San Francisco Peninsula Rail Program

Memorandum

To: Executive Steering Committee
From: Alfonso Rodriguez, DTX Project Director
Date: December 16, 2022
Re: Item 6, Action Item:
Consider Recommending the Addendum to the Transbay Program 2018 Final Supplemental Environmental Impact Report and Revised Mitigation Monitoring and Reporting Program under the California Environmental Quality Act (CEQA), and Modifications to the Downtown Rail Extension Project Analyzed Therein

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SUMMARY:

As part of the Downtown Rail Extension's (DTX) design development and optimization process, the Integrated Program Management Team (IPMT) recommended certain design configuration changes for DTX developed from the Phasing Study and Operational Analysis. These proposed changes were presented to the Executive Steering Committee (ESC) and TJPA Board in summer and fall of 2021. At that time, staff indicated that design for these proposed modifications would be further developed and the environmental effects would be characterized. In particular, the Federal Transit Administration (FTA) would be consulted after entry into the Project Development Phase of the Capital Investment Grant, New Starts Program to gain agreement on the proper documentation for National Environmental Policy Act (NEPA) compliance purposes, and TJPA would develop the required documentation for California Environmental Quality Act (CEQA) compliance purposes.

This item presents the results of the environmental assessment and documentation required under CEQA, and requests that the ESC recommend to the TJPA Board (1) adopt Addendum to the 2018 Final Supplemental Environmental Impact Report, (2) adopt the revised mitigation monitoring and reporting program, and (3) approve the revised DTX project.

REPORT:

Background

The Transbay Terminal/Caltrain Downtown Extension/Redevelopment Project Final Environmental Impact Statement/Environmental Impact Report ("2004 FEIS/EIR") evaluated the environmental and socioeconomic effects of the Transbay Terminal/Caltrain Downtown Extension/Redevelopment Project ("Transbay Program"), one component of which is the DTX. In 2004, TJPA certified the FEIR and adopted and incorporated into the Transbay Program all of the mitigation measures identified therein. In 2005, the Federal Transit Administration (FTA) oversaw preparation of the FEIS, issued its Record of Decision (ROD) and approved the Transbay Program. Subsequently TJPA adopted certain addenda to the FEIR.

In 2018, FTA and TJPA prepared a joint Supplemental EIS/EIR to evaluate certain proposed changes to the Transbay Program ("2018 FSEIS/EIR"). The TJPA certified the 2018 FSEIR, adopted and incorporated into the Transbay Program all of the mitigation measures identified therein, and approved certain revisions to the Transbay Program. In 2019, FTA approved the 2018 FSEIS and program changes, and issued its Amended ROD.

Proposed Refinements to DTX

Since approval of the Transbay Program, as modified in 2018, the TJPA has continued to refine the DTX project in partnership with other public agencies (San Francisco County Transportation Authority, City and County of San Francisco, and Metropolitan Transportation Commission) and the rail operating agencies (Peninsula Corridor Joint Powers Board [Caltrain] and California High-Speed Rail Authority) to improve its operating plans, reduce costs, and enhance its competitiveness for local, state, and federal funding. In particular, as part of the DTX design development and optimization process, the IPMT recommended certain design configuration changes for DTX developed from the Phasing Study and Operational Analysis. These proposed changes were presented to the ESC and TJPA Board in summer and fall of 2021. They are summarized as:

- Defer the BART/Muni underground pedestrian connector
- Reduce the size of the below-grade Transit Center train box extension and relocate the vent structure and emergency exit
- Defer the intercity bus facility and construct a new entrance/exit pavilion from the street level to the station below which had been included as part of the intercity bus facility
- Remove the taxi staging area at the intercity bus facility
- Reduce the number of tracks for train operations in a portion of the tunnel from three to two tracks
- Modify the Fourth and Townsend Street Station design
- Realign the tunnel stub box
- Reconfigure 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
- Modifications to mitigation measures and an improvement measure previously adopted and incorporated into the Transbay Program

When the proposed modifications were presented to the ESC and TJPA Board, staff indicated that design for these proposed modifications would be further developed and the environmental effects would be characterized.

CEQA Review; Recommended Addendum

CEQA recognizes that between the date an environmental document is certified or adopted and the time that the project is fully implemented, one or more of the following changes may occur:

1. The project may change;
2. The environmental setting in the vicinity of the project may change;
3. Laws, regulations, or policies may change in ways in which the project may impact the environment; and/or
4. Other new information of substantial importance that was not previously known may be discovered.

Before making any further project approvals, CEQA requires the lead agency to evaluate whether any of these changes have occurred and, if so, to determine whether they affect the conclusions in the previously prepared environmental document. CEQA provides that, when changes to the project are minor in nature, an administrative Addendum may be prepared to document those changes and recirculation is not required.

After careful consideration, TJPA staff has prepared an Addendum to the 2018 FSEIS/EIR (Attachment 1 hereto) to evaluate the proposed changes to the DTX project as related to the analysis and conclusions in the 2018 FSEIS/EIR. As described in detail in the Addendum, based on the nature of the changes proposed as part of the modifications to the DTX and associated environmental effects, TJPA staff recommends that the TJPA Board conclude that proposed changes in the approved Transbay Program and changes in circumstances since adoption of the 2018 FSEIS/EIR:

- Would not result in any new significant environmental effects,
- Would not substantially increase the severity of previously identified effects,
- Would not result in mitigation measures or alternatives previously found to be infeasible becoming feasible, and
- Would not result in availability/implementation of mitigation measures or alternatives that are considerably different from those analyzed in the previous document, which would substantially reduce one or more significant effects on the environment.

Staff also recommends the revised mitigation monitoring and reporting program.

Attachment 2 presents the findings of the Addendum to the Transbay Program 2018 Final Supplemental Environmental Impact Report.

DTX Comprehensive Work Plan

The San Francisco Peninsula Rail Program Memorandum of Understanding (MOU), effective June 5, 2020, described, in part, an organizational structure to support the efforts of the TJPA to develop the DTX project to ready for procurement status. Among the elements of the MOU was the creation of a detailed Comprehensive Work Plan for the development of DTX, which was adopted by the Board in December 2020. In April 2021, the Board adopted an acceleration modification to the Work Plan.

The MOU and Work Plan describe various tasks to be conducted in the project development process. MOU Task 11 is: “Perform technical studies and design to re-define and deliver a DTX initial operating phase as soon as possible.” MOU Task 12 is: “Prepare a preferred Phasing Plan conforming with technical studies and policy direction on realistic amounts/timing of funding and stakeholder delivery date expectations with an explicit goal to deliver rail service to the Salesforce Transit Center as soon as possible.” The recommended Addendum and approval of modifications to the DTX are consistent with and components of these tasks, and the request for ESC recommendation to the TJPA Board is as contemplated in the MOU.

RECOMMENDATION:

The ESC recommends that the TJPA Board (1) adopt the Addendum to the 2018 SEIR, (2) adopt the revised mitigation reporting program, and (3) approve the revised project.

ENCLOSURES:

Attachment 1: California Environmental Quality Act: Addendum to the Transbay Program 2018 Final Supplemental Environmental Impact Report

Attachment 2: Presentation

Addendum to the

Transbay Program
2018 Final Supplemental Environmental Impact Report

State Clearinghouse No. 1995063004

December 2022

Transbay Joint Powers Authority
425 Mission Street, Suite 250
San Francisco, California 94105

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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
2015 Draft SEIS/EIR	2015 Transbay Transit Center Program, Draft Supplemental Environmental Impact Statement/Environmental Impact Report
2018 Final SEIS/EIR	2018 Transbay Transit Center Program, Final Supplemental Environmental Impact Statement/Environmental Impact Report
APE	area of potential effect
ARDTP	Archaeological Research Design and Treatment Plan
AWSS	Auxiliary Water Supply System Historic District
BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Rapid Transit
BMP	best management practice
CEQA	California Environmental Quality Act
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 decibel(s)
DTX	Downtown Rail Extension
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
ESCP	erosion and sediment control plan
FEIR	Final Environmental Impact Report
FTA	Federal Transit Administration
GHG	greenhouse gas
HSR	high-speed rail
LOS	level of service
MMRP	Mitigation Monitoring and Reporting Program
MOA	Memorandum of Agreement
MOW	maintenance-of-way
MRZ	Mineral Resource Zone
NAHC	Native American Heritage Commission
NEPA	National Environmental Policy Act
NOx	nitrogen oxide
NRHP	National Register of Historic Places
OPR	(Governor's) Office of Planning and Research
PM	particulate matter
PM2.5	particulate matter with diameter 2.5 micrometers and smaller
POAQC	Project of Air Quality Concern
project	project evaluated in the 2018 Final SEIS/EIR and subsequently approved by TJPA in 2018 and FTA in 2019

Revised Project	2018 Final SEIS/EIR approved project plus proposed changes as described in this CEQA Addendum
ROD	Record of Decision
RWQCB	Regional Water Quality Control Board
SFMTA	San Francisco Municipal Transportation Agency
SFPUC	San Francisco Public Utilities Commission
SHPO	State Historic Preservation Officer
SoMa	South of Market
TAC	toxic air contaminant
TJPA	Transbay Joint Powers Authority (the CEQA lead agency)
Transbay Program	Transbay Terminal/Caltrain Downtown Extension/ Redevelopment Project
Transit Center	Salesforce Transit Center
U.S.C.	U.S. Code
VMT	vehicle miles traveled

1. Introduction

The California Environmental Quality Act (CEQA) recognizes that between the date an environmental document is certified or adopted and the time that the project is fully implemented, one or more of the following changes may occur: 1) the project may change; 2) the environmental setting in the vicinity of the project may change; 3) laws, regulations, or policies may change in ways in which the project may impact the environment; and/or 4) other new information of substantial importance that was not previously known may be discovered (for more specifics see section below titled "CEQA Guidelines Regarding Changes to a Project"). Before making any further project approvals, CEQA requires the lead agency to evaluate whether any of these changes have occurred and, if so, to determine whether they affect the conclusions in the previously prepared environmental document.

The purpose of this Addendum to the 2018 *Final Supplemental Environmental Impact Statement/Environmental Impact Report* (2018 Final SEIS/EIR) (TJPA 2018) for the Transbay Program (the Addendum) is to evaluate proposed changes to the Downtown Rail Extension, which is part of a passenger rail project approved by the Transbay Joint Powers Authority (TJPA) in 2018, as well as changed conditions under which the project would be implemented, to determine whether major revisions to the previously certified 2018 Final SEIS/EIR are needed. The TJPA is the lead agency for CEQA compliance because it is the public agency with primary responsibility for carrying out or approving a project, and this Addendum presents the results of TJPA's assessment.

