacts in the Fourth and Townsend Street Station area would not be substantial. The cumulative effects on transportation with the Revised Project would be not adverse, which is the same conclusion reported in the 2018 Final SEIS/EIR for cumulative transportation effects in the vicinity of the Caltrain railyard, particularly at Fourth and Townsend Streets.

3.3. Land Use and Planning

3.3.1. Changes to the Affected Environment

In general, more acres of residential, office, and mixed land uses are in the project area than existed in 2018. Of the approximately 165 acres adjacent to the project, the most prevalent existing land uses are the Caltrain railyard and related rail infrastructure (30 acres), offices (38 acres), residential lands (23 acres), and residential mixed with other uses (11 acres). This land use pattern is similar to that described in the 2018 Final SEIS/EIR, although the proportion of offices and institutional uses have increased, while production, distribution, and repair space has declined. Only one zoning change has occurred in the project area since the 2018 Final SEIS/EIR—a small area around Third and Townsend Streets has been rezoned to Central SoMa Mixed-Use, Office from SoMa Service/Light Industrial. In terms of expected near-term development proximate to Revised Project components, the San Francisco Development Pipeline dataset provides a quarterly snapshot of the Department of Building Inspection's Permit Tracking and the Planning Department's Project and Permit Tracking System. Based on the 2021 Quarter 4 San Francisco Development Pipeline dataset only a few projects (approximately six) are near project components, including the underground pedestrian connector, train tunnel, the intercity bus facility, the Second and Harrison Streets vent structure, and the Fourth and Townsend Street Station. Both the zoning change and these pipeline projects would result in new circumstances under which the project would be implemented.

Despite these localized changes that affect a small number of parcels in the project corridor, the change and intensification of land uses in the project area have occurred as envisioned by the adopted area plans and redevelopment plans, all of which are essentially the same as when they were identified and described in the 2018 Final SEIS/EIR. According to the San Francisco County Transportation Authority's population and job density forecasts between 2015 and 2050, the project area is expected to continue to have a mix of residential and employment uses, but increasingly more intensely developed. These land use changes reflect the City's designation of this area as a "targeted growth area" that can accommodate more development near available transit services.

3.3.2. Project Effects

The Revised Project would not physically divide an established community for the same reasons as described in the 2018 Final SEIS/EIR—facilities would be underground, would not introduce barriers that would have the potential to divide surrounding land uses, and would be part of existing district/neighborhood boundaries that serve to define separate communities (e.g., the Fourth and Townsend Street Station, the tunnel stub box, and the Caltrain railyard are project components and divide the Central SoMa area to the north and the Mission Bay North area to the south). Because the area plans, policies, and regulations remain essentially the same as they were when the 2018 Final SEIS/EIR was completed, the Revised Project also would be consistent with the land use planning and regulatory framework. The Revised Project

would not change planned land uses or land use policies. The Revised Project would continue to be consistent with and supportive of relevant area plans by promoting transportation options and complementing higher density corridors and areas along and around transit and transit stations. Project components that would be deferred, eliminated, or underground would not affect existing land uses. Furthermore, under the Revised Project, the reduced train box extension would avoid entirely the land acquisition and employment displacement effects at the 201 Mission Street office building that were identified in the 2018 Final SEIS/EIR and for which mitigation measures were identified to reduce the adverse effects to not adverse. The modified Fourth and Townsend Street Station design would affect Townsend Street and require an additional 0.29 acre of land in the Caltrain railyard, but would not result in displacement of any residents or employees. The re-alignment of the tunnel stub box would involve construction in the southern portion of the Townsend Street right-of-way and would not involve land acquisition or displacement of existing uses. The modifications to the tracks south of the Caltrain railyard would not alter existing land uses or the neighborhood character, because they would occur within the Caltrain right-of-way and continue the existing rail infrastructure use.

The vent structures at the Fourth and Townsend Street Station would be essentially the same as analyzed in the 2018 Final SEIS/EIR, but would be shifted approximately 4 feet further south into the Caltrain railyard and the eastern vent structure would shift to the west to be within the station footprint. These minor adjustments would not alter neighborhood character because the vents would be part of the existing rail infrastructure at the Caltrain railyard and would be separated from the existing and planned land uses to the north across Townsend Street. The vent structure that was part of the extended train box at the Transit Center would be relocated to the TJPA parcel just east of Beale Street across from the Transit Center. The height, massing, and operations of this vent structure would be similar to that assumed for the site closer to Main Street. The surrounding land uses include large-scale structures (the 201 Mission office high-rise to the north, the Park Tower high-rise development to the south and southeast, and the Transit Center and high-rise residential Millennium Tower to the west and northwest), and the scale, intensity, and use of the vent structure would not adversely affect the surrounding high-intensity public and mixed use land use character.

Similarly, converting the temporary open space on TJPA property across Beale Street from the Transit Center to an entrance/exit pavilion to the below-ground Transit Center train station, when it is opened, would be a change in land use, but it would not alter neighborhood character because it would be consistent and compatible with the Transit Center across the street and the transportation improvements completed as part of the SFMTA Active Beale Street Project and would not introduce a land use or scale of operations that would detract from the adjacent office and mixed use high rises.

The Third and Townsend Streets vent structure would be adjacent to existing mixed residential, office, and retail land uses. The land uses at this site have changed since 2018, with a new office use on part of the site and new high-rise residential and hotel uses on the south side of Townsend Street; however, the land use character continues to be a mix of uses, although at greater intensity than described in the 2018 Final SEIS/EIR. This vent structure would not adversely affect land use character, because its design as well as the co-located land development desired by the City would be in accordance with City development standards and design guidelines. Immediately adjacent land uses at the Second and Harrison Streets vent structure and co-located land development site have not changed since completion of the 2018 Final SEIS/EIR.

3.4. Noise and Vibration

3.4.1. Changes to the Affected Environment

As stated in Section 3.2, the project area has been intensively developed with more acres of residential, office, and mixed land uses in the project area since 2018. Because of this change in the land use along the DTX alignment, more noise-sensitive land uses exist, specifically Land Use Category 2, residential uses, where people normally sleep, as defined in FTA's 2018 Transit Noise and Vibration Impact Assessment Manual. As part of the preliminary engineering work for the Revised Project, a Noise and Vibration Technical Memorandum (Parsons 2022b) was prepared to analyze the groundborne noise and vibration for train operations, noise at ventilation structures, and noise and vibration for construction for the Revised Project, taking into account the mitigation measures identified in the 2004 and 2018 environmental documents.

Operational noise was analyzed at 28 sensitive receptors that were not present at the time the 2018 Final SEIS/EIR was prepared, primarily from Harrison Street along the tunnel segment south and to the Fourth and Townsend Street Station in the central and southwest portions of the project area. The central portion of the project area has experienced notable changes along Townsend Street west of Second Street, with a greater number of parcels redeveloped for mixed residential and production, distribution, and repair land uses. In the southwest portion of the project area, numerous mid-rise apartment complexes are now located along Mission Creek and Townsend Street, interspersed with parks, businesses, and restaurants. Redevelopment of vacant lots and replacement of lower intensity uses has resulted in a more intense development pattern in this area, but one that continues to reflect a wide mix of uses.

3.4.2. Project Effects

Noise and Vibration During Operations

The analysis in the Noise and Vibration Technical Memorandum (Parsons 2022b) predicted groundborne noise and vibration levels generally would be below the projections in the 2018 Final SEIS/EIR, but that groundborne noise may equal or exceed the thresholds in FTA's *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018) at two buildings that may house vibration-sensitive equipment that were not identified in the 2018 Final SEIS/EIR. One site is along Second Street in the vicinity of the widened throat structure, and the second site is along Townsend Street in the vicinity of the Fourth and Townsend Street Station. In both locations, train passbys would occur underground and could generate groundborne noise and vibration levels that would adversely affect the equipment. In addition, two other buildings may be occupied by health care/medical equipment that could be affected (one along Second Street and the second along Townsend Street, where the train passbys would occur in the mined tunnel segment of the project). The DTX Design Criteria (Chapter 4 Environmental Requirements) (TJPA 2022a) contain groundborne noise and vibration performance standards for these types of buildings that reflect FTA's methodology and thresholds to minimize interference with interior operations. Effective and feasible design techniques exist, such as resilient supports to insulate buildings from the transmission of groundborne noise, direct fixation fasteners, or relocation of the trackwork that is the source for these impacts would reduce groundborne noise and vibration levels below the FTA thresholds. These designs are typically developed during final design. At that time, further investigation into the location of the vibration-sensitive uses (e.g., on the ground floor or upper level of the building), the type of equipment, and its sensitivity can be performed that would enable the designers to use more specific engineering methods to define the effects and specifications for the trackwork to comply

with FTA thresholds. The prior environmental analyses included groundborne noise and vibration mitigation measures to reduce identified adverse effects due to operation. Specifically, 2004 Mitigation Measure VibO 1 identifies trackwork design options to avoid exceedances of operational vibration criteria; see below for construction-period measures. Therefore, with the implementation of adopted mitigation measures that have been incorporated into the Transbay Program and adherence to the DTX Design Criteria, operational noise and vibration impacts from train passbys on vibration-sensitive land uses would be not adverse.

The *Noise and Vibration Technical Memorandum* (Parsons 2022b) also considered noise from operation of tunnel ventilation fans. The analysis found that operation of the fans would comply with the applicable American Public Transit Association (APTA) 60 A-weighted-decibel (dBA) noise limit at all locations for normal operating conditions. The only exceedance of the APTA threshold would be during emergency conditions at street level at Second and Harrison Streets, when the noise level was projected conservatively to be 61 dBA, without accounting for the reduction in noise that would occur with turns in the vent shaft and installation of a louver on the vent shaft façades. Estimated noise from moving trains propagating through the vent shafts would comply with APTA criteria at all shaft locations. Noise from backup generator testing and maintenance would exceed APTA criteria, but would not dominate the noise environment over existing ambient levels and would occur infrequently. The previously identified 2018 Mitigation Measure New-MM-NO-1.1 would apply to the Revised Project. As described in this mitigation measure, ventilation shafts would be designed in accordance with the APTA guidance for controlling noise. Treatments to control noise may include applying acoustical absorption materials to shaft surfaces or attaching silencers to fans. These treatments would be available and feasible. Therefore, with the implementation of 2018 Mitigation Measure New-MM-NO-1.1, operational noise from operation of tunnel ventilation fans would be not adverse.

Noise and Vibration During Construction

The Noise and Vibration Technical Memorandum (Parsons 2022b) re-affirmed that the same significant and unavoidable impact from nighttime construction noise described in the 2018 Final SEIS/EIR would still occur with the Revised Project. As previously analyzed, this effect would remain adverse even with implementation of 2004 Mitigation Measure NoiC-1. The Revised Project would not change construction methods or the location of construction activities and would not be expected to result in an increased frequency or need for nighttime construction. Therefore, the Revised Project would not result in new or an increased severity of this adverse effect.

As for daytime construction noise, the report indicated that some daytime noise levels could reach a 90-dBA sound level equivalent per hour, and that complaints about daytime construction noise should be expected. As stated in the 2018 Final SEIS/EIR, certain construction activities (e.g., demolition) would be likely to generate noise levels that would exceed the City standard of 80 dBA at 100 feet without mitigation. The Revised Project would not alter construction methods, the location of construction, or result in new sources of noise and vibration, although the modified Fourth and Townsend Street Station and the realigned tunnel stub box would alter construction activity along Townsend Street. The wider, deeper station box would involve more excavation, but the shorter, shallower tunnel stub box would require less excavation. The net effect is expected to be greater noise effects for the predominantly commercial and light industrial land uses, interspersed with approximately three residential parcels, along Townsend Street, although the overall construction duration for these two components would be less than the previous project. Implementation of 2004 Mitigation Measures NoiC-1, NoiC-2, and NoiC-3 require compliance with the City's noise ordinance and its construction noise limits, ongoing noise monitoring to identify when contractors need to

implement additional measures to reduce noise, and regular inspections of construction equipment to confirm that they are effectively muffled. NoiC-4, NoiC-5, and NoiC-6 would require establishing an active community liaison program and minimizing construction noise through minimal use of vehicle backup alarms.