1.1 Background

The *Transbay Terminal/Caltrain Downtown Extension/Redevelopment Project Final Environmental Impact Statement/Environmental Impact Report* (2004 FEIS/EIR) (TJPA 2004) evaluated the environmental and socioeconomic effects of the Transbay Terminal/Caltrain Downtown Extension/Redevelopment Project (Transbay Program), a proposal for a vibrant new neighborhood in San Francisco organized around a new transit center and for an extension of the Caltrain commuter rail service (Downtown Rail Extension or "DTX") from its current terminus, which is approximately 1.3 miles to the west of the new transit center, to the underground train box of the new transit center. These project components are referred to as the "Transbay Program." In 2004, the TJPA certified the EIR, adopted and incorporated into the Transbay Program all of the mitigation measures identified in the 2004 FEIS/EIR (the "2004 Mitigation Measures"), and approved the Transbay Program. The Federal Transit Administration (FTA) was the federal lead agency partnering with the TJPA, oversaw preparation of the federal environmental document (the EIS), and approved the Transbay Program in 2005.

Key portions of the Transbay Program have been implemented. For example, the Transit Center District Plan was adopted by the City and County of San Francisco (city) in May 2012, which authorized substantial redevelopment of the lands surrounding the transit center, and the new transit center opened in August 2018. This new transit center is known as the Salesforce Transit Center (Transit Center). The extension of Caltrain service to the Transit Center was deferred to another phase (DTX Phase 2). During further design phases of the DTX, the TJPA identified a number of revisions to the DTX Phase 2 project, as well as other transportation improvements and opportunities to support city goals to promote land development in conjunction with several of the rail facilities (see Figure 1-1).

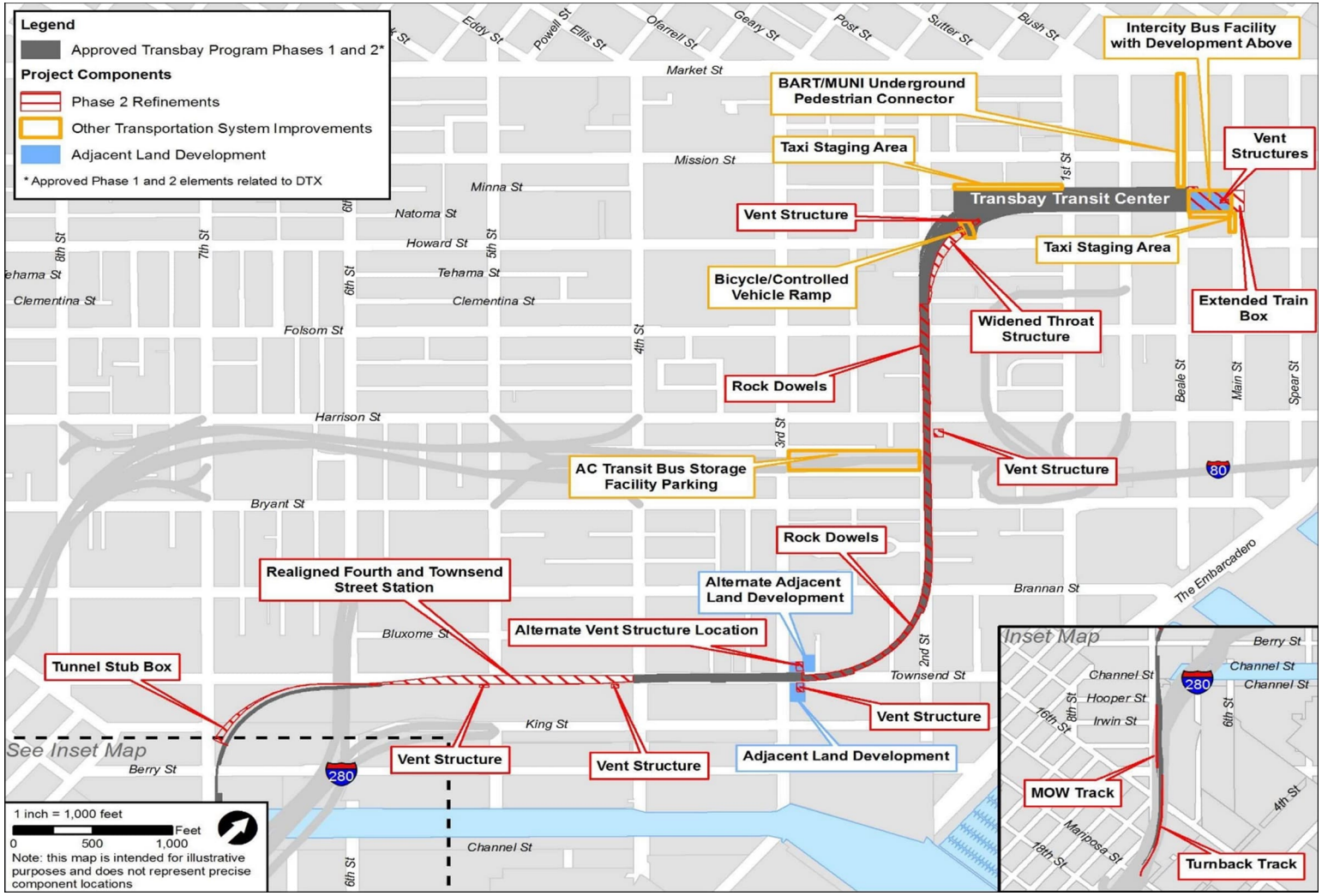


Figure 1-1. 2018 Final SEIS/EIR Project Components

A joint Supplemental EIS to support requirements of the National Environmental Policy Act (NEPA) and CEQA Supplemental EIR (the 2018 Final SEIS/EIR) was prepared by TJPA and FTA to evaluate these proposed changes to the approved 2004 Transbay Program. The TJPA certified the EIR, adopted and incorporated into the Transbay Program all of the mitigation measures identified in the 2018 Final SEIS/EIR (the "2018 Mitigation Measures"), and approved the revisions to the DTX Phase 2 in 2018.

CEQA requires an assessment of impacts of a project on the physical environment. The following list of resources were evaluated in the 2018 Final SEIS/EIR[1]:

- Transportation
- Land use and planning, wind, and shadow
- Socioeconomics, population, and housing
- Visual quality/aesthetics
- Historic and cultural resources
- Biological resources
- Water resources and water quality
- Geology, soils and seismicity
- Hazardous materials
- Electromagnetic fields
- Noise and vibration
- Air quality; greenhouse gases and climate change
- Public services, community services, and recreational facilities
- Safety and security
- Utilities
- Environmental justice communities.

The 2018 Final SEIS/EIR concluded that the proposed changes to the approved Transbay Program would result in "significant" impacts that required "mitigation" measures, or actions to avoid, minimize, rectify, or compensate for the significant impacts. The 2018 Final SEIS/EIR recommended new mitigation measures in addition to those from the 2004 FEIS/EIR (referred to as "Mitigation Measure New-"). Even with implementation of the new mitigation measures identified in the 2018 Final SEIS/EIR, two impacts could not be substantially reduced and remain significant and unavoidable. These two impacts were sea-level rise by 2100 and nighttime construction noise. All other resource topics were reported to result in no impacts, less-than-significant impacts, or less-than-significant impacts with mitigation incorporated.

The TJPA Board certified the Final EIR, adopted and incorporated into the Transbay Program the new mitigation measures identified in the 2018 Final SEIS/EIR, and approved the changes to the Transbay Program on December 13, 2018. FTA also approved the final environmental document and Transbay Program changes, and issued its "decision" document, the Amended Record of Decision (Amended ROD) document on July 22, 2019. The Amended ROD updated the ROD previously issued by FTA on February 8, 2005 for the Transbay Program. The original 2004 CEQA/NEPA document and the 2018 Final SEIS/EIR are available online (https://tjpa.org/project/seis-eir#:~:text=The%20Final%20SEIS%2FEIR%20is,in%20the%20Final%20SEIS%2FEIR).

[1] The following resources are typically not covered under CEQA but were analyzed because of NEPA and FTA considerations: socioeconomics, electromagnetic fields, safety and security, and environmental justice communities.

Since approval of the Transbay Program, as modified in 2018, the TJPA has continued to refine the DTX Phase 2 project in partnership with other public agencies (San Francisco County Transportation Authority, City and County of San Francisco, and Metropolitan Transportation Commission) and the rail operating agencies (Peninsula Corridor Joint Powers Board [Caltrain] and California High-Speed Rail Authority) to improve its operating plans, reduce costs, and enhance its competitiveness for local, state, and federal funding. These changes comprise the proposed "Revised Project," analyzed in this Addendum, which is described in detail in Section 2. The changes consist of deferring some components of the 2018 approved project, reducing the size of some components, and reconfiguring/redesigning other components.

1.2 CEQA Guidelines Regarding Changes to a Project

CEQA Guidelines Section 15162 specifies the type of documentation required when changes are proposed to a project. CEQA Guidelines Section 15162 states:

(a) When an EIR has been certified or a negative declaration adopted for a project, no subsequent EIR shall be prepared for that project unless the lead agency determines, on the basis of substantial evidence in the light of the whole record, one or more of the following:

(1) Substantial changes are proposed in the project which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;

(2) Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or

(3) New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete or the negative declaration was adopted, shows any of the following:

(A) The project will have one or more significant effects not discussed in the previous EIR or negative declaration;

(B) Significant effects previously examined will be substantially more severe than shown in the previous EIR;

(C) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or

(D) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

(b) If changes to a project or its circumstances occur or new information becomes available after adoption of a negative declaration, the lead agency shall prepare a subsequent EIR if required under subdivision (a). Otherwise the lead agency shall determine whether to prepare a subsequent negative declaration, an addendum, or no further documentation.

(c) Once a project has been approved, the lead agency's role in project approval is completed, unless further discretionary approval on that project is required. Information appearing after an approval does not require reopening of that approval. If after the project is approved, any of the conditions described in subdivision (a) occurs, a subsequent EIR or negative declaration shall only be prepared by the public agency which grants the next discretionary approval for the project, if any. In this situation no other responsible agency shall grant an approval for the project until the subsequent EIR has been certified or subsequent negative declaration adopted.

(d) A subsequent EIR or subsequent negative declaration shall be given the same notice and public review as required under Section 15087 or Section 15072. A subsequent EIR or negative declaration shall state where the previous document is available and can be reviewed.

Section 15164 of the CEQA Guidelines addresses preparation of an addendum for situations when a subsequent or supplemental EIR is not required:

(a) The lead agency or responsible agency shall prepare an addendum to a previously certified EIR if some changes or additions are necessary but none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred.

(b) An addendum to an adopted negative declaration may be prepared if only minor technical changes or additions are necessary or none of the conditions described in Section 15162 calling for the preparation of a subsequent EIR or negative declaration have occurred.

(c) An addendum need not be circulated for public review but can be included in or attached to the final EIR or adopted negative declaration.

(d) The decision-making body shall consider the addendum with the final EIR or adopted negative declaration prior to making a decision on the project.

(e) A brief explanation of the decision not to prepare a subsequent EIR pursuant to Section 15162 should be included in an addendum to an EIR, the lead agency's findings on the project, or elsewhere in the record. The explanation must be supported by substantial evidence.