In the vicinity of the buildings that may house vibration-sensitive equipment, two sites (at the widened throat structure and the other near the Fourth and Townsend Street Station) would be near segments of the project that would be constructed using the cut-and-cover method. The other two sites are in locations where the project would be constructed using the sequential excavation method, which use excavators and cutting equipment or tunnel boring machines to remove the earth. Implementation of the 2004 Mitigation VibC1 would limit or prohibit use of construction techniques that create high vibration levels; VibC 2 would restrict procedures that contractors can use in vibration sensitive areas; and Mitigation Measure VibC 3 would require vibration monitoring during vibration-intensive construction activities. These measures have been adopted and incorporated into the Transbay Program and would apply to the Revised Project and reduce vibration impacts to not adverse.

3.5. Air Quality

3.5.1. Changes to the Affected Environment

No substantial changes have occurred to the affected environment for air quality since the 2018 Final SEIS/EIR. The following aspects of air quality conditions and regulations remain the same: air pollutant thresholds and standards (i.e., National and California Ambient Air Quality Standards), the attainment status for criteria pollutants for the San Francisco Bay Area Air Basin (i.e., non-attainment of federal standards for ozone and particulate matter – fine [$PM_{2.5}$]), Clean Air Act conformity requirements (i.e., section 176(c), and the Clean Air Plan for the Bay Area Air Quality Management District (BAAQMD). The BAAQMD's 2017 Spare the Air Cool the Climate Clean Air Plan is an update to the plan described in the 2018 Final SEIS/EIR; however, this existing plan is fundamentally the same but with greater priority placed on addressing climate change and health inequities that affect particular communities in the Bay Area. The plan contains 85 measures to reduce emissions across all economic sectors, especially stationary and transportation sources, by reducing criteria pollutants, toxic air contaminants, and greenhouse gases.

3.5.2. Project Effects

Phase 2 of the Transbay Program was presented to the Interagency Consultation Task Force on January 24, 2013. On February 21, 2013, the Task Force determined that Phase 2 would not be a Project of Air Quality Concern (POAQC). In terms of air quality conformity, DTX Phase 2 has been and continues to be included in the most recent version of the regional transportation plan (Plan Bay Area 2050 as RTP ID 21-T11-110) and the 2021 Transportation Improvement Program (as TIP ID SF-050002) (MTC and ABAG 2021). The Metropolitan Transportation Commission has prepared findings that Plan Bay Area 2050 complies with the latest U.S. Environmental Protection Agency transportation conformity regulations and the Bay Area Conformity State Implementation Plan, also known as the Bay Area Air Quality Conformity Protocol (MTC 2021). This conformity finding demonstrates that the total emissions projected in the plan will be within the emission limits established by the State Implementation Plan to attain National Ambient Air Quality Standards. Therefore, the Revised Project, like the project, would not conflict with the applicable regional and State air quality management plans.

As concluded in the 2018 Final SEIS/EIR, the project could result in construction emissions that would exceed the significance thresholds established by the BAAQMD for nitrogen oxide (NOx). Implementation of 2004 Mitigation Measures AC 1 through AC 15, 2018 Mitigation Measure New-MM-C-AQ-5.1, as well as the increased use and availability of Tier 4 engines (Tier 4 emission standards were phased in from 2008 through 2015 to reduce primarily NOx and particulate matter emissions), would reduce construction air emissions, including toxic air contaminant concentrations, to not adverse effects. These mitigation measures also would be implemented as part of the Revised Project. The Revised Project would not substantially alter construction activities, and thus these mitigation measures would continue to reduce potential adverse air quality effects during Revised Project construction.

In terms of localized impacts during operations, the Revised Project would not result in a new carbon monoxide (CO) violation. Because the DTX would operate underground, except along the at-grade segment south of the Caltrain railyard, and the primary mode of access to the two stations would be walking, biking, or transferring from other transit services, the potential for the project to result in a new exceedance or substantial worsening of an existing exceedance would be low. In the at-grade crossing segment south of the Caltrain railyard, the use of the turnback and MOW track would minimally increase traffic delays and congestion at the new fourth track within the existing Mission Bay Drive crossing (Parsons 2022a). The turnback crossing of 16th Street that was analyzed in the 2018 Final SEIS/EIR is proposed to be eliminated under the Revised Project; therefore, there would be no effect on intersection operations or other transportation effects at the intersections in the vicinity of that crossing (i.e., Seventh and 16th Streets and 16th and Owens Streets). Because the Revised Project would not substantially alter traffic delays, it would not contribute to an exceedance or worsening of an existing exceedance of CO and $PM_{2.5}$.

With the deferral of the intercity bus facility and removal of potential residential use above the facility due to the reduction in the train box extension, less potential would exist for the Revised Project to affect new receptors at this site. However, the Revised Project still would result in the same potentially adverse air quality effects that were described in the 2018 Final SEIS/EIR related to exposure of receptors, including new receptors throughout the project area, to substantial emissions from emergency generators and vent structures, and would require implementation of previously identified 2018 Mitigation Measures New-MM-AQ-3.1 and New-MM-AQ-3.2 to reduce impacts to not adverse. Implementation of 2018 Mitigation Measure New-MM-AQ-3.1 would apply to all diesel emergency generators, and thus would reduce emissions to any new receptors throughout the project area. Implementation of 2018 Mitigation Measure New-MM-AQ-3.2 would be applied to address new residential land development co-located with the vent structures and requires preparation of an air filtration and ventilation plan, as well as documentation of ongoing maintenance of the ventilation and filtration systems. With implementation of these mitigation measures, the Revised Project would not result in an adverse construction or operational air quality effect.

3.6. National Historic Preservation Act Section 106

3.6.1. Changes to the Area of Potential Effects

Archaeological Area of Potential Effects

The archaeological area of potential effects (APE) in the 2018 Final SEIS/EIR (previously approved archaeological APE) encompassed all ground-disturbing activities (the horizontal APE), as well as the depth of ground disturbance (the vertical APE) for the 2018 undertaking.

Based on the Revised Project components, the previously approved archaeological APE continues to encompass all the proposed features of the Revised Project, except three components: 1) the new street-level entrance and exit pavilion across Beale Street from the Salesforce Transit Center on a parcel owned by the TJPA; 2) the modified design for the Fourth and Townsend Street Station; and 3) the realigned tunnel stub box that would enable future underground Caltrain and high-speed train service to connect to the underground Fourth and Townsend Street Station. Details about these components are provided below.

- Entrance/exit pavilion – the new entrance/exit pavilion would occupy a horizontal footprint of approximately 3,200 square feet north of and adjacent to the deferred intercity bus facility on a TJPA parcel east of the existing Salesforce Transit Center across Beale Street. The vertical depth of disturbance would be a maximum of approximately 45 feet below the ground surface, which is the previously approved depth of the adjacent extended train box that would serve Caltrain and high-speed rail trains.
- Fourth and Townsend Street Station – the station is proposed to be expanded (wider) and constructed deeper. The ground disturbance would extend approximately 1,000 feet along the length of the station and southward between 4 and 16 feet, totaling an estimated 0.29 acre. Certain sections of the expanded horizontal APE would extend approximately 4 feet further south while other sections would encroach 16 feet further into the Caltrain railyard, creating a more rectangular footprint than the previous station box. The total increase in the horizontal APE would be approximately 0.29 acre. The sections that would encroach approximately 4 feet further south into the Caltrain railyard would be for the vertical circulation and vent structures. The vertical disturbance at the eastern end of the station would be approximately 61 feet below the ground surface compared to approximately 50 feet for the 2018 project; and at the western end of the station, approximately 44 feet below the ground surface compared to the 40 feet below the ground surface for the 2018 project.
- Tunnel stub box – the realigned tunnel stub box would be shifted from its previous siting largely within the Caltrain railyard northward such that it would be only partially in the Caltrain railyard and largely in the southern half of the Townsend Street right-of-way. Ground disturbance (the revised horizontal APE) would extend approximately 1,000 feet along the southern half of Townsend Street, from the western end of the Fourth and Townsend Street Station to approximately 300 feet east of Seventh Street, where it would curve into the northern portion of the Caltrain railyard. Vertical disturbance would be approximately 20 feet shallower than the previous tunnel box where it enters Townsend Street approximately 50 feet below ground surface (bgs). The previous tunnel box would continue to the southwest and reach depths of approximately 65 feet below the ground surface; however, the proposed realignment would not extend this far into the Caltrain railyard nor be more than approximately 30 feet bgs. The previously approved vertical APE encompasses the vertical disturbance for this proposed component.

The previously approved archaeological APE, and the proposed revisions to address the expanded components, are presented in Figure 16 and Figure 17.