1.3 Applicability of CEQA Addendum

Based on the nature of the changes proposed as part of the Revised Project and associated environmental effects, as described further in Section 3 of this Addendum, TJPA has determined that proposed changes in the approved Transbay Program and changes in circumstances since adoption of the 2018 Final SEIS/EIR:

- would not result in any new significant environmental effects,
- would not substantially increase the severity of previously identified effects,

- would not result in mitigation measures or alternatives previously found to be infeasible becoming feasible, and
- would not result in availability/implementation of mitigation measures or alternatives that are considerably different from those analyzed in the previous document, which would substantially reduce one or more significant effects on the environment.

Therefore, this Addendum to the 2018 Final SEIS/EIR for the Transbay Program, focused on the DTX Phase 2, is considered to be the appropriate document to evaluate the environmental consequences of the Revised Project.

2. Revised Project

2.1 Project Approved in 2018

The changes in the Transbay Program, as analyzed in the 2018 Final SEIS/EIR and approved in 2018, consist of the following refinements to Phase 2 of the Transbay Program and other transportation improvements, which are described in Chapter 2 of the 2018 Final SEIS/EIR and shown in Figure 1-1:

Phase 2 Refinements

- Widen throat structure at west end of the train box from the Transit Center to Clementina Street, along Second Street
- Extend the train box one block to the east side of Main Street
- Realign the underground Fourth and Townsend Street Station within Townsend Street
- Relocate, add, and modify the emergency vent structures
- Construct an underground train box (tunnel stub box) at the west end of the Caltrain railyard
- Install rock dowels along Second Street and along the curve to Townsend Street
- Add 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

- Construct an intercity bus facility at the Transit Center above the extended train box
- Site new taxi staging areas at the Transit Center
- Construct a new bicycle ramp, a bike storage facility, and a ramp for maintenance vehicles at the Transit Center
- Add off-hour/nighttime public parking at the approved AC Transit bus storage facility
- Shift a proposed underground pedestrian connector between the Transit Center and the Bay Area Rapid Transit (BART)/Muni Metro Embarcadero Station, from Fremont Street to Beale Street

2.2 Proposed Revisions to the Project

Since completion of the CEQA environmental review in 2018 for the Transbay Program (DTX Phase 2), TJPA and its partners on the Integrated Program Management Team, which consists of representatives from TJPA, Metropolitan Transportation Commission, San Francisco County Transportation Authority, Peninsula Corridor Joint Powers Board (Caltrain), California High-Speed Rail Authority, and City and County of San Francisco, have reviewed carefully and assessed the timing and need for several of the transportation improvements that are part of the approved Transbay Program. The purpose of the review was to determine whether new or revised operating conditions could improve service, alter

project design, and/or reduce 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 specific project components. These components are identified below.

- Defer the BART/Muni underground pedestrian connector
- Reduce the size of the below-grade Transit Center train box extension and relocate the vent structure and emergency exit
- Defer the intercity bus facility and construct a new entrance/exit pavilion from the street level to the station below which had been included as part of the intercity bus facility
- Remove the taxi staging area at the intercity bus facility
- Reduce the number of tracks for train operations in a portion of the tunnel from three to two tracks
- Modify the Fourth and Townsend Street Station design
- Realign the tunnel stub box
- Reconfigure 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
- Modifications to mitigation measures and an improvement measure previously adopted and incorporated into the Transbay Program

This Addendum evaluates these changes to the DTX Phase 2 Program as related to the analysis and conclusions in the 2018 Final SEIS/EIR. More information on each of these changes is presented following Figure 2-1, which shows the location of first eight Revised Project components listed above.

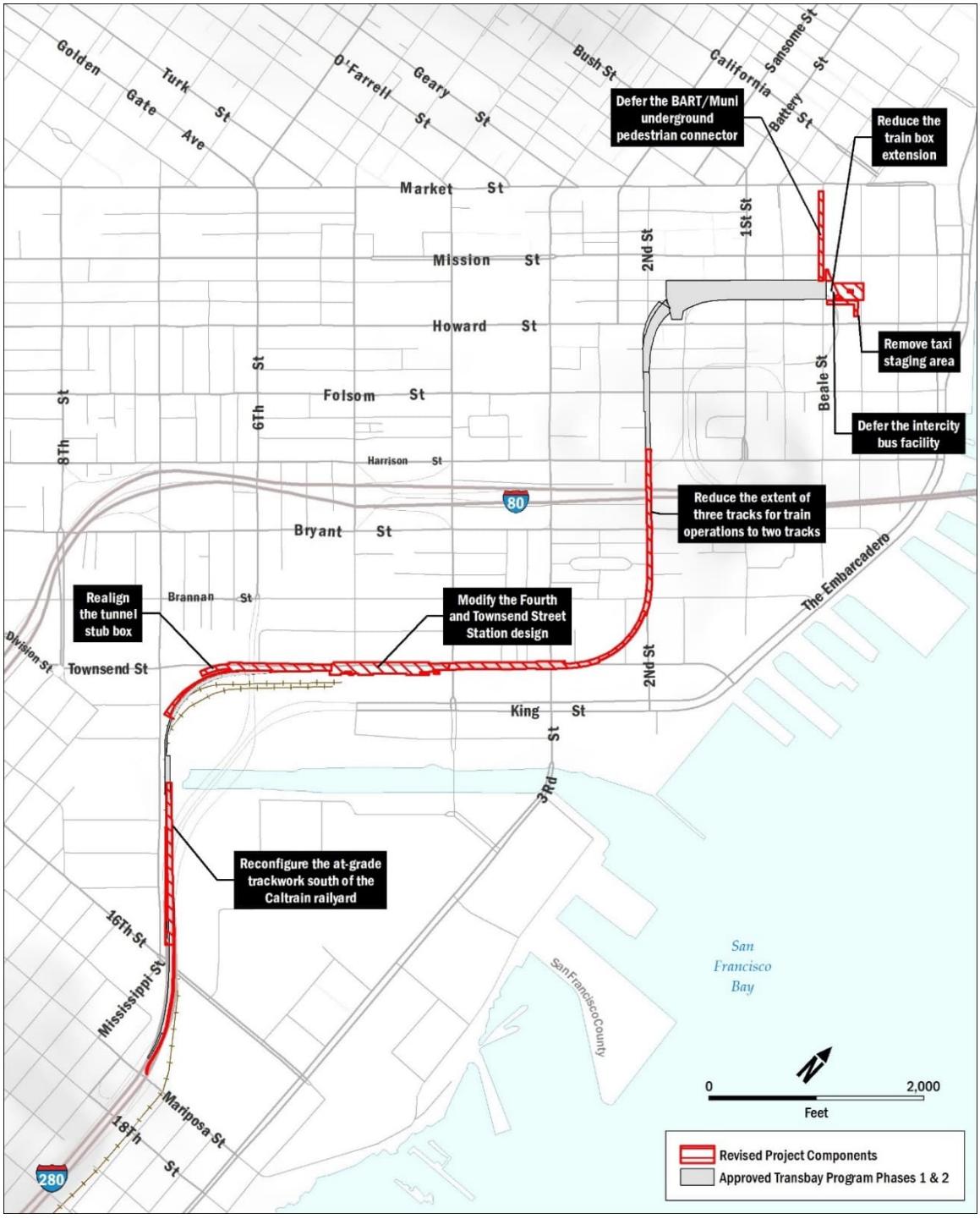


Figure 2-1. Revised Project Component Locations

Defer the BART/Muni Underground Pedestrian Connector

Approved Project. The approved project includes an underground pedestrian tunnel following Beale Street to provide direct connection between the Embarcadero BART/Muni Metro Station and the Transit Center (Figure 2-2). 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 would come from the financial district north of Market Street, would use the northern end of the connector, and could use any of the streets between The Embarcadero to the east and Battery Street to the west. Neighborhood passengers using the southern end of the connector would come from 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.

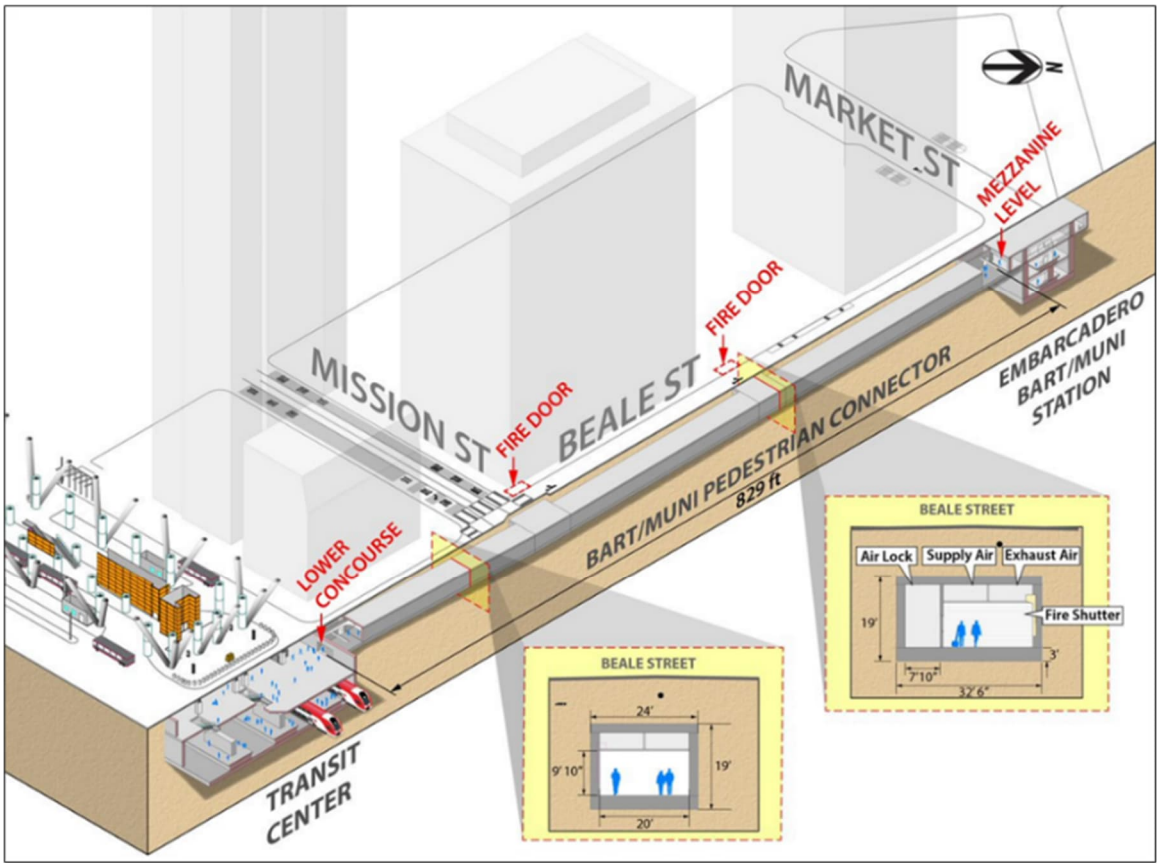


Figure 2-2. Approved BART/Muni Pedestrian Connector to be Deferred

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 in the future and would be coordinated with BART's multi-year, phased-capacity implementation strategy and modernization concept plan for the Embarcadero and Montgomery Stations.