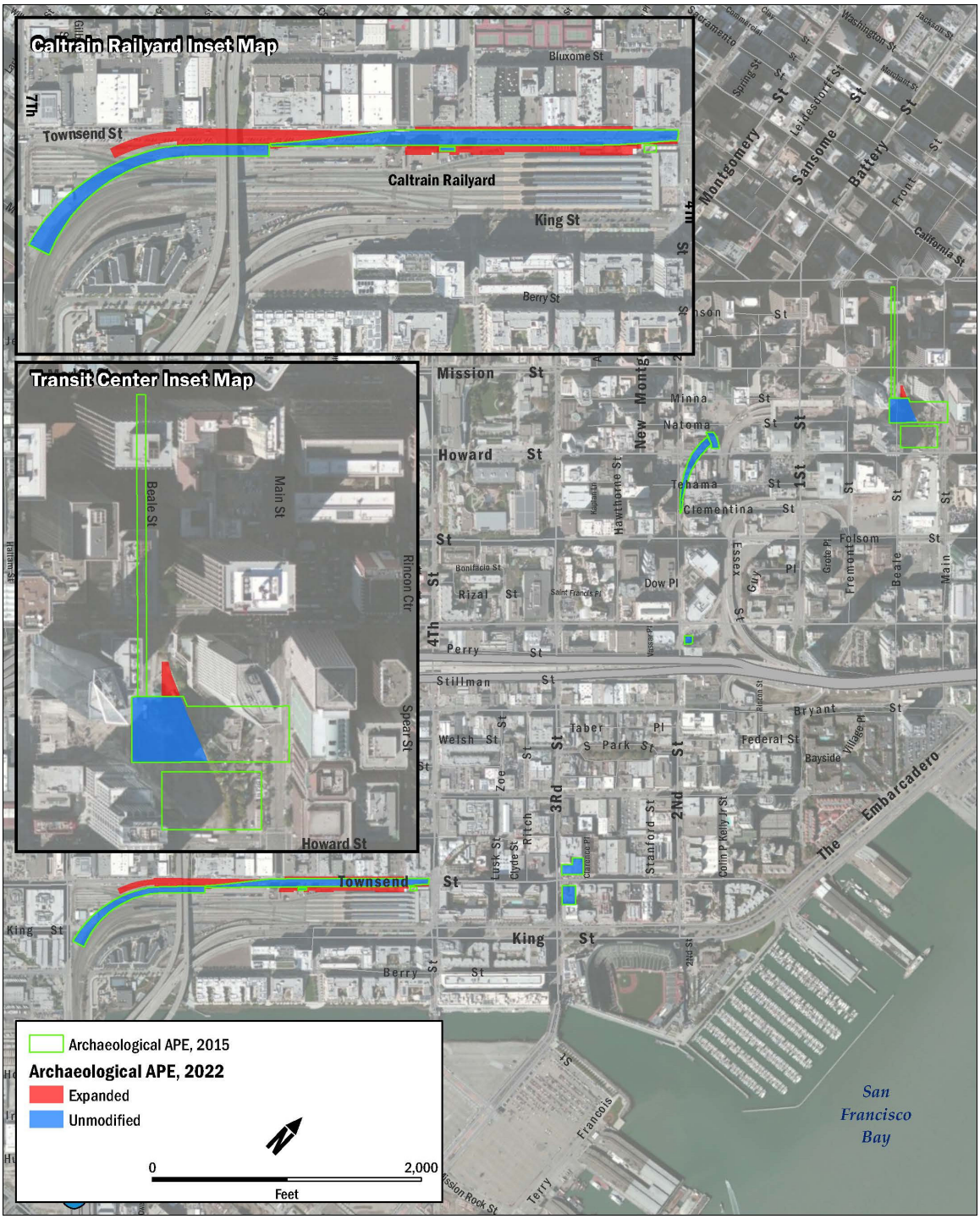

Figure 16. Archaeological (Horizontal) Area of Potential Effects

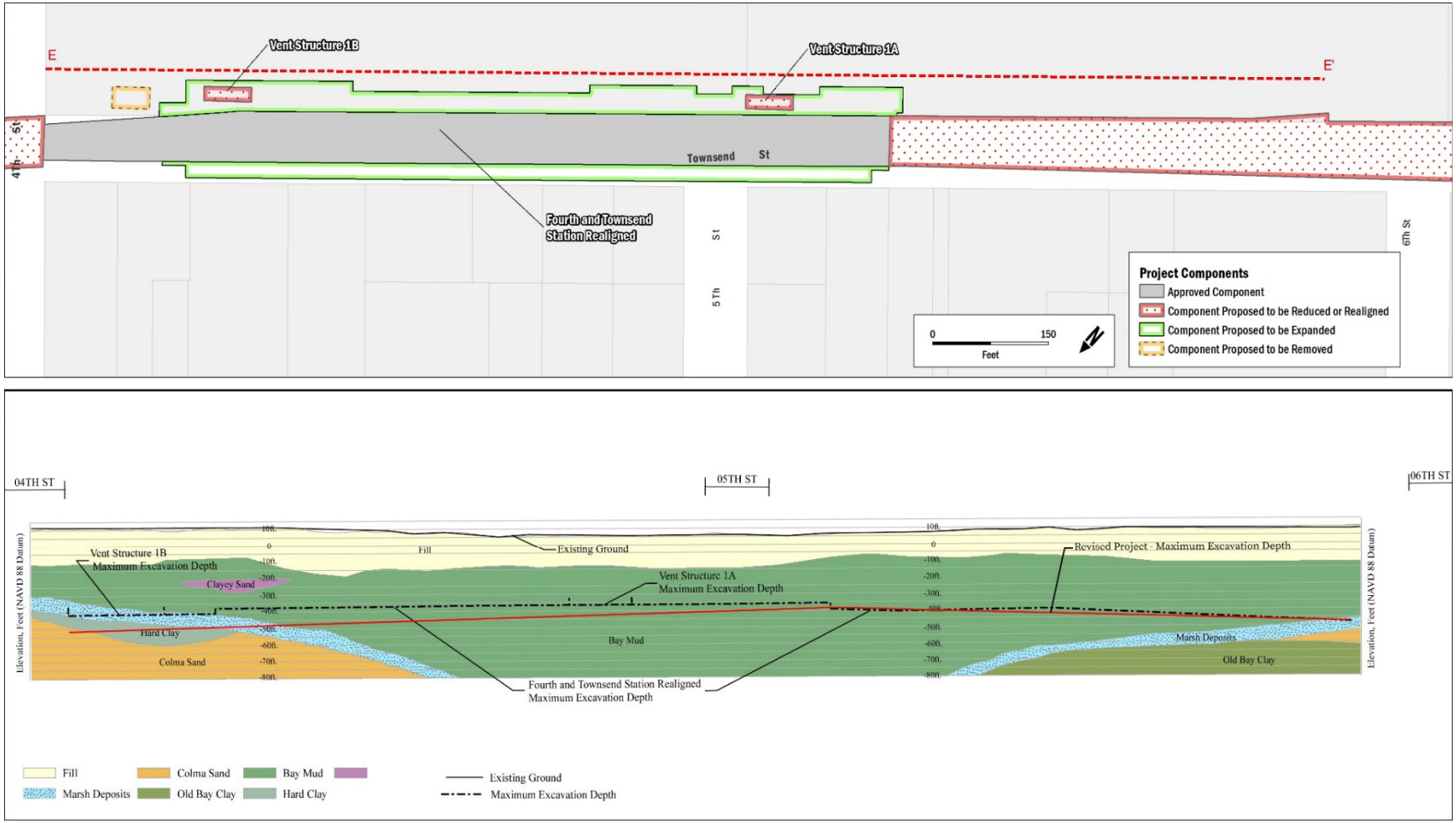

Figure 17. Archaeological (Vertical) Area of Potential Effects

Architectural Area of Potential Effects

The architectural APE in the 2018 Final SEIS/EIR (previous architectural APE approved by SHPO in December 2015) generally included properties one parcel deep around the project footprint, where above-ground components or the cut-and-cover construction method could directly or indirectly affect historic-age buildings, structures, or objects. The previously approved architectural APE would encompass the historic-age buildings, structures, or objects that could be affected by the Revised Project, except for one project component. That component, the realigned tunnel stub box, would occupy more of the Townsend Street right-of-way, from the western end of the Fourth and Townsend Street Station to nearly Seventh Street, approximately 1,000 feet, but would not include any above-ground components. The expanded architectural APE conforms to the methods used to establish the architectural APE for the Transbay Program as delineated by the FTA in 2001 in consultation with the SHPO and includes the extent of proposed construction for most project components and the area surrounding each component up to generally one parcel. The previously approved architectural APE and the proposed revisions to this APE to address the one revised component (realigned tunnel stub box) are presented in Figure 18. The SHPO reviewed the revised APE and concluded in its May 5, 2023 letter to FTA that the revisions to the previously approved APE are adequate to address direct and indirect effects of the Revised Project on historic resources (SHPO 2023).

3.6.2. Identification of Historic Properties / Historical Resources in the Revised Project APE

Archaeological APE

A supplemental records search was conducted at the Northwest Information Center of the California Historical Resources Information System on July 12, 2022 (NWIC File #22-0063), to determine if there are archaeological resources recorded in the expanded APE. No new archaeological resources were identified by the records search. There were no previously recorded archaeological resources in the expanded APE near the Caltrain railyard nor along the Townsend Street right-of-way.

Architectural APE

A review of existing historic districts was conducted for the Revised Project, and the five historic districts that were discussed in the APE and identification of historic resources approved by SHPO in December 2015 were found not to have changed. A brief discussion of each of these districts and their relationship to the Revised Project components and the expanded architectural APE is provided below. A contributor to one of the historic districts was found eligible for listing in the National Register of Historic Places (NRHP), is considered a historic property, and is also discussed below. The locations of these historic properties (i.e., historic districts and contributor) in relation to the previously approved architectural APE and the expanded architectural APE are shown in Figure 19.

- *Second and Howard Streets District*. A portion of the NRHP-listed Second and Howard Streets Historic District is located in the previously approved architectural APE. The buildings within the district are all located on Second, Howard, Natoma, and New Montgomery Streets; none are affected by Revised Project components and are outside the expanded architectural APE.

Figure 18. Architectural Area of Potential Effects

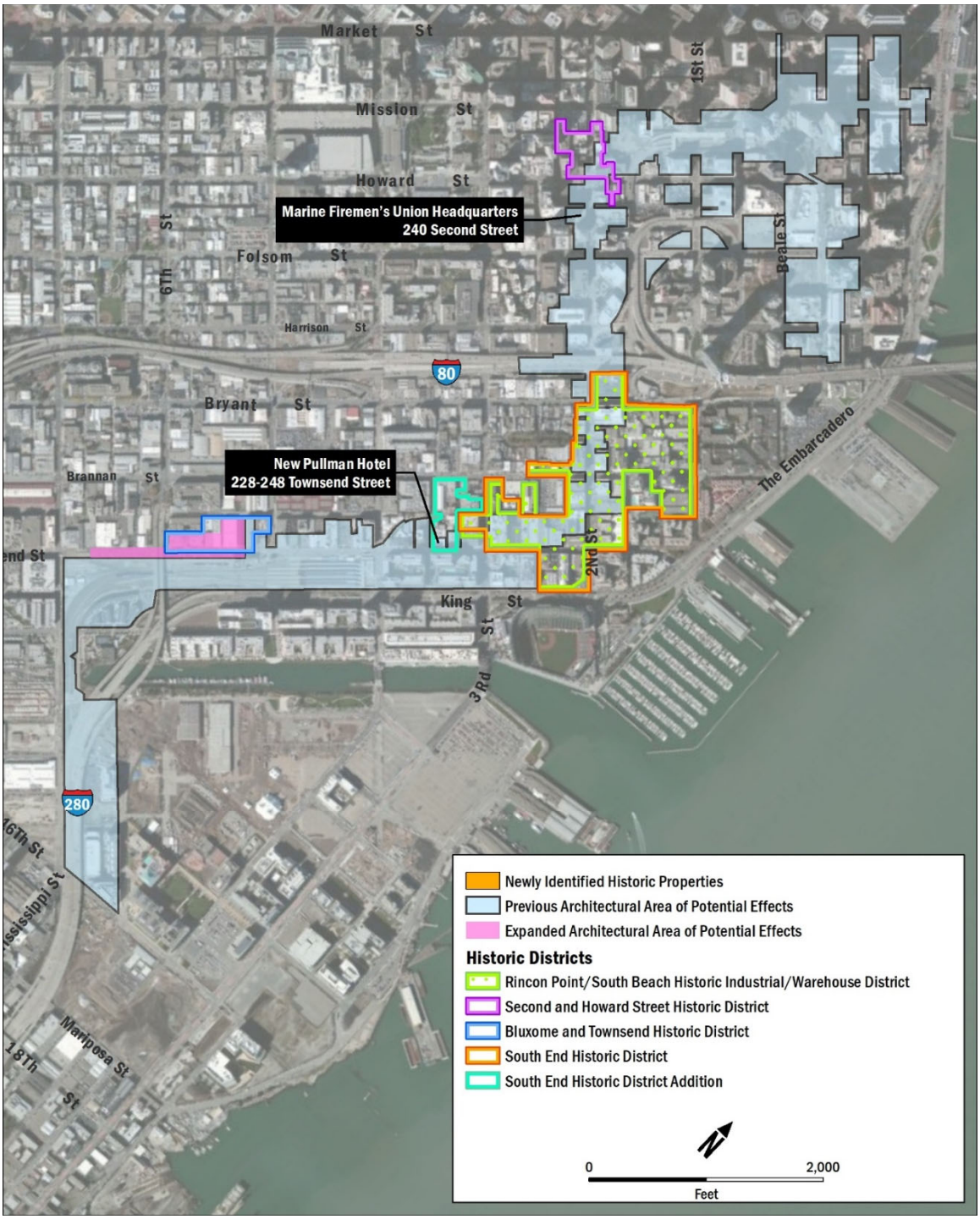

Figure 19. Historic Districts and Newly Identified Historic Properties

- *South End Historic District*. A portion of the original South End Historic District is in the previously approved architectural APE. When this historic district was determined eligible for listing in the NRHP, the South End Historic District included 55 contributing buildings, primarily light industrial buildings and warehouses, and 23 non-contributing buildings. The boundaries were roughly defined by Bryant, First, King and Third Streets and are nearly identical to the Rincon Point/South Beach Historic Warehouse-Industrial District.
  In 2010, the boundaries were expanded on the southwestern border to incorporate the South End Historic District Addition. The historic district addition was described in the 2017 Finding of Effects (FOE), contains 12 contributing and seven non-contributing buildings, and was found eligible for listing in the NRHP under Criteria A and C because it was compatible with the "warehouse architectural form" theme of the NRHP-eligible South End Historic District. The historic district addition information presented in the 2009 California Department of Parks and Recreation (DPR) 523 form was used in the preparation of the Draft Landmark Designation Report for the Clyde and Crooks Warehouse Landmark District, likely prepared in 2018. The historic district was renamed the Clyde and Crooks Warehouse Historic District by the City of San Francisco and was adopted as a San Francisco landmark district under Article 10 of the Planning Code, Section 1004.1 on November 11, 2018. The boundaries of the historic district addition are Brannan Street to the north, Third Street to the east, Townsend Street to the south, and Lusk Street to the west. This historic district, including the New Pullman Hotel at 228-248 Townsend Street (which was also found individually eligible for listing in the NRHP and was adopted as a San Francisco landmark under Article 10 of the Planning Code, Section 1004.1, on November 12, 2018) and the building at 224 Townsend Street are adjacent to the Revised Project construction footprint with frontage along the DTX tunnel segment that would be constructed using the cut-and-cover tunnel construction method. Tunnel construction and the two parcels that front the DTX tunnel segment (224 and 228-248 Townsend Street) are in the previously approved APE and outside the expanded architectural APE. There would be no above-ground features within the previously approved architectural APE that have not already been discussed in the prior environmental documents.

- *Rincon Point/South Beach Historic Industrial/Warehouse District.* A portion of the Rincon Point/South Beach Historic Warehouse-Industrial District is located in the previously approved architectural APE. The historic district was found eligible for listing in the NRHP in 1983. This area of San Francisco developed beginning in the 1850s and 1860s after landfill and warehouse construction changed he physical appearance of the waterfront. Approximately 60 buildings within the district were identified as contributing to the district's significance. This historic district is adjacent to the Revised Project construction footprint with frontage along the DTX tunnel segment that would be constructed using mined construction methods that occur entirely underground. Tunnel construction would occur in the previously approved APE and would be located outside the expanded architectural APE. In addition, there would be no above-ground features in the previously approved architectural APE not already discussed in the prior environmental documents.

- *Bluxome and Townsend Warehouse District*. A portion of the Bluxome and Townsend Warehouse District is located within both the previously approved and the expanded architectural APE. This district appears eligible for the NRHP under Criteria A and C and has nine contributing buildings within its boundaries. The architectural APE was expanded to include all of the Townsend Street right-of-way, from the western end of the Fourth and Townsend Street Station to nearly Seventh Street and the parcels fronting Townsend Street, in keeping with the APE definition where cut-and-cover construction is proposed. The realigned tunnel stub box would be shifted from its previous siting largely within the Caltrain

railyard northward such that it would be only partially in the Caltrain railyard and largely in the southern half of the Townsend Street right-of-way. Parcels in the Bluxome and Townsend Warehouse District that front Townsend Street are within the expanded APE (see Figure 19). The realigned tunnel stub box would not include any above-ground features that could have indirect effects on the district. The previously approved architectural APE intersected the Bluxome and Townsend Warehouse District and an adjacent parcel outside of the district boundary because above-ground, vertical circulation and vent structures associated with the Fourth and Townsend Street Station were directly across the street in the Caltrain railyard. The Revised Project has shifted these vents approximately 4 feet further south into the Cailtrain railyard and further from the historic district.

- *San Francisco Auxiliary Water Supply System (AWSS).* This is a discontiguous district that includes one reservoir, two storage tanks, two pump stations, 172 cisterns, and approximately 135 miles of pipes across the city of San Francisco. New mapping of the system was created since the 2018 Final SEIS/EIR was approved by the TJPA and FTA. An August 2018 DPR 523 District form of the entire AWSS in August 2018 that included several maps that identified the location of distribution mains (contributing and non-contributing), high-pressure fire hydrants (contributing and non-contributing), cisterns, manifolds, suction connections, pumping stations, storage tanks, reservoirs, and fireboats.[1] Figure 20 illustrates the AWSS distribution mains in the project vicinity. Most of the distribution mains and the high-pressure hydrants were identified as contributing resources to the AWSS; no other contributing features were identified in the project vicinity. Short segments of the AWSS Historic District traverse the previous architectural APE - at the intersections of Third, Fourth, and Fifth Streets with Townsend Street. A short 50-foot segment of the AWSS Historic District is within the expanded architectural APE (related to the realigned tunnel stub box), where Sixth Street crosses Townsend Street.

In addition to the above investigation on historic districts in the previously approved and expanded APEs, buildings that were not of historic age in the 2001 Historic Architectural Survey Report for the project were reviewed to determine if any now meet the generally accepted building age threshold of 45 years old for historic evaluation.[2] Five of the buildings listed in the report were constructed prior to 1978 and are now historic age (Table 3). Three of these buildings have since been demolished, the fourth building (100 Mission Street) is one block north of the architectural APE, and the fifth building (the Marine Firemen's Union Headquarters at 240 Second Street) is a newly identified historic property in a previous architectural APE in an area where a project component is proposed to be reduced. None of the historic properties identified by this investigation are within the expanded architectural APE.

[1] ICF, 2018 August, DPR 523 form: "San Francisco Auxiliary Eater Supply System," prepared for ICF, 2018, *Draft Historical Resources Evaluation Report of the Better Market Street Project, California Department of Transportation, District 4, Alameda County, California, October 2018 (56.14), Prepared for the San Francisco Public Works and California Department of Transportation, District 4, Alameda County, California, Federal ID: STPL-3934(180).*

[2] JRP Historical Consulting Services, 2001, *Historic Architectural Survey Report for the Transbay Terminal / Caltrain Extension Project, San Francisco, California,* Prepared for Parsons Transportation Group.

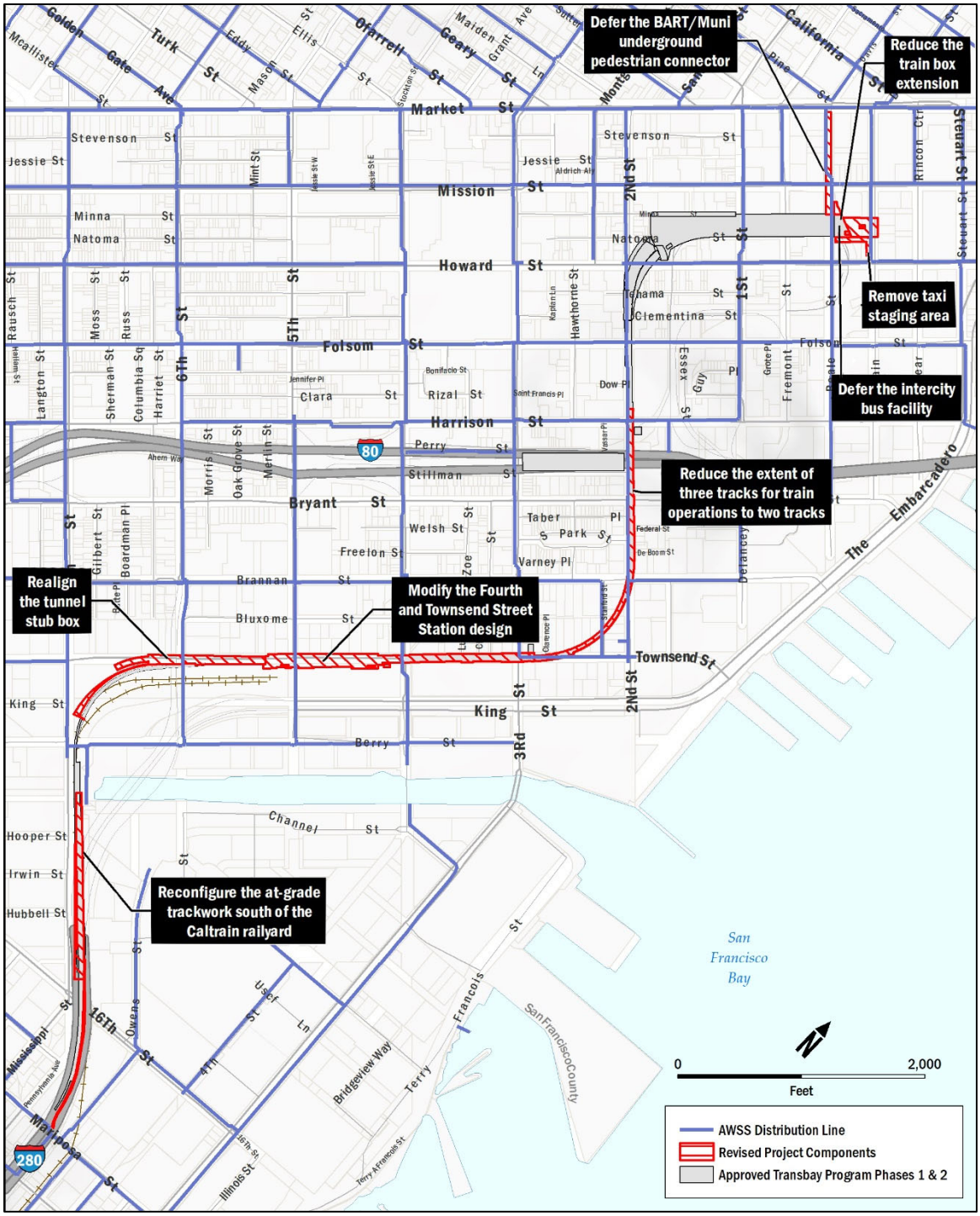

Figure 20. San Francisco Auxiliary Water Supply System Historic District in the Project Vicinity

Table 3. Buildings that Were Not of Historic Age in 2001

Address	Date Constructed	Within Architectural APE	Description
240 Second Street	1957	Yes	This building is the Marine Firemen's Union headquarters and is proposed for landmark status by the City, has been previously recommended as eligible for listing in the NRHP and the CRHR, and is therefore a historic property.[1] The building is in a previous APE and is adjacent to a cut-and-cover tunnel segment where the number of tracks would be reduced from three to two and the tunnel would be reduced in size.
688-690 Third Street	1963	N/A	This building was in the previously approved architectural APE because it was within one parcel from the Third and Townsend Street vent structure. However, the building was demolished by others, and the site has been redeveloped with a mixed-use building for office and residential uses in 2003.
701 Third Street	1970	N/A	This building was in the previously approved architectural APE because it was a possible site for the Third and Townsend Street vent structure. The building was demolished by others, and the site was redeveloped with a hotel in 2019.
250 King Street	1976	N/A	This building was in the previously approved architectural APE because it was within one parcel of the vent structures at the Fourth and Townsend Street Station. The building was demolished by others and the site was redeveloped in 2004 with mixed uses.
100 Mission Street	1967	No	This property was included as part of a design option in 2001 that was excluded from the undertaking by TJPA and FTA in 2005. The closest project component to this property is the extended train box, which is proposed to be reduced. The building is one block north of the expanded APE.

Source: Compiled by AECOM in 2022.

Notes:

1 - San Francisco Planning Department, 2022, "Proposed Landmarks," Available at: https://sfplanning.org/project/proposed-landmarks (Accessed October 2022); Christopher and Kelley VerPlanck, 2008 April 3, "DPR 523 form for 240 2nd St., San Francisco," Available at: https://sfplanninggis.org/docs/DPRForms/3735055.pdf (Accessed October 2022); Carey & Co., 2010 March 16, "DPR 523 form Continuation Sheers for 240 2nd St., San Francisco," Available at: https://sfplanninggis.org/docs/DPRForms/3735055.pdf (Accessed October 2022).

APE = area of potential effects
City = City and County of San Francisco
CRHR = California Register of Historical Resources
FTA = Federal Transit Administration
N/A = not applicable
NRHP = National Register of Historic Places
TJPA = Transbay Joint Powers Authority

3.6.3. Project Effects

Archaeological Resources

As discussed above, the previously approved archaeological APE encompassed all ground-disturbing activities, as well as the depth of ground disturbance for the 2018 undertaking. That archaeological APE encompasses all the proposed features of the Revised Project, except for three components where the APE was expanded. The criteria of effect have therefore been applied to each of these expanded components in the following evaluation of effects on archaeological resources:

- New street-level entrance and exit pavilion across Beale Street from the Salesforce Transit Center on a parcel owned by the TJPA;
- Modified design for the Fourth and Townsend Street Station; and
- The realigned tunnel stub box that would enable future underground Caltrain and high-speed train service to connect to the underground Fourth and Townsend Street Station.

Effects on Documented Archaeological Historic Properties. There are no documented archaeological historic properties within the expanded project APE and thus no potential to affect such properties.

Effects on As-Yet-Undiscovered Archaeological Historic Properties. The project has the potential to cause a direct adverse effect on as-yet-undiscovered archaeological historic properties. As described in detail in the National Historic Preservation Act, Section 106 memorandum (AECOM 2023), the three proposed expanded project components have the potential for post-review discovery of archaeological resources during construction, and in some cases, the potential for post-review discovery of Native American human remains. Expected archaeological resources could have important research value and could be eligible for the NRHP as historic properties. In this way, the proposed construction could have a direct adverse effect on one or more as-yet-unknown historic properties.

Entrance/exit pavilion. The entrance/exit pavilion is located in the historical location of Yerba Buena Cove. From approximately 6,000 years ago until the filling of this portion of the bay in the 1860s, this expanded APE would have been situated in open water. Geotechnical reports indicate a layer of fill at least 17 feet thick overlying a similarly thick layer of Bay Mud and an even thicker layer of marine sands. A prehistoric burial was discovered at 55 feet bgs near Fremont Street in February 2014; it was situated at the interface between Marine Sands and Lower (Old) Bay Mud. This interface is below the subsurface limits of the expanded entrance/exit pavilion APE. Therefore, there is low potential for encountering buried prehistoric Native American deposits or human remains in primary context, or as secondary deposits in fill. The City and County of San Francisco considers both primary and secondary deposits as having potential eligibility for listing in the California Register of Historical Resources (CRHR) and NRHP.