Description and Objective of 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

Approved Project. The approved 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 approved train box extension made the new design of the train box compatible with CHSRA design standards at the time. The approved 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 on Main Street is part of the project.

Description and Objective of 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 2-3). 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 approved as 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 2-3.

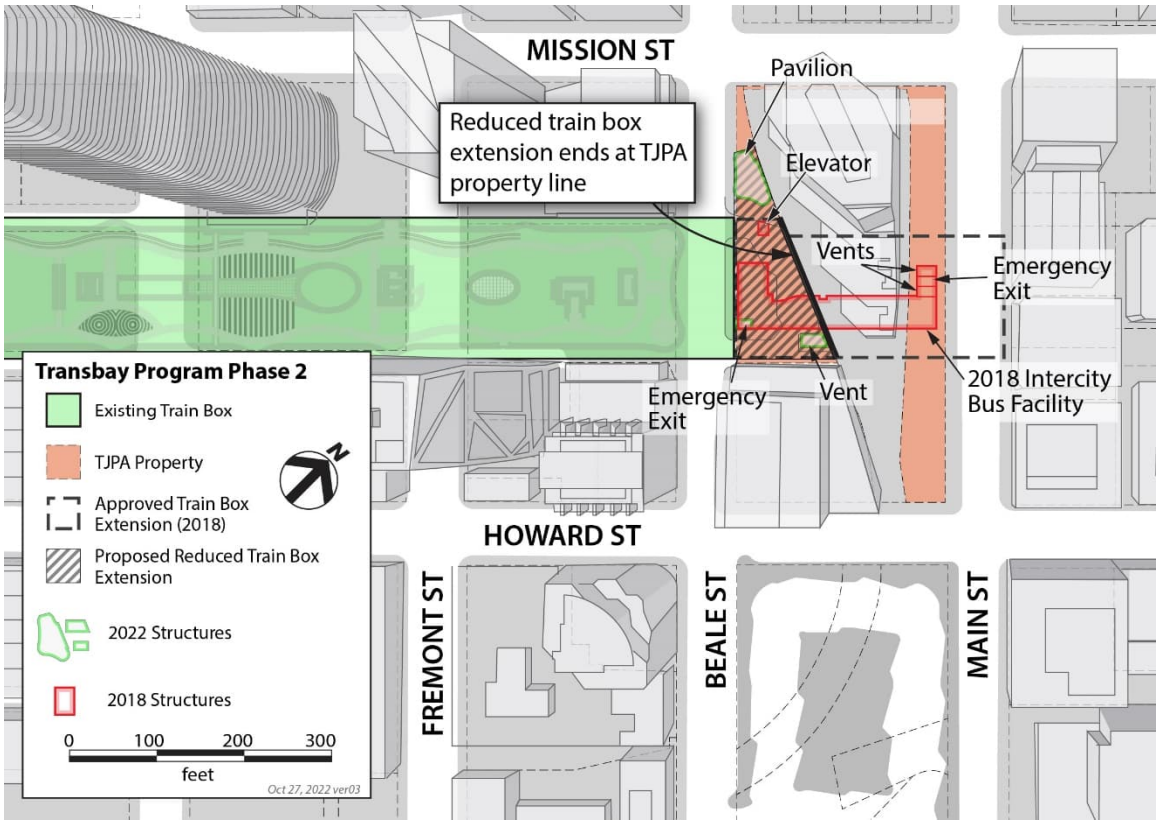


Figure 2-3. Proposed Reduced Train Box Extension

Defer the Intercity Bus Facility

Approved Project. The approved 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 2-4, 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.

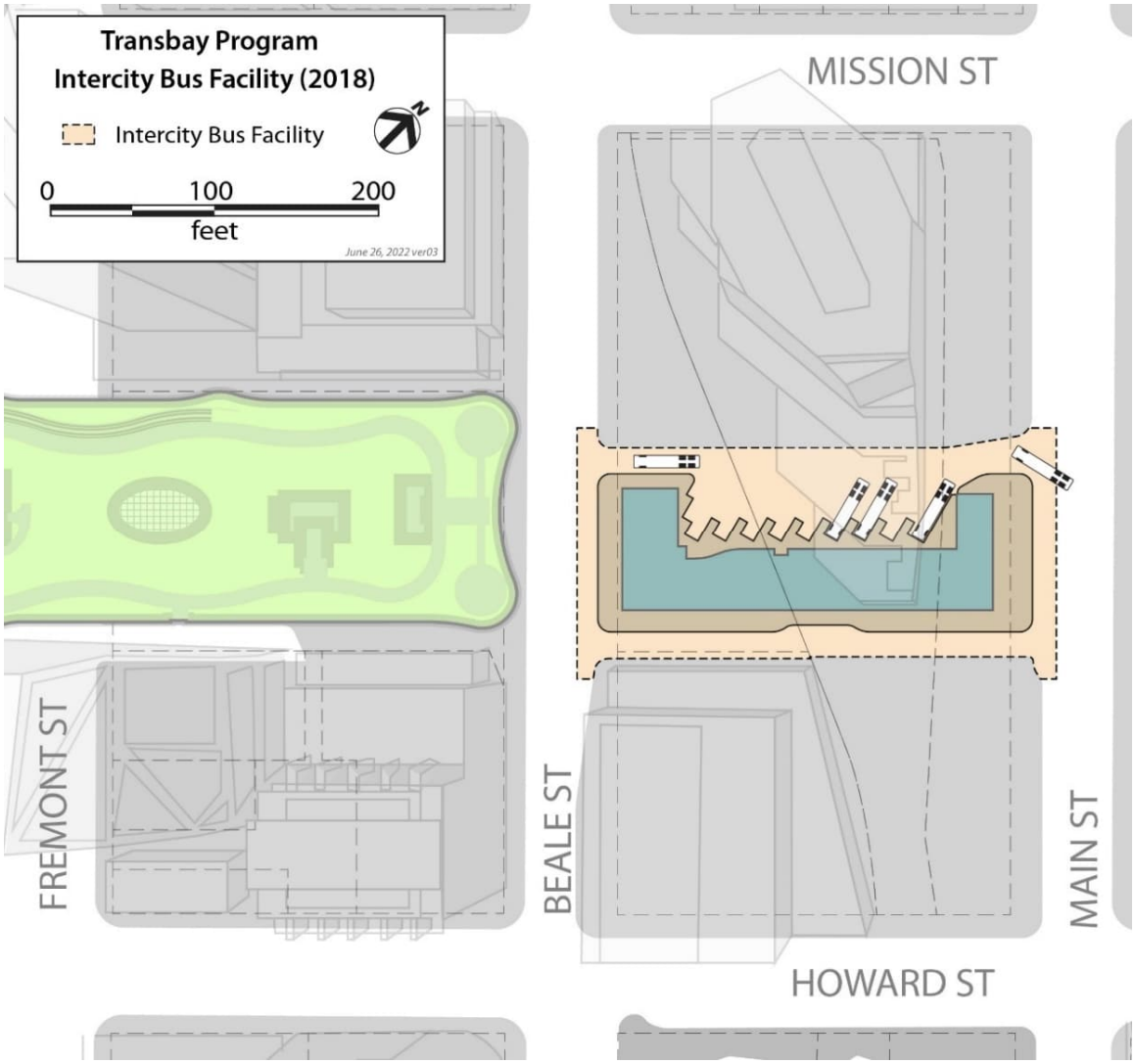


Figure 2-4. Approved Intercity Bus Facility

Description and Objective of 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 approved 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 2-3.

Remove the Taxi Staging Area at the Intercity Bus Facility

Approved Project. The approved 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 approved 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 2-5.

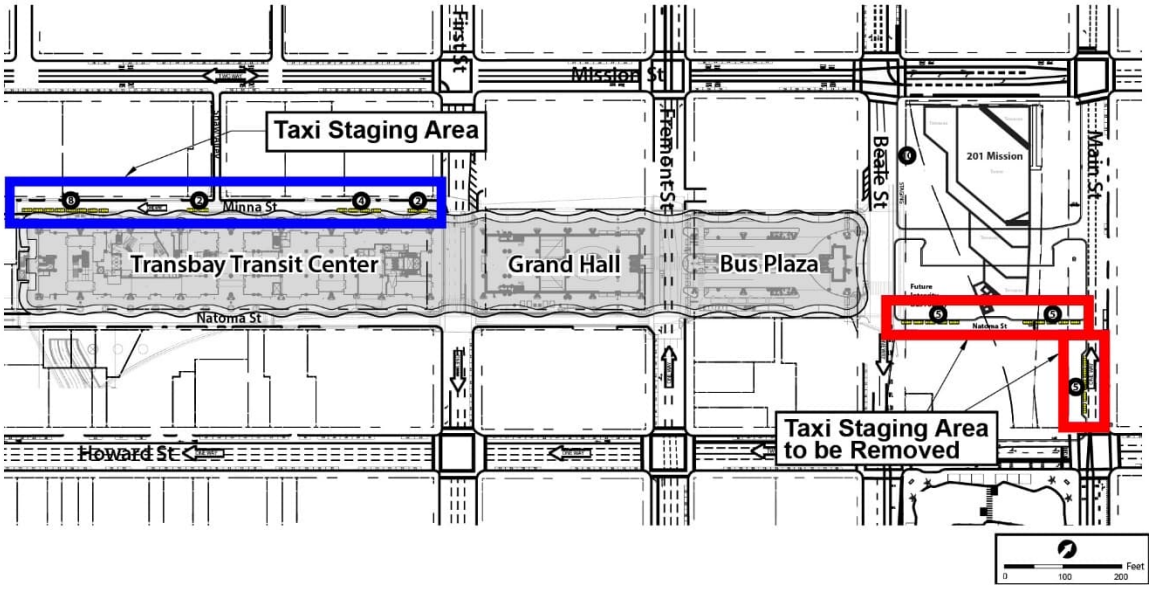


Figure 2-5. Approved Taxi Staging Area at the Intercity Bus Facility to be Removed

Description and Objective of 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 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 approved taxi staging area at the intercity bus facility.

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

Approved Project. The approved 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 and Objective of 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 2-6). Approximately 3,900 feet of the approved 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 2-7). The amount of excavation also would decrease by 67,000 cubic yards because of the reduced tunnel width in this segment.