The area within the footprint primarily housed iron works, wood mills, storage yards, and warehouses after the land was filled, but construction of the 201 Mission building, which abuts the expanded APE for the entrance/exit pavilion, resulted in removal or destruction of a large part of the soils and fill within the horizontal and vertical archaeological APE. Construction of the entrance/exit pavilion has the potential to impact as-yet-unknown archaeological resources from the post-fill 19th century industries and warehouses that were once situated on the property. The adverse changes in the significance of as-yet-unknown archaeological resources have been and would continue to be reduced to no adverse effect through implementation of

previously adopted Mitigation Measures CH 15 through CH 20, identified in the 2004 FEIS/EIR and memorialized in the MOA (U.S. Department of Transportation et al. 2004). These measures require that Archaeological Research Design and Treatment Plans (ARDTPs) be prepared and implemented for each area of ground disturbance.

Fourth and Townsend Street Station. With the updated project design, more excavation (approximately 11 feet) would occur at the Fourth and Townsend Street Station, and thus a greater potential would occur to encounter subsurface cultural resources in this area (Figure 17). There is very low potential for historic-era archaeological resources within the footprint of Townsend Street, which was established early in the history of the development of San Francisco and is unlikely to contain historic-era deposits, features, or structural remains within the fill beneath the street surface.

The APE lies in what was formerly the edge of Mission Bay and adjacent marshlands from between approximately 6,000 years ago until the 1860s, when the land was reclaimed by filling. Prior to approximately 6,000 years ago, before the waters of the bay reached their maximum extent, the APE would have been an attractive estuarine and marshy area accessible to prehistoric-era Native Americans to use and occupy. Construction of the expanded Fourth and Townsend Station has a moderate potential for adverse changes in the significance of as-yet-unknown prehistoric-era archaeological resources and Native American human remains. The adverse changes in the significance of as-yet-unknown archaeological resources and Native American human remains have been and would continue to be reduced to no adverse effect through implementation of previously adopted Mitigation Measures CH 15 through CH 20, identified in the 2004 FEIS/EIR and memorialized in the MOA (U.S. Department of Transportation et al. 2004). These measures require that ARDTPs be prepared and implemented for each area of ground disturbance.

Tunnel Stub Box. The tunnel stub box is located within the formerly submerged margin of Mission Bay near the mouth of Mission Creek. The greater Mission Creek and Mission Bay areas were attractive places that were likely fished and hunted by Native Americans for thousands of years, and the geotechnical studies of the APE suggest that there is moderate potential for encountering prehistoric Native American archaeological deposits or human remains beneath the 10- to 20-foot-thick layer of fill. Archaeological deposits and human remains could either be in primary context in the Bay Mud, marine sands, and old bay clay beneath the fill or in secondary context as part of the fill. The City considers both primary and secondary prehistoric era deposits as having potential eligibility for listing in the CRHR and NRHP. Given the depth of the Colma sand layer, it is possible that piles used to support the western end of the new tunnel stub box may extend into Colma sand. The top layer of this sand is considered sensitive for archaeological deposits.

Historically, the expanded northern portion of the tunnel stub box was located within the footprint of Townsend Street, while the previously approved APE for this project component was part of a larger purchase by the Southern Pacific Railroad in 1868 and 1869 of former marsh and tidelands that the company gradually filled. Previous development within the footprint of the tunnel stub box is therefore limited to the Southern Pacific railroad tracks (some of which are currently in use). There is very low potential for historic-era archaeological resources within the footprint of Townsend Street, which was established early in the history of the development of the City and is unlikely to contain historic-era deposits, features, or structural remains within the fill beneath the street surface. There is also a very low potential for encountering as-yet-undiscovered archaeological resources related to the railroad. There is a moderate potential for adverse changes in the significance of as-yet-unknown prehistoric archaeological resources or Native American human remains. The adverse changes in the significance of as-yet-unknown

archaeological resources and Native American human remains have been and would continue to be reduced to no adverse effect through implementation of previously adopted Mitigation Measures CH 15 through CH 20, identified in the 2004 FEIS/EIR and memorialized in the MOA (U.S. Department of Transportation et al. 2004). These measures require that ARDTPs be prepared and implemented for each area of ground disturbance.

Architectural Historic Properties / Historical Resources

Tunnel Stub Box. The previously approved APE has been expanded for the Revised Project because of the realignment of the tunnel stub. The expanded APE includes the Townsend Street right-of-way, from the western end of the Fourth and Townsend Street Station to nearly Seventh Street and the corresponding NRHP-listed AWSS. Specifically, there is a north/south line along Sixth Street that would intersect the expanded APE along Townsend Street. The realignment of the tunnel stub box in the southern half of Townsend Street could require abandonment, relocation, or protection of these water lines. However, this would not be an adverse effect for the same reasons cited in the 2017 FOE where other refinements to the undertaking at that time affected segments of the AWSS lines along Beale and Main Streets. As stated on page 2-261 of the 2018 Final SEIS/EIR:

> Protection or relocation of AWSS components in a relatively small area of a system that spans the entire City would not constitute a direct adverse effect on the historic property. The additional area affected by the extension of the train box, where the AWSS would be found, would be limited to … approximately 50 feet, compared to the 135 miles making up the system. … Before disturbance of the AWSS, coordination with the SFPUC and TJPA would occur. The SFPUC provides the proper guidance of maintaining the resource through design guidelines and/or leave and protect in-place methods. Written and documented consultation with the SFPUC is required prior to the disturbance of AWSS facilities.

The tunnel stub box would affect approximately 50 feet of the AWSS lines, and similar to the 2017 FOE, the effects would be not adverse.

The expanded APE for the realigned tunnel stub box also includes much of the Bluxome and Townsend Warehouse District (Figure 19). Because this project component would be an underground tunnel box within Townsend Street and the Caltrain railyard with no above-ground features, it would have no direct or indirect effects to historic architectural properties on Townsend Street or the historic district as a whole. Therefore, the realigned tunnel stub box would have no effect on the Bluxome and Townsend Warehouse Historic District.

All Other Revised Project Components. All of the other project components are within the previously approved APE. Table 4 identifies the historic resources, if any, within the APE near each project component and whether the FOE determination is different from that in the 2017 FOE when the project was evaluated against the criteria of effect. As shown in Table 4, none of the Revised Project components would have an effect on architectural historic resources, except the reduction in the number of tracks in a portion of the tunnel and the modification of the Fourth and Townsend Street Station design. These two project components would intersect and affect the AWSS (an estimated 50 feet of the water lines each), but there would be no new or additional adverse effects, an FOE with which the SHPO concurred in its letter to FTA, dated May 5, 2023.

Table 4. Potential Effects of Project Components on Architectural Historic Resources

Project Component	In Previously Approved or Expanded Architectural APE?	Historic Property / Historical Resource?	Finding of Effect (FOE)
Deferral of Underground Pedestrian Connector	Yes – previously approved	NRHP-listed AWSS Historic District	No effect – project component to be deferred, resulting in no ground disturbance or above-ground features. *This FOE is the same as that in the 2017 FOE and 2018 Final SEIS/EIR.*
Reduction of the Train Box Extension / Relocation of Vent and Emergency Exit Structures	Yes – previously approved	NRHP-listed AWSS Historic District	No effect – project component (train box) would be reduced and not cross Main Street where AWSS lines exist. *The FOE in the 2017 FOE and 2018 Final SEIS/EIR was no adverse effect.*
Deferral of the Intercity Bus Facility	Yes – previously approved	None identified	No effect – project component to be deferred, resulting in no ground disturbance or above-ground features *This FOE is the same as that in the 2017 FOE and 2018 Final SEIS/EIR.*
New Entrance / Exit Pavilion at the Transit Center	Yes – previously approved	None identified	No effect. *This project component is a replacement for the vertical circulation at the intercity bus facility, which had an FOE of no effect, the same as for this project component.*
Removal of Taxi Staging Area at Intercity Bus Facility	Yes – previously approved	None identified	No effect – project component to be eliminated, resulting in no ground disturbance or above-ground features. *No FOE was made for this project component in the 2017 FOE or the 2018 Final SEIS/EIR. This component was assumed to have no effect, since it involved no ground disturbance, did not involve above-ground features, and was not near any historic resource within the previously approved APE. Therefore, this FOE would be the same as that assumed previously.*
Reduction of the Number of Tracks in a Portion of the Tunnel	Yes – previously approved	NRHP-eligible South End Historic District and Rincon Point/South Beach Historic District; NRHP-eligible 228-248 Townsend Street (New Pullman Hotel); NRHP-listed AWSS	No adverse effect – the project footprint would be reduced and the two newly identified historic properties at 240 Second Street and at 228-248 Townsend Street are in the previously approved APE. This project component would be under street rights-of-way, involve fewer tracks within a reduced-sized tunnel with no above-ground features, and below the AWSS lines except at the intersections

Project Component	In Previously Approved or Expanded Architectural APE?	Historic Property / Historical Resource?	Finding of Effect (FOE)
		Historic District; NRHP-eligible 240 Second Street (Marine Firemen's Union Headquarters) in previously approved APE	of Third and Fourth Streets with Townsend Street. Previously adopted mitigation measures for pre-construction activities to determine the integrity of buildings and manage traffic (PC 1, PC 6), (SG 1, SG 2, SG 4, SG 5); general construction to provide signage on alternative routes for access to properties and safety (GC 2 through GC 5); visual quality effects identified by businesses and residents (VA 2); air emissions control (AC 1 through AC 15 and 2018 New MM-C-AQ-5.1); vibration (VibC 1 through VibC 3); noise (NoiC 1 through NoiC 6); and soils/geology to control and monitor potential ground or building settlement (SG 1, SG 2, and 2018 New MM-C-GE-4.1), and ongoing consultation for all utility effects with the San Francisco Public Utilities Commission on the AWSS would reduce effects to not adverse. As concluded in the 2017 FOE for the project, the removal or relocation of short segments of the AWSS lines (in this case, approximately 50 feet of 135 miles of water lines) would not adversely affect the resource's ability to convey its significance or impair the characteristics that qualify the property for inclusion in the NRHP. *The mined tunnel that contains the tracks was not evaluated in the 2017 FOE or 2018 Final SEIS/EIR since the only change to this component at that time was the construction method for the mined tunnel. Because the APE has not changed and the mined tunnel footprint would be reduced, it would have no adverse effect.*
Modification to the Fourth and Townsend Street Station Design	Yes – previously approved	NRHP-eligible Bluxome and Townsend Warehouse District; NRHP-listed AWSS Historic District	No adverse effect – project component would remain within street right-of way and the northern portion of the Caltrain railyard across Townsend Street from the historic district. As concluded in the 2017 FOE for the previous project, the above-ground vertical circulation and vent/emergency exit structures would not have an indirect effect on the district's setting; the Revised Project would maintain similar height and massing of these structures but would alter the siting

Project Component	In Previously Approved or Expanded Architectural APE?	Historic Property / Historical Resource?	Finding of Effect (FOE)
			of these above-ground features further from the historic district. This project component would also affect the AWSS lines at the Fourth and Fifth Street intersections with Townsend Street, involving an estimated 100 feet of the lines. See above finding of effect for similar impacts on the AWSS due to the previous project and the mitigation measures that would apply and contribute to a finding of no adverse effect. *This FOE is the same as that in the 2017 FOE and 2018 Final SEIS/EIR.*
Reconfiguration of the At-Grade Trackwork South of the Caltrain Railyard	No	None identified	No effect - This project component would be within the Caltrain right-of-way and under the elevated I-280 freeway, implemented at grade, and separated from properties to the west by Seventh Street. *No FOE was made for this project component in the 2017 FOE or the 2018 Final SEIS/EIR. No APE was determined to be necessary, because this component involved minimal ground disturbance to construct and upgrade tracks in the Caltrain right-of-way, did not involve above-ground features and was not near any identified historic resources. The SHPO concurred that this project component did not need to be in the previously approved APE, and the same rationale to exclude it from the expanded APE would apply.*

APE = area of potential effects
AWSS = Auxiliary Water Supply System
EIR = Environmental Impact Report
FOE = Finding of Effect
I- = Interstate -
NRHP = National Register of Historic Places
SEIS = Supplemental Environmental Impact Statement
SHPO = State Historic Preservation Officer

In conclusion, the Revised Project would not change the 2003 or 2017 findings of effects for the undertaking as a whole. There would be an adverse effect on historic properties. The Supplemental Section 106 memorandum was submitted to the SHPO by FTA on March 20, 2023 as part of its continuing consultation with the SHPO for the undertaking to evaluate effects resulting from proposed changes to the project. Based on the information and evaluation presented in the Supplemental Section 106 memorandum and SHPO's concurrence received on May 5, 2023, the revisions to the undertaking would not introduce new or additional adverse

effects and the same mitigation measures previously adopted in conjunction with the prior environmental documents and the 2004 MOA, as amended, would reduce these effects.