Figure 2-6. Approved Three-Track Tunnel Segment to be Converted to Two Tracks

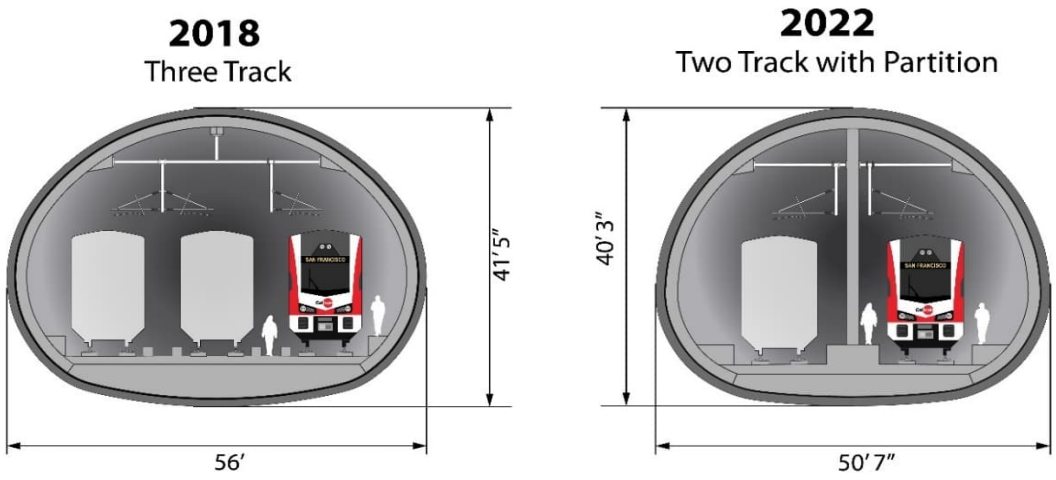


Figure 2-7. Cross Section of Proposed Two-Track Tunnel Segment Compared to Approved Three-Track Tunnel Segment

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

Approved Project. The approved 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 previously approved DTX station plan and profile, which was oriented diagonally partially under the Caltrain railyard and partially under Townsend Street (Figure 2-8). The approved 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 2-9).

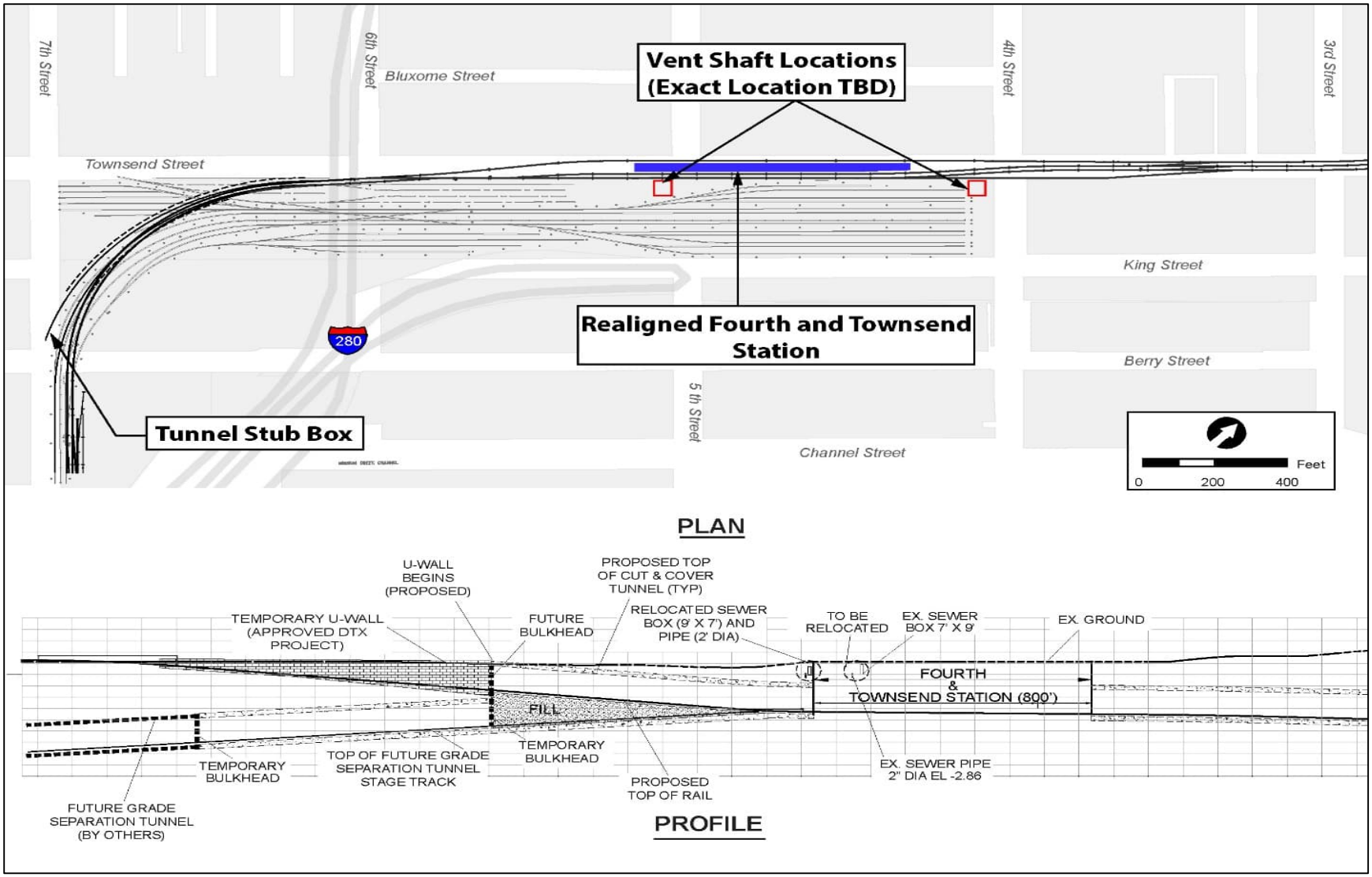


Figure 2-8. Approved Fourth and Townsend Street Station Plan and Profile to be Modified

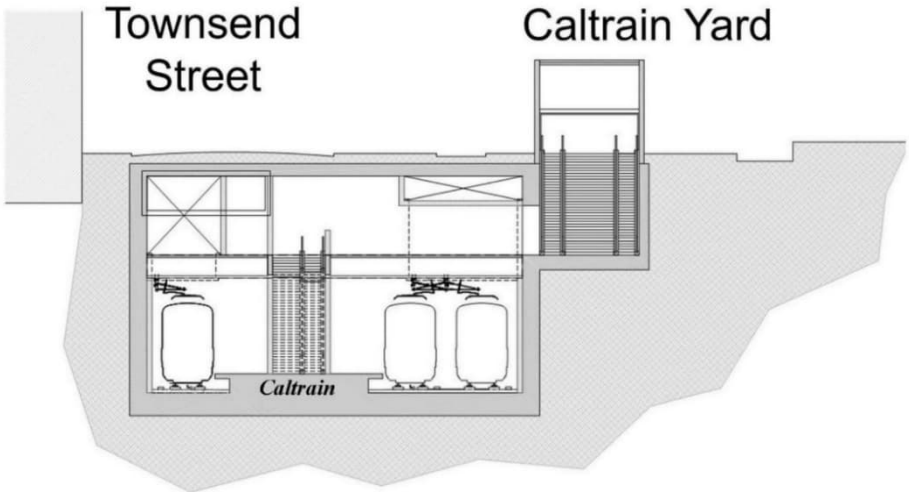


Figure 2-9. Approved Fourth and Townsend Street Station

Description and Objective of 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 2-10). 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 high-speed rail (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.

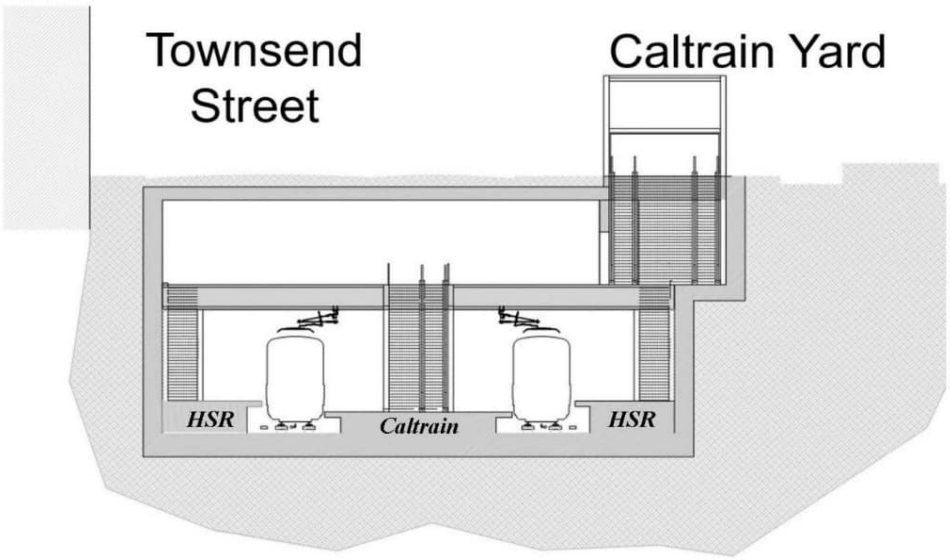


Figure 2-10. Proposed Modifications to Fourth and Townsend Street Station Design –Transverse Section of Change in Station Platforms

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 approved station box. The approved 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 approved 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 2-11. The 2018 approved 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 approved project.

Realign the Tunnel Stub Box

Approved Project. The approved 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 previously approved 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 2-11. 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.

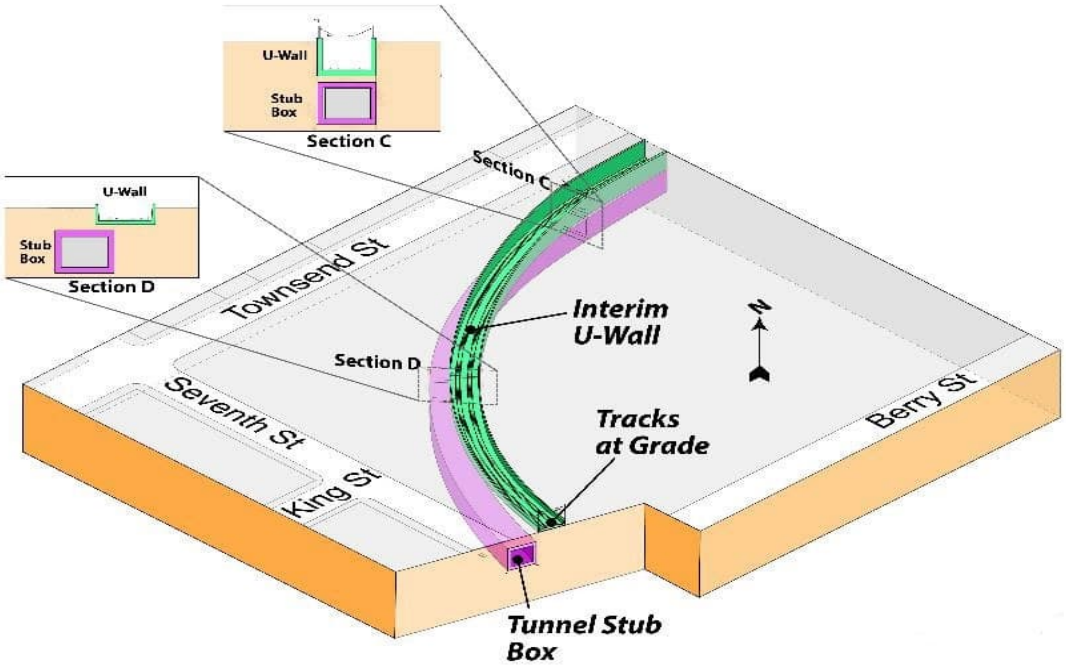


Figure 2-11. Approved Tunnel Stub Box at Caltrain Railyard

Description and Objective of 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 2-12). 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.