3.7. Section 4(f)

3.7.1. Changes to the Affected Environment

The 2018 Final SEIS/EIR evaluated potential use of five historic districts that qualified as Section 4(f) resources: Second and Howard Streets District, South End Historic District, Rincon Point/South Beach Historic Industrial/Warehouse District, and Bluxome and Townsend Warehouse District, and the San Francisco Auxiliary Water Supply System. In addition, 26 public parks/recreational areas were identified within 0.25 mile of the project. Based on the Section 4(f) evaluation, FTA determined there would be either de minimis or no use of four of the districts; use of four contributors to the historic districts and use of the San Francisco Fire Department Auxiliary Water Supply System; and no permanent incorporation, adverse temporary occupancy, or constructive use of park, recreation, or wildlife refuge properties.

Historic Sites

Two new historic sites were identified within the previously approved APEs defined for Section 106; the Marine Firemen's Union Headquarters at 240 Second Street and the New Pullman Hotel at 228-248 Townsend Street.

The Marine Firemen's Union Headquarters at 240 Second Street (Figure 21), between Howard and Folsom Streets, is now of historic-age, is proposed for landmark status by the City and has been previously recommended as eligible for listing in the NRHP and the CRHR.[3] The building is within the previously approved architectural APE, as described in Section 3.6, National Historic Preservation Act Section 106, and is addressed here as a Section 4(f) historic property. The site is adjacent to the construction footprint where construction for the tunnel would be performed using cut-and-cover construction techniques within the public right-of-way, but there would be no at-grade or above-grade facilities that could affect the circulation, noise, or visual setting of this property. The Revised Project would not incorporate land from 240 Second Street into the project (direct use) or involve temporary occupancy. This Section 4(f) evaluation, therefore, assesses possible constructive use of the newly identified historic site at 240 Second Street, within the previously approved architectural APE.

The Marine Firemen's Union Headquarters was constructed in 1957 in the Late Moderne style and includes significant interior and exterior murals. The headquarters continues to function and serve as one of the oldest maritime unions based in San Francisco. The building is adjacent to the tunnel segment that would be constructed using the cut-and-cover construction method.

[3] San Francisco Planning Department, 2022, "Proposed Landmarks," Available at: https://sfplanning.org/project/proposed-landmarks (Accessed October 2022); Christopher and Kelley VerPlanck, 2008 April 3, "DPR 523 form for 240 2nd St., San Francisco," Available at: https://sfplanninggis.org/docs/DPRForms/3735055.pdf (Accessed October 2022); Carey and Co., 2010 March 16, "DPR 523 form Continuation Sheers for 240 2nd St., San Francisco," Available at: https://sfplanninggis.org/docs/DPRForms/3735055.pdf (Accessed October 2022).

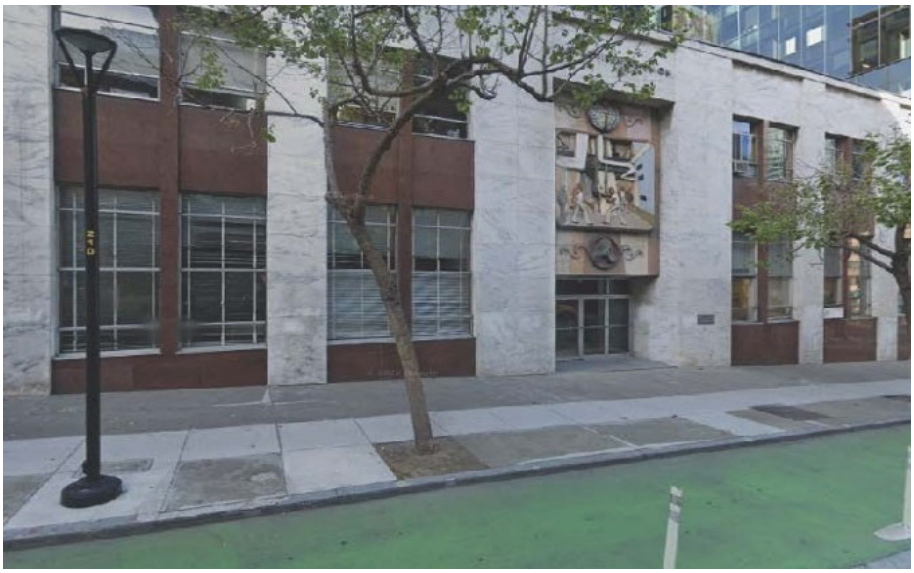

Figure 21. View of Marine Firemen's Union Headquarters (from Second Street, looking northwest)

In addition, as described in Section 3.6.2, Identification of Historic Properties / Historical Resources in the Revised Project APE, the South End Historic District was evaluated in the 2017 FOE; however, the New Pullman Hotel at 228-248 Townsend Street was not recognized as being individually eligible for NRHP listing until 2018 (Figure 22).

Like the Marine Firemen's Union Headquarters, the New Pullman Hotel site is adjacent to the construction footprint where construction for the tunnel would be performed using cut-and-cover construction techniques within the public right-of-way, but there would be no at-grade or above-grade facilities that could affect the circulation, noise, or visual setting of this property. The Revised Project would not incorporate land from 228-248 Townsend Street into the project (direct use) or involve temporary occupancy. This Section 4(f) evaluation, therefore, assesses possible constructive use of the newly identified historic site at 228-248 Townsend Street, within the previously approved architectural APE.

The New Pullman Hotel was constructed in 1909 and is a rare remaining example of the once numerous residential hotels built in the South of Market area during the post 1906-earthquake and fire reconstruction period and is also significant as the primary lodging venue in San Francisco for African American railroad workers, including Pullman porters and maids, during the first half of the twentieth century. As a group, Pullman porters and maids are nationally significant for establishing the first all-Black union in the country, contributing to the development of the African American middle class, and laying important foundations for the Civil Rights Movement. The building is adjacent to the tunnel segment that would be constructed using cut-and-cover construction techniques.

Figure 22. View of New Pullman Hotel (from Townsend Street, looking northwest)

Public Parks/Recreational Areas

The only new open space in the project corridor since completion of the 2018 Final SEIS/EIR is that associated with the 43-story Park Tower office building with ground-floor retail space at 250 Howard Street that was completed in 2019. The northern end of the building fronts onto the TJPA parcel that would be used for the reduced train box, a vent structure, and the entrance/exit pavilion as part of the Revised Project. As part of the development project approval, the City required that privately-owned publicly accessible open space be provided. The TJPA and developers entered into an agreement stipulating that a portion of this requirement could be satisfied temporarily on land owned by TJPA until such time as the TJPA required this parcel for DTX. With this understanding, a 5,200-square-foot open space area with benches has been constructed. However, because this open space is available temporarily and is reserved for future transportation use (23 CFR 774.11(h)), and the owner with jurisdiction (the TJPA) does not consider this space to be a significant parkland, this open space does not qualify for protection as a Section 4(f) resource.

3.7.2. Project Effects

Use of Section 4(f) property is defined in 23 CFR Part 774.17 and occurs when:

- Land is permanently incorporated into a transportation facility;
- There is a temporary occupancy of land that is adverse in terms of the Section 4(f) statute's preservationist purposes; or
- There is a constructive use of a Section 4(f) property.

Where use has been identified for the Revised Project, FTA has determined that the impacts would be de minimis. This determination was based on written concurrence from the SHPO that there would be no adverse effect to historical resources (36 CFR Part 800.5(b)).

Historic Sites

San Francisco Auxiliary Water Supply System. As described in Section 3.5, National Historic Preservation Action Section 106, the Revised Project would require abandonment, relocation, or support-in-place of segments of the historic San Francisco AWSS. The mined tunnel segment along Townsend Street at Third Street, the modified Fourth and Townsend Street Station along Townsend Street at Fourth and Fifth Streets, and the realigned tunnel stub box along Townsend Street at Sixth Street would result in direct use of AWSS lines. Although direct use of this Section 4(f) resource would occur, involving an estimated 200 feet of the 135 miles of water lines citywide, FTA has determined such use has a de minimis effect, based on the finding of no adverse effect under Section 106. The SHPO, as the official with jurisdiction, concurred that the Revised Project would not result in new or additional adverse effects in its letter to FTA, dated May 5, 2023. Replacement of a relatively small segment of pipe, if needed, within a total of 135 miles of pipes citywide would not substantially impair the important features, activities, and attributes that qualify the AWSS for Section 4(f) protection.

Bluxome and Townsend Warehouse District. The realigned tunnel stub box would shift northward into the southern portion of Townsend Street, and the construction footprint would be adjacent to the Bluxome and Townsend Warehouse District. However, this Revised Project component would not be constructed within the boundaries of the historic district or require temporary or permanent easements within the historic district. Therefore, no Section 4(f) permanent incorporation of land (direct use) or temporary occupancy would occur. Because this project component would be underground, include no above-ground features that could affect the visual or audible environment, and no change to the access to or circulation around the historic district, there would be no indirect adverse effect on this historic district, as analyzed in the Section 106 memorandum prepared by FTA. The SHPO, as the official with jurisdiction, concurred that the Revised Project would not result in new or additional adverse effects in its letter to FTA dated May 5, 2023. Therefore, the proximity impacts from construction and operation of the Revised Project would not substantially impair the important features, activities, and attributes of the historic district that qualify it for protection under Section 4(f), and the Revised Project would not result in constructive use of the historic district.

240 Second Street. As explained in the prior section evaluating the Revised Project pursuant to Section 106 of the NHPA, this historic resource is eligible for listing in the NRHP and is in the previously approved APE for Section 106, and therefore has been reviewed for its effects by the SHPO. The potential effects on this Section 4(f) historic resource are due to the installation of rock dowels at the 240 Second Street property and the proximity to the Revised Project construction footprint and cut-and-cover construction method proposed along the building frontage. As described in the previous environmental documents, this construction method involves excavating an open trench, constructing the tunnel box, and then covering the tunnel box and restoring the surface. These construction activities could result in temporary disruption to local circulation, property access, and visual quality, and cause air and noise emissions, vibration, and building settlement.

At the 240 Second Street property, the tunnel would be constructed in the public right-of-way onto which the property fronts. Based on the further design work completed for the Revised Project, rock dowels that would be installed temporarily to support the tunnel would not require underground easements from this property. As a result, there would be no direct use or a temporary occupancy of this Section 4(f) historic resource.

Regarding constructive use of 240 Second Street, all of the above-mentioned construction effects were considered adverse in the prior environmental documents, but would be reduced to

not adverse because of the mitigation measures adopted and incorporated into the Transbay Program. Specifically, construction mitigation measures for pre-construction activities to determine the integrity of buildings and manage traffic (PC 1, PC 6), (SG 1, SG 2, SG 4, SG 5); general construction to provide signage on alternative routes for access to properties and safety (GC 2 through GC 5); visual quality effects identified by businesses and residents (VA 2); air emissions control (AC 1 through AC 15 and 2018 New MM-C-AQ-5.1); vibration (VibC 1 through VibC 3); noise (NoiC 1 through NoiC 6); and soils/geology to control and monitor potential ground or building settlement (SG 1, SG 2, and 2018 New MM-C-GE-4.1). As analyzed in the Section 106 memorandum prepared by FTA, construction activities would not have an adverse effect on this historic resource. The SHPO, as the official with jurisdiction, concurred that the Revised Project would not result in new or additional adverse effects in its letter to FTA dated May 5, 2023. Therefore, the proximity impacts from construction and operation of the Revised Project would not substantially impair the important features, activities, and attributes of this historic resource that qualify it for protection under Section 4(f), and the Revised Project would not result in constructive use of 240 Second Street.

228-248 Townsend Street. As explained in the prior section evaluating the Revised Project pursuant to Section 106 of the NHPA, this historic resource is eligible for listing in the NRHP and is in the previously approved APE for Section 106, and therefore has been reviewed for effects by the SHPO. The potential effects on this Section 4(f) historic resource are due to the proximity to the Revised Project construction footprint and cut-and-cover construction techniques proposed along the building frontage. As described in the previous environmental documents, this construction method involves excavating an open trench, constructing the tunnel box, and then covering the tunnel box and restoring the surface. These construction activities could result in temporary disruption to local circulation, property access, and visual quality, and cause air and noise emissions, vibration, and building settlement.

At the 228-248 Townsend Street property, the tunnel would be constructed in the public right-of-way onto which the property fronts. Based on further design work completed for the Revised Project, rock dowels that would be installed temporarily to support the tunnel would not require underground easements from this property. As a result, there would be no direct use or a temporary occupancy of this Section 4(f) historic resource.

Regarding constructive use of 228-248 Townsend Street, all of the above-mentioned construction effects were considered adverse in the prior environmental documents, but would be reduced to not adverse because of the mitigation measures adopted and incorporated into the Transbay Program. Specifically, construction mitigation measures for pre-construction activities to determine the integrity of buildings and manage traffic (PC 1, PC 6), (SG 1, SG 2, SG 4, SG 5); general construction to provide signage on alternative routes for access to properties and safety (GC 2 through GC 5); visual quality effects identified by businesses and residents (VA 2); air emissions control (AC 1 through AC 15 and 2018 New MM-C-AQ-5.1); vibration (VibC 1 through VibC 3); noise (NoiC 1 through NoiC 6); and soils/geology to control and monitor potential ground or building settlement (SG 1, SG 2, and 2018 New MM-C-GE-4.1). As analyzed in the Section 106 memorandum prepared by FTA, construction activities would not have an adverse effect on these historic resources. The SHPO, as the official with jurisdiction, concurred that the Revised Project would not result in new or additional adverse effects in its letter to FTA dated May 5, 2023. Therefore, the proximity impacts from construction and operation of the Revised Project would not substantially impair the important features, activities, and attributes of this historic resource that qualify it for protection under Section 4(f), and the Revised Project would not result in constructive use of 228-248 Townsend Street.

Public Parks/Recreation Areas and Wildlife or Waterfowl Refuges

As described in the 2018 Final SEIS/EIR, construction of the project would result in street closures, detours, and construction staging activities that could restrict access to publicly-owned parks and recreational areas in the project area. Similarly, construction activities would generate noise and dust that could disrupt activities in parks that could impair the activities, features, or attributes of the recreational facilities if such activities were to occur in close proximity to parks. None of the project components would occur on or adjacent to a public park or recreation area. Therefore, there would be no permanent incorporation of land (direct use), constructive use or temporary occupancy of these types of Section 4(f) resources.

South Park, the nearest public park owned and maintained by the City Department of Recreation and Parks, is set back approximately 150 feet from the project alignment within the Second Street right-of-way. Along this stretch of Second Street, the construction activities would be underground in the mined tunnel segment where the Revised Project would reduce the size (width) of the tunnel because the number of tracks would change from three to two. Although proximate to this construction area, the construction activities would occur underground and would not impair the activities, features, or attributes of South Park.

No wildlife or waterfowl refuges are in the project vicinity, the same conditions as reported in the previous environmental documents, and thus no effects on these Section 4(f) properties would occur.

Section 4(f) Use Determination

Based on the above, permanent incorporation (direct use) would occur for the San Francisco AWSS, but the use would be de minimis based on the SHPO's concurrence with the finding of no adverse effect under Section 106. Similarly, project construction would be adjacent to the Section 4(f) historic properties at 240 Second Street and 228-248 Townsend Street, but the proximity impacts from construction and operation of the Revised Project would not substantially impair the important features, activities, and attributes of these historic resources that qualify it for protection under Section 4(f), and the Revised Project would not result in constructive use of either site. The Revised Project would have no temporary occupancy or constructive use of Section 4(f) public parks, recreation, or wildlife refuges.

3.8. Executive Order 12898, Environmental Justice

3.8.1. Changes to the Affected Environment

An updated review of environmental justice communities in fulfillment of Executive Order 12898 was prepared using the same geographic area that was analyzed in the 2018 Final SEIS/EIR, updated American Community Survey 5-year estimates (2016-2020), and decennial census tract block group data. The study area now includes 43 block groups, compared to 20 block groups studied in the 2018 Final SEIS/EIR, as shown in Figure 23. The increase in the number of block groups is due to redistricting resulting from the 2020 census, which resulted in creation of new census tracts and block groups. Of the 43 block groups in the study area, 36 block groups are identified as environmental justice communities, meaning the minority population within the census block is higher than 50 percent and/or the percentage of households living below the poverty line in the census block is greater than the citywide average of 11 percent (Figure 23). The City now has a minority population of 61 percent, and 11 percent of its households are living below the poverty line. This indicates that the city's minority populations have increased, while the number of households living below the poverty line has slightly

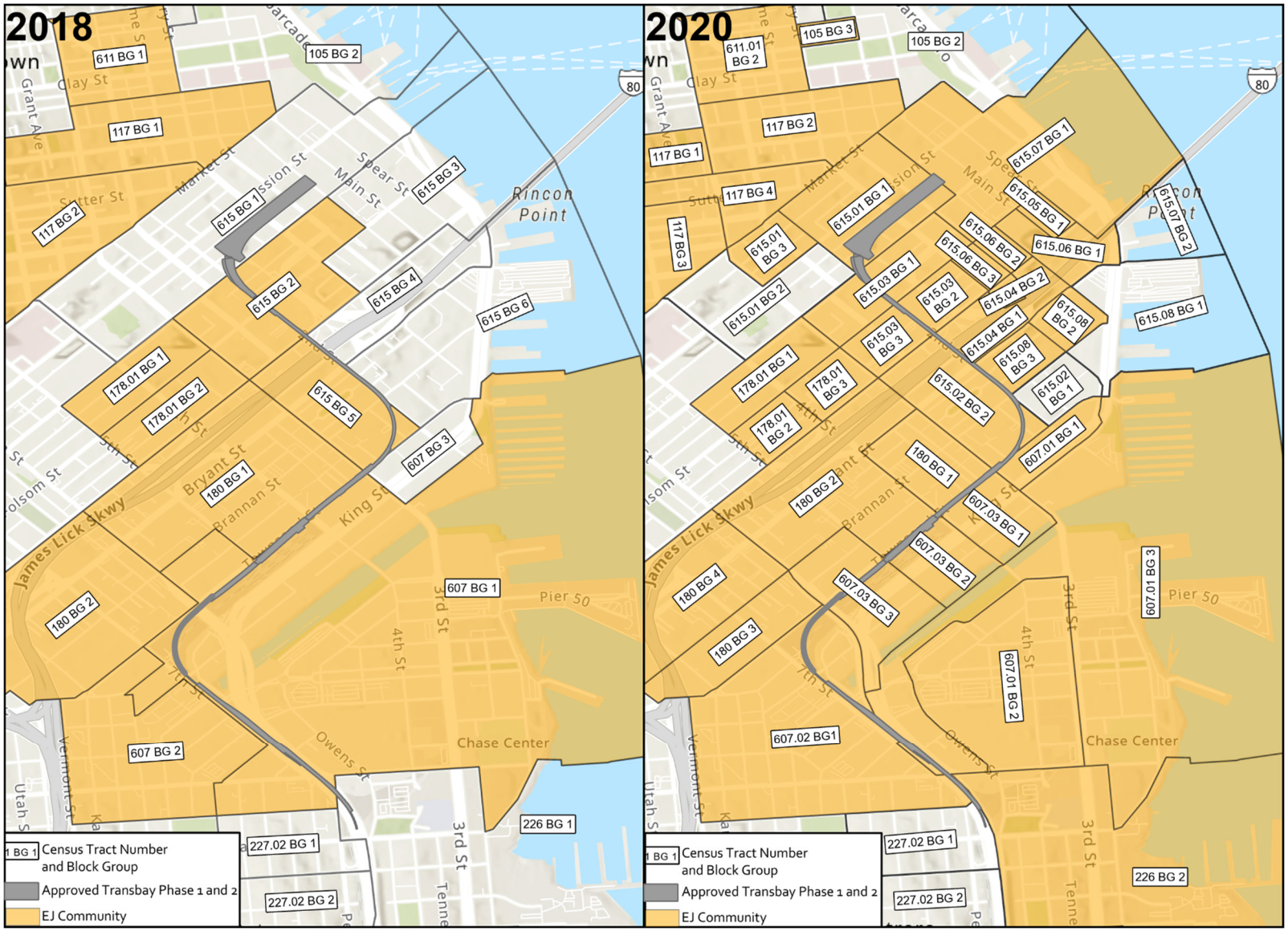

Figure 23. Environmental Justice Communities in 2018 Final SEIS/EIR and in 2020

decreased. In comparing the same 20 areas between the 2018 Final SEIS/EIR and the 2020 census (census blocks in the 2018 Final SEIS/EIR compared with data covering the same area in the 2020 census), all but three areas had an increase in minority population from 3 to 27 percent. The decrease in minority population in three areas was minimal at one to three percent. In the same 20 areas, the percentage of the population living below the poverty line decreased in all but four areas by 2 to 55 percent; in the four areas where poverty increased, the increase was between 2 and 23 percent.

Rather than only a portion of the study area containing environmental justice communities, now almost all of the study area contains high percentages of the population that are low income and/or minority. Areas that were not identified as environmental justice communities in the 2018 Final SEIS/EIR that now are identified as such include land south of Market Street around the Transit Center and along the Second Street corridor of the DTX alignment (AECOM 2022b). Figure 24 shows the percentages of minority population within the project area's environmental justice communities on a color gradient where darker colors indicate higher minority populations. Similarly, Figure 25 shows the percentages of population living below the poverty line within the project area's environmental justice communities on a color gradient where darker colors indicate higher percentages of the population living below the poverty line.

Figure 24 shows that the area around the Transit Center has a relatively low minority population percentage while the Second Street segment (tunnel segment) passes through census blocks with a moderate percentage of minorities. The western portion of the Revised Project alignment, along Townsend Street, crosses census blocks in the tunnel segment with a moderate percentage (approximately 50-65 percent minority population) of minorities at the eastern end and progresses to census blocks with the highest minority population percentages at the western end (70 percent minority population). This western end is where the Fourth and Townsend Street Station, the tunnel stub box, and the trackwork south of the Caltrain railyard are located. For context, 61 percent of the City's population is minority. Figure 25 shows a very different geographic distribution with respect to percentage of the population below the poverty line, compared to the citywide 11 percent. Areas with greater percentages than the City as a whole (i.e., above 11 percent) are found around the Transit Center; along Second Street at the southern end of the widened throat structure; along Townsend Street, at the Fourth and Townsend Street Station and the western end of the tunnel stub box; and along 7th Street in the vicinity of the turnback track.

In addition to ethnicity and household income, locations of affordable housing provide additional insight to the socioeconomic conditions of the project area and further information on low-income clusters or subareas within the larger census tract blocks. Affordable housing is a critical resource for many historically underserved individuals. The City's identified existing and future affordable housing projects indicate that a high number of existing and future affordable housing projects are in the project area. Notable clusters of future affordable housing are planned, proposed, and are or will be under construction in the Transit Center District Plan area at the eastern end of the project area around the Transit Center and between Fifth and Seventh Streets and I-80 and Market Street in the Central SoMa area at the western end of the project area and approximately 0.4 mile north of the Caltrain railyard.