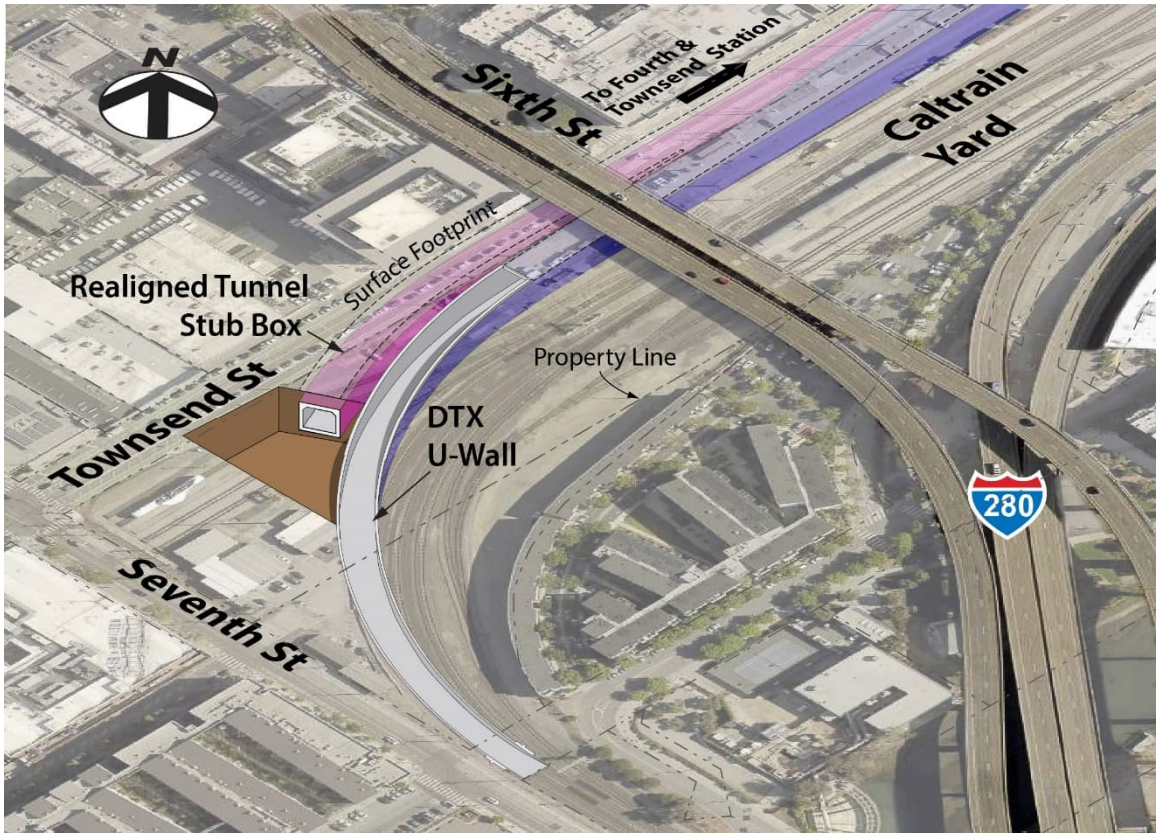


Figure 2-12. Proposed Realigned Tunnel Stub Box

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 high-speed rail. 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 HSR service, and to preserve future options regarding grade separations. The proposed alignment would require less excavation than the approved 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

Approved Project. The approved 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 2-13). 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.

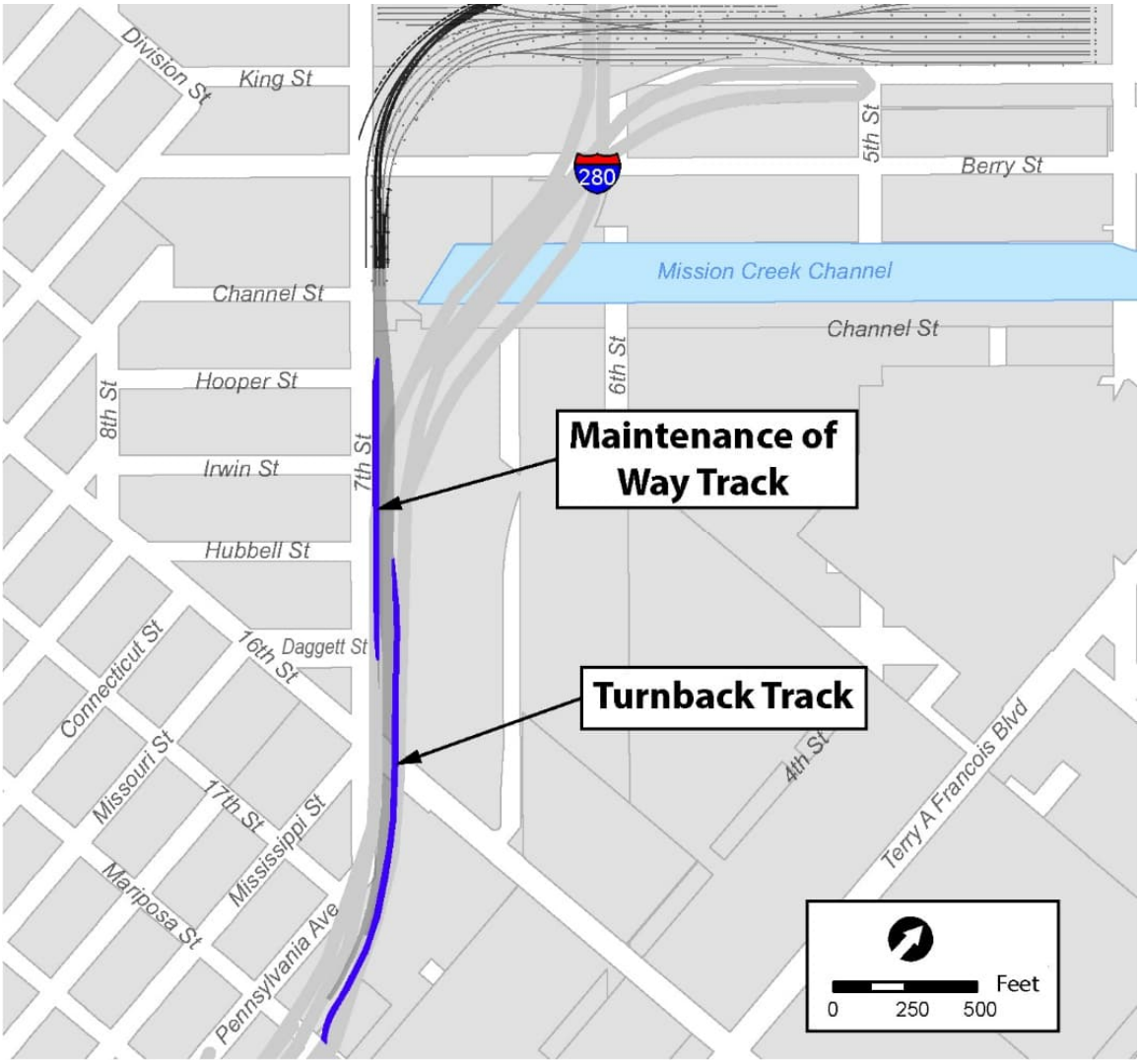


Figure 2-13. Approved Additional Trackwork South of the Railyard

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 approved 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 approved 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 and Objective of 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

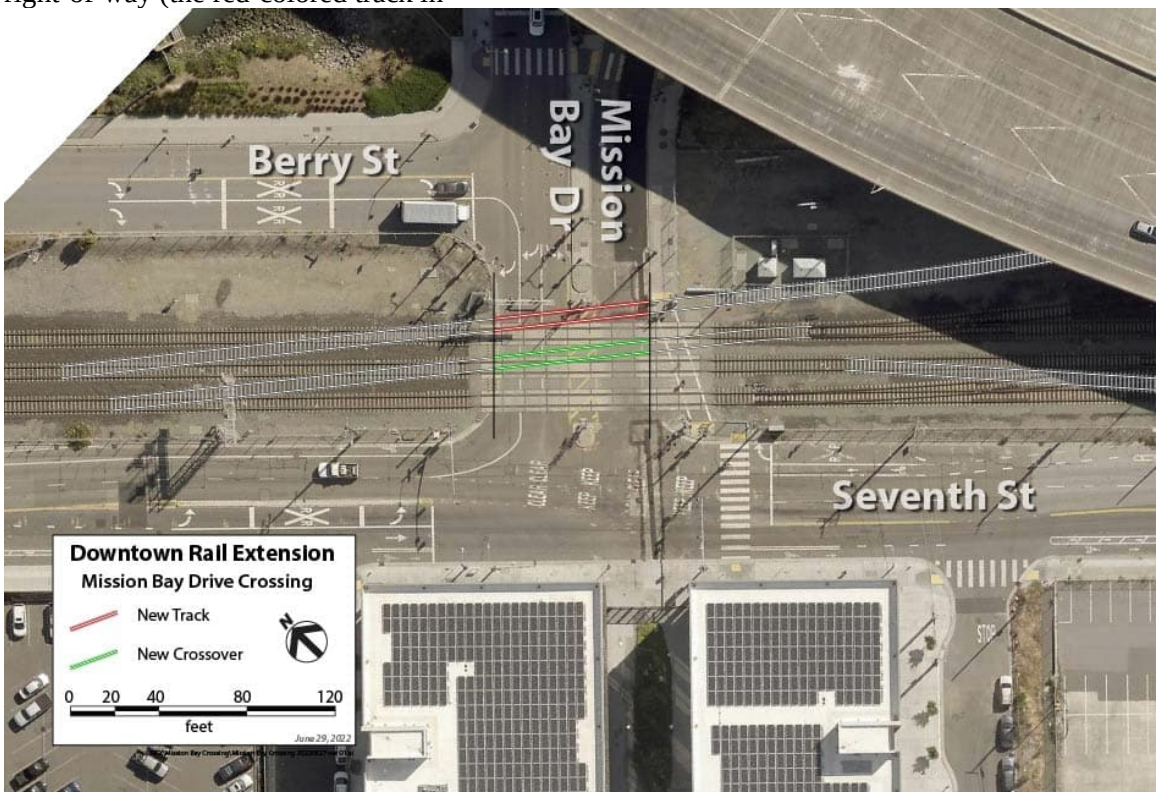


Figure 2-14), resulting in four tracks at this crossing compared to the three existing Caltrain tracks. The additional, fourth track could be used to access either the MOW or turnback track. It would be at a slight angle (further from the other tracks at the south end) and would require moving the east 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 2-14). 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 2-14) 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.

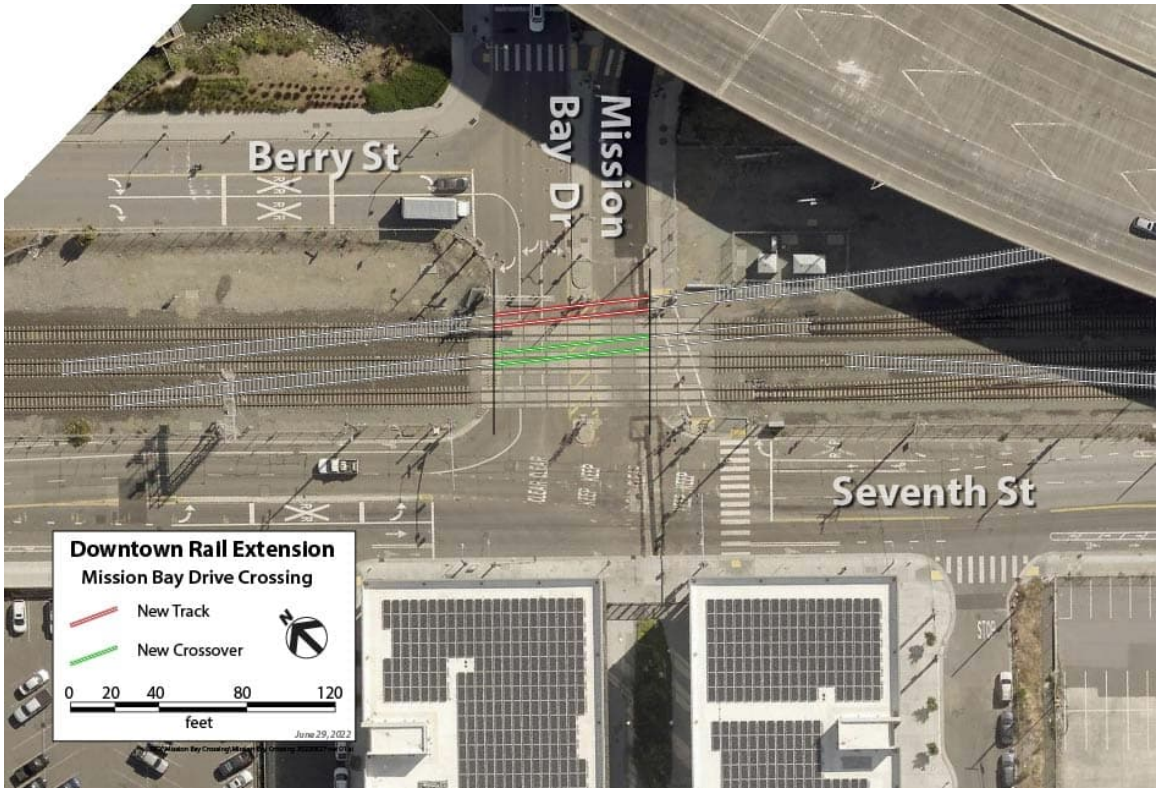


Figure 2-14. Proposed Reconfiguration of At-Grade Trackwork at Mission Bay Drive

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 2-15 shows this new track, as well as the new track across Mission Bay Drive described above.

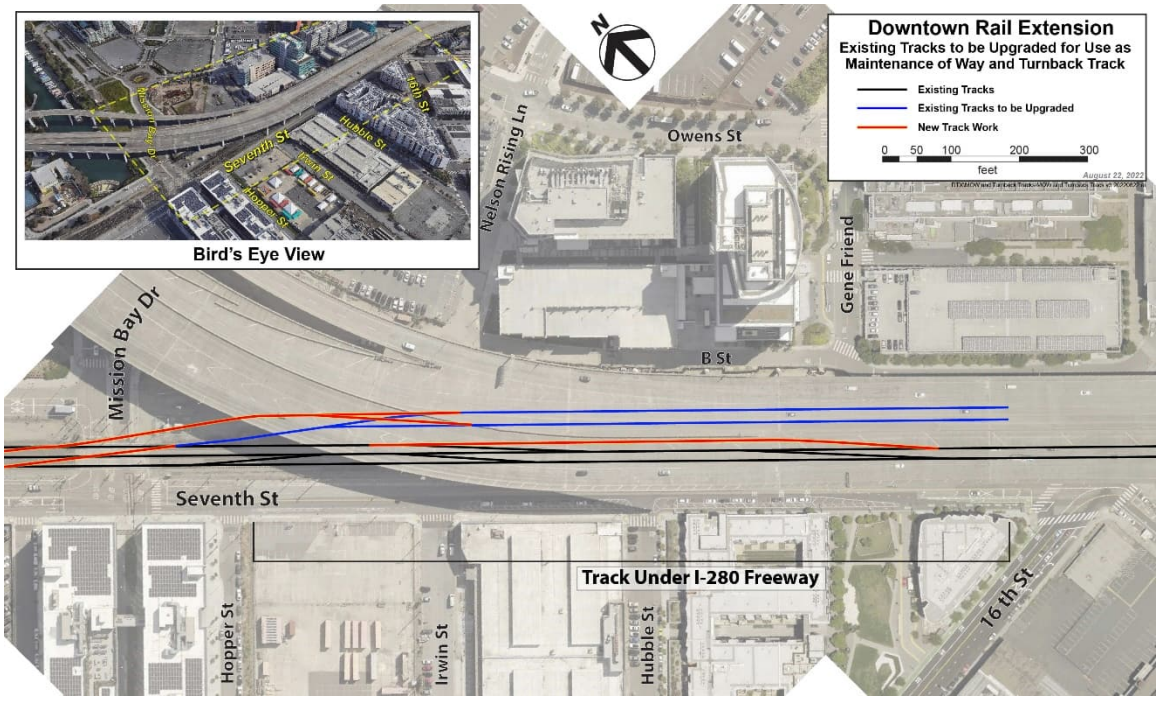


Figure 2-15. Proposed Reconfiguration of At-Grade Trackwork South of the Caltrain Railyard

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

Approved 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 found to reduce the potentially significant impact.

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 less-than-significant impacts to traffic at the at-grade crossing of the turnback track.

Description and Objective of 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.
>
> - 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 fourth track at the 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 track~~s~~ to evaluate traffic operations along Mission Bay Drive at ~~16th Street at~~ Seventh~~/Mississippi~~ Street, the Caltrain MOW/turnback track, and Berry~~Owens~~ 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 analysis~~so 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 this~~ese~~ crossing~~s~~ 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 Seventh7th~~ 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~~.

3. Environmental Analysis

The following environmental analysis is based on the Environmental Checklist Form in Appendix G of the CEQA Guidelines. The checklist considers the full range of environmental issues subject to analysis under CEQA (in rows), and then poses a series of questions (in columns) to identify the degree to which each issue was considered in the 2018 Final SEIS/EIR, and whether changes to the project or conditions under which the Revised Project would be implemented would constitute new information of substantial importance for each environmental issue. The questions posed in each column are described next.

The environmental analysis in this section addresses the provisions in Section 15162 of the CEQA Guidelines, described in Section 1, Introduction, "CEQA Guidelines Regarding Changes to a Project."

Summary Tables

The provisions in Section 15162 of the CEQA Guidelines are reflected in tables at the beginning of the resource topics that are analyzed in this section. Specifically, the tables provide information on each of the items discussed next.

Significance Determination from the 2018 Final SEIS/EIR. This column presents the significance determination from the 2018 Final SEIS/EIR. For each impact evaluated, the level of significance of the impact in the 2018 Final SEIS/EIR is shown as the level of significance of each impact for the Revised Project where applicable. The environmental analysis applies a uniform classification of the impacts based on the following definitions, consistent with CEQA and its implementing CEQA Guidelines:

- No Impact (NI) – A designation of no impact is used when no changes in the environment would occur.
- Less-than-Significant Impact (LTS) – A less-than-significant impact would cause no substantial adverse change in the environment.
- Less-than-Significant Impact with Mitigation Incorporated (LTS-M) – A less-than-significant impact with mitigation incorporated would minimize substantial adverse impacts on the environment. The number of the mitigation measure from the 2018 Mitigation Monitoring and Reporting Program (MMRP) is referenced and presented in detail in Appendix A of this Addendum.
- Significant and Unavoidable (SU) – Significant impacts that cannot be reduced to a less-than-significant level, even with implementation of mitigation measures, are classified as significant and unavoidable.
- Beneficial (B) – Although CEQA emphasizes identification of substantially adverse impacts on the physical environment, it does not preclude the classification of impacts as beneficial when a project would improve environmental conditions over the existing baseline conditions.

Significance Determination for the Revised Project. This column identifies the significance determination for the Revised Project.

Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new significant impacts or changes in the severity of previously identified significant impacts? In accordance with Section 15162(a)(1) of the CEQA Guidelines, this column indicates whether changes in the project would necessitate major changes to the 2018 Final SEIS/EIR because of new significant environmental impacts or a substantial increase in the severity of previously identified significant impacts.

Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new or changed circumstances involving new significant impacts or substantially more severe impacts than those analyzed in the 2018 Final SEIS/EIR? In accordance with Section 15162(a)(2) of the CEQA Guidelines, this column indicates whether changes to the circumstances under which the Revised Project would be undertaken have occurred that would involve new significant environmental impacts or a substantial increase in the severity of previously identified significant impacts.

Has new information become available, resulting in previously undisclosed significant impacts, a change in the severity of significant impacts, or a change in the feasibility of mitigation measures? In accordance with Sections 15162(a)(3) of the CEQA Guidelines, this column indicates whether new information of substantial importance has become available, which was not known and could not have been known with the exercise of reasonable diligence at the time that the 2018 Final SEIS/EIR was certified on December 13, 2018, and where this information could result in new or more significant impacts, or a change in the feasibility of mitigation measures adopted to reduce the significance of impacts.

Discussion and Conclusion Sections

The discussion provides information about the particular environmental topic, the Revised Project's effects on the topic, and the adopted mitigation measure(s) required to reduce significant impacts. The discussion then transitions to compare and contrast the effects of the Revised Project compared with the project as described in the 2018 Final SEIS/EIR. A conclusion that the Revised Project would involve no new significant impacts and/or substantially more severe impacts supports the use of this Addendum as the appropriate level of environmental documentation for the Revised Project.

Mitigation Measures

Previously identified mitigation measures from the 2004 FEIS/EIR (i.e., 2004 Mitigation Measures) and 2018 Final SEIS/EIR (i.e., 2018 Mitigation Measures) have been adopted and incorporated into the Transbay Program and, thus, these mitigation measures also would be implemented as part of the Revised Project. The full text of these mitigation measures is provided in Appendix A of this Addendum.