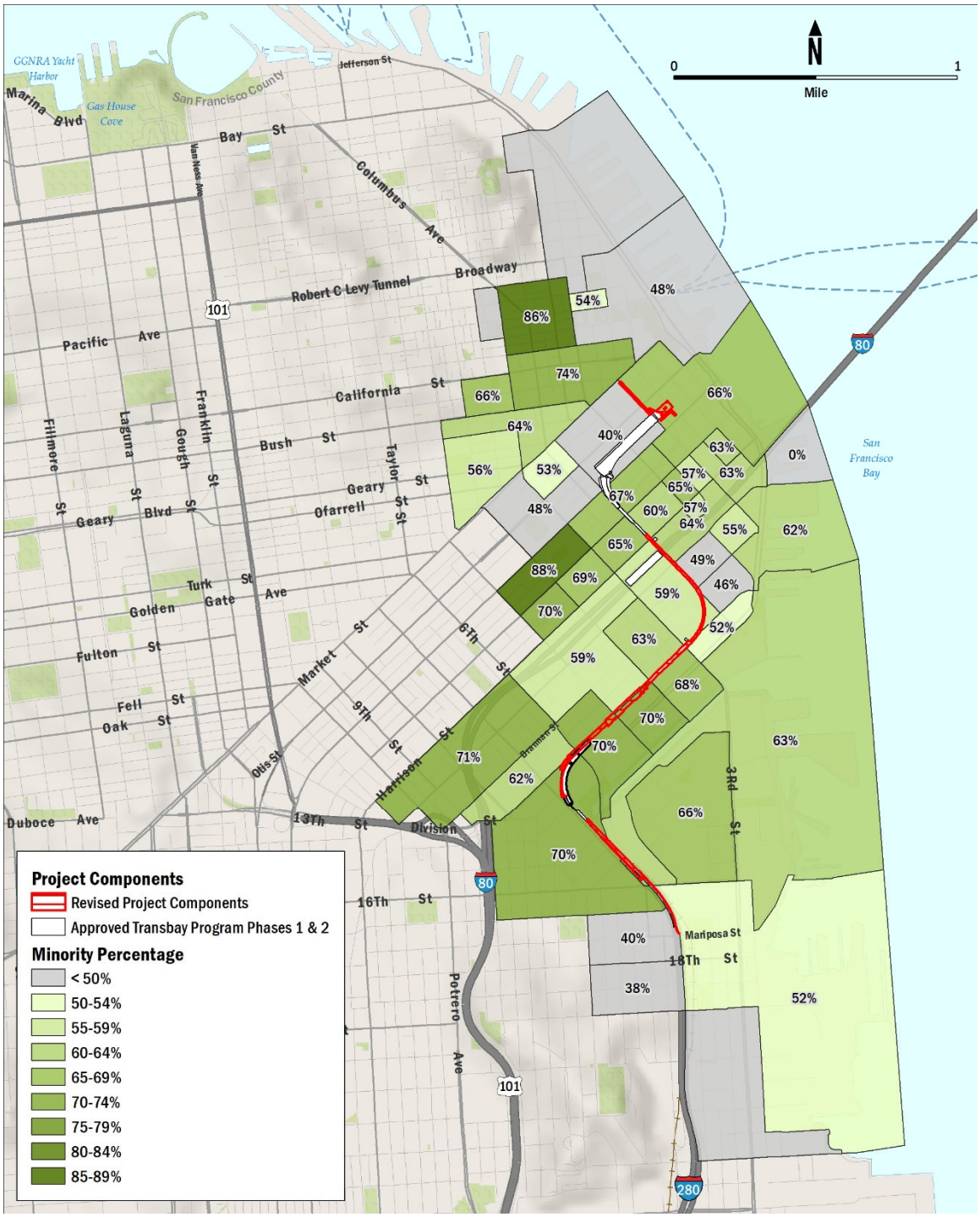

Figure 24. Percentages of Minority Population within Project Area Environmental Justice Communities - 2020

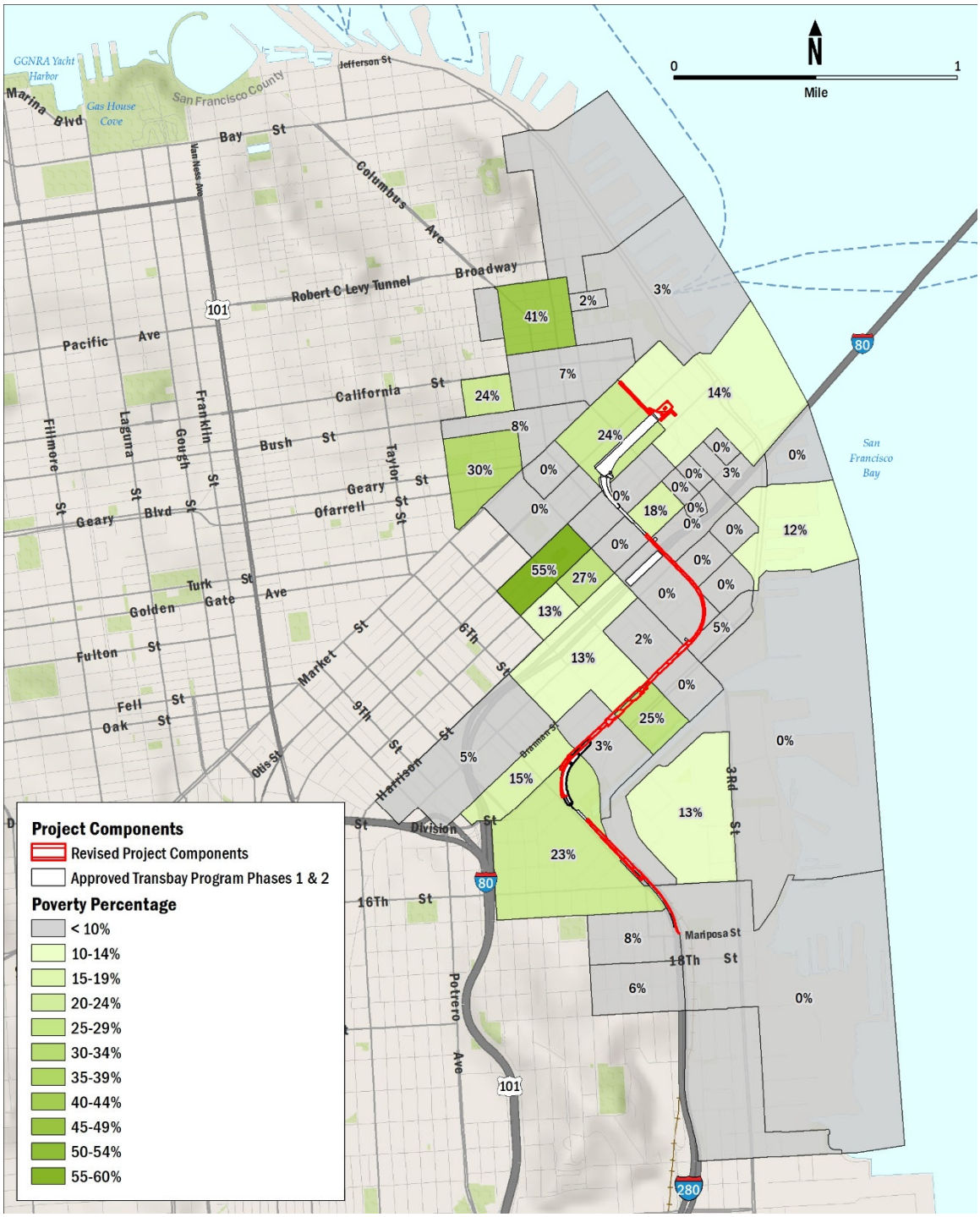

Figure 25. Percentages of Population Living Below the Poverty Line within Project Area Environmental Justice Communities - 2020

Based on field observations conducted in October and November 2022 of an approximately 50-block area around the Revised Project alignment, there are relatively few unhoused populations (estimated at fewer than 20 individuals, of which less than a half dozen were along the DTX alignment), compared to the encampments visible elsewhere in the South of Market area and south of the Revised Project in the Potrero Hill neighborhood. The majority of the unhoused populations identified during the field observations were in isolated individual tents, temporary shelters, or unprotected on sidewalks and in doorways. One homeless encampment of a few individuals was identified on the project alignment during one visit. The largest encampment of approximately a dozen tents was on a side street a few blocks north of the Caltrain Fourth and King Street Station. It would be expected that there could be unhoused individuals temporarily within 1 to 2 blocks of the Revised Project alignment at any given time.

3.8.2. Project Effects

As discussed above, almost all of the project area contains high percentages of the population that are low income and/or minority, which has changed since the 2018 Final SEIS/EIR. The environmental justice analysis draws on FTA Circular 4703.1, “Environmental Justice Policy Guidance for Federal Transit Administration Recipients” (FTA 2012), and the U.S. Department of Transportation’s Order 5610.2(a), “Actions to Address Environmental Justice in Minority Populations and Low Income Populations” (77 Federal Register 27534) (DOT 2012). These were the same guidance documents used in the 2018 Final SEIS/EIR. As explained in the 2018 Final SEIS/EIR, a disproportionate effect on an environmental justice population is dependent on the net results after consideration of the potential benefits of the project and the implementation of mitigation measures.

The Revised Project would eliminate or defer project components, or would reduce the scope and/or project footprint, and thus these components would result either in no or less adverse effects than discussed in the 2018 Final SEIS/EIR. This would be the case for the following components that would be reduced, eliminated, or deferred under the Revised Project: the BART/Muni underground pedestrian connector, train box extension, intercity bus facility, taxi staging area at the intercity bus facility, extent of three tracks in a portion of the tunnel segment, and the turnback track at-grade crossing of 16th Street. Because these components would result in reduced impacts, primarily during construction, these Revised Project components would not have disproportionately high and adverse impacts on environmental justice communities. Under the Revised Project, one improvement measure and two mitigation measures would be revised and one mitigation measure would be eliminated. These modifications would not add any new elements to the project scope but would reduce impacts. Therefore, this Revised Project component would not have disproportionately high and adverse impacts on environmental justice communities.

The following Revised Project components would result in additional impacts, primarily because of additional excavation and temporary and permanent transportation impacts: modification of the Fourth and Townsend Street Station design, realignment of the tunnel stub box, and reconfiguration of at-grade trackwork south of the Caltrain railyard (at Mission Bay Drive). With the implementation of mitigation measures, the project and the project revisions would have no adverse effects.

The only effect identified in the 2018 Final SEIS/EIR that cannot be reduced to not adverse, even with implementation of adopted mitigation measures, is nighttime construction noise. This effect would also occur for the Revised Project. The nighttime construction noise effects could occur anywhere within the project area and would only occur if the City waives the restriction

against construction between 8 pm and 7 am. In addition, the 2004 EIS/EIR acknowledged that the loss of historic resources would be significant and unavoidable and that traffic congestion and delays would occur around the Transit Center The Revised Project would not change the effects that were previously evaluated; however, these effects would occur in areas with high percentages of low income or minorities because almost all of the project area contains high percentages of the population that are low income and/or minority.

The Revised Project would confer the following benefits: enhanced mobility for all populations, including transit-dependent populations and environmental justice communities as a result of the interconnectivity of transit services locally, regionally, and across the state (e.g., Muni bus and light rail lines, the Central Subway, BART, AC Transit and other regional bus operators at the Transit Center, and HSR); increased accessibility to jobs and homes; improved accessibility to cultural, educational, medical and recreational destinations and facilities; local and regional greenhouse gas reduction benefits by reducing automobile travel, vehicle miles traveled, and the consumption of fossil fuels; and reduced vulnerability to adverse health conditions related to small particulate matter, diesel fuels, and precursors to ozone (better known as smog). Considering these benefits, disproportionately high and adverse impacts would not occur for environmental justice communities.

3.9. Public Outreach

The TJPA has held regular public meetings to share and review the proposed changes to the Transbay Program and outreach efforts to get the project ready for procurement.

TJPA Board of Directors meetings are broadcast live on SFGovTV, and a public comment call-in number is provided. Language interpreters are provided as requested. Public noticing and announcements of the meetings involve a variety of outreach activities and platforms, including:

- posting agendas and meeting materials to the website the week before the meeting;
- sending e-mail messages to meeting participants with the agenda and materials link;
- sending out a notice via e-mail through iContact to interested parties/members of the public the weekend before the meeting;
- tweeting a post with the date and time of the meeting as well as a link to the agenda on the website; and
- sending an e-mail message to the main library in San Francisco, where they post a printed copy of the agenda.

Chapter 4. Conclusions

Proposed changes to the Transbay Program DTX Phase 2 project have been evaluated in accordance with 23 CFR Section 771.129 and 23 CFR Section 771.130 and consistent with FTA's March 2019 SOP No. 17 on re-evaluations and supplemental documents. This re-evaluation considers the previously conducted environmental review for the Transbay Program DTX Phase 2 project, and concludes that no changes to the project, as proposed by the Revised Project, would result in significant environmental impacts not previously evaluated in the 2004 FEIS/EIR and 2018 Final SEIS/EIR, and no new information or circumstances relevant to environmental concerns and bearing on the Revised Project would result in significant environmental impacts not previously evaluated in those environmental documents. The changes to the proposed action, new information, or new circumstances result in a lessening of or no change to the adverse environmental impacts identified in the 2004 FEIS/EIR and 2018 Final SEIS/EIR without causing other environmental impacts that are significant and were not previously evaluated. Implementation of the mitigation measures to be incorporated into the Revised Project from the 2018 Final SEIS/EIR and the 2004 FEIS/EIR would reduce adverse effects substantially. Therefore, the conclusions of the 2018 Final SEIS/EIR are still valid.

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