3.1 Aesthetics

Would the project:	Significance Determination from the 2018 Final SEIS/EIR	Significance Determination for the Revised Project	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new significant impacts or changes in the severity of previously identified significant impacts?	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new or changed circumstances involving new significant impacts or substantially more severe impacts than those analyzed in the 2018 Final SEIS/EIR?	Has new information become available, resulting in previously undisclosed significant impacts, a change in the severity of significant impacts, or a change in the feasibility of mitigation measures?
a) Have a substantial adverse effect on a scenic vista?	LTS	LTS	No	No	No
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	LTS	LTS	No	No	No
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	LTS	LTS	No	No	No
d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	LTS	LTS	No	No	No

Discussion

Prior Analysis. Prior analysis in the 2018 Final SEIS/EIR (Section 2.10) concluded that potential visual impacts resulting from the Project as indicated in the summary table above would be less than significant.[2] Many project components were not analyzed for aesthetic impacts in the 2018 Final SEIS/EIR because they would be underground, and thus would not be visible and have no effect on viewsheds, views, or visual quality. These components included the widened throat structure, realigned Fourth and Townsend Street Station, tunnel stub box, and underground pedestrian connector. The additional trackwork along Seventh Street would be at-grade within the existing developed Caltrain right-of-way and would not be noticeable. In addition, the taxi staging area would not involve new construction or structures that could affect visual quality or aesthetics. The 2018 Final

[2] The project would be subject to Senate Bill (SB) 743 and Section 21099 of the Public Resources Code, which eliminated the analysis of aesthetics impacts for certain urban infill projects under CEQA. The land development adjacent to the vent structure sites and intercity bus facility meets the definition of a mixed-use residential, residential, or employment center infill project in a transit priority area under SB 743. Therefore, no CEQA conclusions regarding aesthetics for this development were provided in the 2018 Final SEIS/EIR.

SEIS/EIR aesthetics analysis focused on the intercity bus facility, vent structures, and DTX alignment segments, with possible other construction methods (other than cut-and-cover).

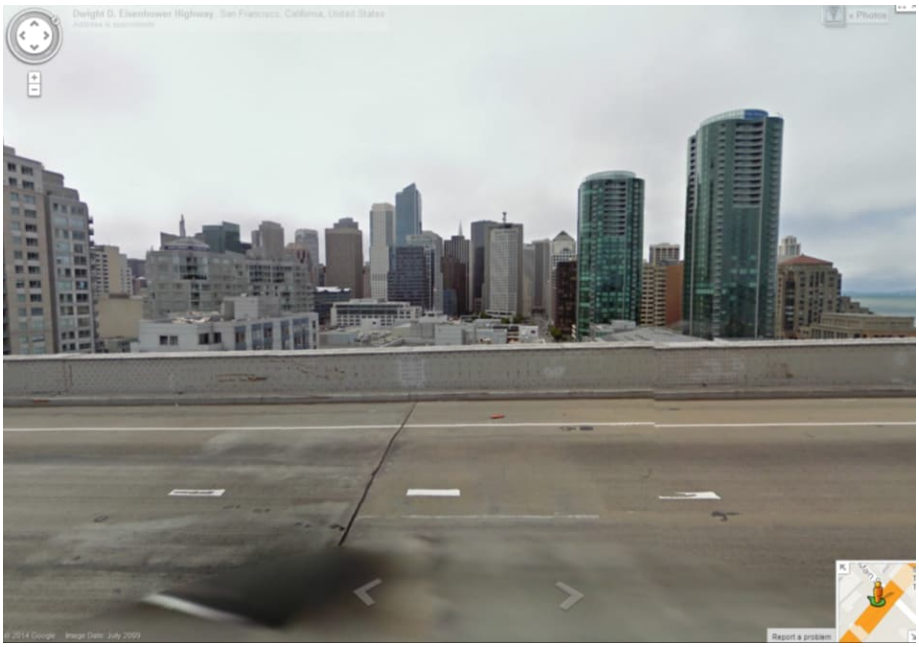
Scenic resources in the project vicinity that were identified in the 2018 Final SEIS/EIR included Interstate 80 (an eligible scenic highway), The Embarcadero, Oracle Park (a distinctive building), and the Bay. Views of the downtown skyline, views of the Bay from Downtown, and views of Downtown from the waterfront were considered to be scenic views.

The intercity bus facility site, including the vent structure at Natoma and Main Streets, as analyzed in the 2018 Final SEIS/EIR would not be visible in scenic views of Downtown from Interstate 80, or from other scenic resources such as The Embarcadero and Oracle Park, because of intervening development. The intercity bus facility as described in the 2018 Final SEIS/EIR would not be discernible in views of Downtown and would not obstruct scenic views, because it would be fully surrounded on all sides by taller buildings, and thus this component would have a less-than-significant impact on a scenic vista. The prior analysis determined that the visual effect of the intercity bus facility and its retail opportunities at ground level would be beneficial because it would be designed to be compatible with the previously approved Transit Center and would be developed in accordance with the Transbay Program and Transit Center District Plan, which strives to improve the pedestrian realm by providing active uses within the ground-level interface of buildings. Therefore, the intercity bus facility would have a less-than-significant impact on sensitive viewers and on the existing visual character, quality, and scale of the site and its surroundings. Although the prior analysis found that the intercity bus facility would increase the amount of light emitted from the site, the addition of lighting would be necessary for users of the intercity bus facility. The 2018 Final SEIS/EIR discussed that the DTX Design Criteria (Chapter 17 Electrical Systems) contain measures to prevent spillover light in the direction of neighboring residential and commercial properties, which would include providing lower light levels, selecting appropriate luminaires, and shielding. Therefore, the intercity bus facility would have a less-than-significant impact related to light and glare.

The Fourth and Townsend Street Station vent structures would not be visible from Interstate 80, from the waterfront areas, or in views to the San Francisco Bay; therefore, the vent structures would not obstruct scenic views. Views of the San Francisco Bay, Oracle Park and The Embarcadero from the site of the vent structures would be blocked by intervening development. Thus, this component would have a less-than-significant impact on a scenic vista. The Fourth and Townsend Street Station vent structures would not introduce elements that are out of context with railyards or train stations, and the structures would not be located in the immediate vicinity of the surrounding residential and commercial buildings. The vent structures would not result in a noticeable change at the project site and, therefore, would have a less-than-significant impact on the visual quality, character, scenic resources, and scale of the site and its surroundings. New sources of light from the vent structures would serve to light the vent structure exit for safety and security purposes. Given that the site and surrounding area are developed, the vent structures would not introduce external lighting that would be out of the ordinary for densely populated urban environments. Therefore, the vent structures would have a less-than-significant impact related to light and glare.

Revised Project Analysis. The scenic resources described in the 2018 Final SEIS/EIR continue to be prominent features of the visual landscape. Since completion of the 2018

Final SEIS/EIR, increasingly intense development, marked by high-rise mixed-use structures, has occurred in the project area, as seen in the changes between the view from Interstate 80 of the south of Market/Financial District in 2014 (Figure 3-1) and roughly the same location in 2021 (Figure 3-2).



Note: Figure from the 2015 Draft SEIS/EIR

Source: Adapted by AECOM in 2014 from Google Maps

Figure 3-1. View from Interstate 80 Looking North along Main Street in 2014

Source: Google Maps, photo taken June 2021

Figure 3-2. View from Interstate 80 Looking North along Main Street in 2021

The Revised Project would include many components that were not evaluated in the 2018 Final SEIS/EIR aesthetics analysis, because they would be located underground, and thus would not be visible and would have no effect on viewsheds, views, or visual quality. For these same reasons, revisions to these project components would likewise result in a less-than-significant impact. These components would include the Fourth and Townsend Street Station, tunnel stub box, underground pedestrian connector, train box extension, and three-track reduction. The reconfiguration of at-grade trackwork under the Revised Project would continue to be at-grade, within the existing developed Caltrain right-of-way, and therefore, as described in the 2018 Final SEIS/EIR, would not be noticeable. The taxi staging area at the intercity bus facility would be removed and therefore would not affect visual quality or aesthetics. Relocation of the Fourth and Townsend Street Station vent structures by four feet further south into the Caltrain railyard would not change impacts discussed in the 2018 Final SEIS/EIR for these vent structures.

The element of the Revised Project that would have the potential to affect viewsheds, views, and visual quality is the relocation of the Natoma and Main Street vent structure and emergency exit and addition of the entrance/exit pavilion. The entrance/exit pavilion and relocated vent structure on TJPA property would be surrounded by the Transit Center, the 201 Mission high-rise office building, and the recently constructed high-rise buildings at 202 and 250 Howard Street and at 175 and 195 Beale Street to the immediate south. Thus the entrance/exit pavilion and relocated vent structure would not be visible from scenic views and would not obstruct scenic views because of the surrounding taller buildings. The entrance/exit pavilion would be designed to be compatible with the Transit Center, would be constructed in accordance with the Transbay Program and the Transit Center District Plan, and would contribute to street-level activity and pedestrian movement. The pavilion and relocated vent structure also would require lighting, but this would not adversely affect light and glare, because the DTX Design Criteria (Chapter 17 Electrical Systems) would continue to apply to the selection and location of lighting at these facilities. Furthermore, the new high-rise buildings to the south and the Transit Center to the west have increased the general ambient lighting in the neighborhood and are reflective of the area's urbanized setting. Therefore, potential visual impacts resulting from the Revised Project would be less than significant.

Conclusion

The existing conditions, as updated, would be different than documented in the 2018 Final SEIS/EIR because of the addition of new high-density, taller buildings along the DTX corridor; however, Revised Project implementation would not result in new or substantially more severe significant impacts compared to the significance conclusions on aesthetics in the 2018 Final SEIS/EIR. No new mitigation measures to address visual impacts have been identified that would need to be implemented because of changed conditions. No new information of substantial importance has been identified, and none of the conditions described in Sections 15162 and 15163 of the CEQA Guidelines calling for preparation of a subsequent or supplement to an EIR has been met.

3.2 Agriculture and Forestry Resources

Would the project:	Significance Determination from the 2018 Final SEIS/EIR	Significance Determination for the Revised Project	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new significant impacts or changes in the severity of previously identified significant impacts?	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new or changed circumstances involving new significant impacts or substantially more severe impacts than those analyzed in the 2018 Final SEIS/EIR?	Has new information become available, resulting in previously undisclosed significant impacts, a change in the severity of significant impacts, or a change in the feasibility of mitigation measures?
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	NI	NI	No	No	No
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	NI	NI	No	No	No
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220[g]), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104[g])?	NI	NI	No	No	No
d) Result in the loss of forest land or conversion of forest land to non-forest use?	NI	NI	No	No	No
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	NI	NI	No	No	No

Discussion

Prior Analysis. The 2004 FEIS/EIR and the 2018 Final SEIS/EIR did not address agriculture and forestry resources specifically, because no land in the city has been designated by the California Department of Conservation's Farmland Mapping and Monitoring Program as active or important agricultural land. The project site does not contain agricultural uses and is not zoned for such uses. Similarly, no land in San Francisco is designated as forest land or timberland by the California Public Resources Code. The project site does not contain forest land or timberland and is not zoned for such uses. Therefore, the 2018 Final SEIS/EIR concluded that no impact would occur on these resources.

Revised Project Analysis. The DTX corridor has become even more urbanized due to additional development that has occurred since the 2018 Final SEIS/EIR was completed, in accordance with the city's area plans. No agricultural or forestry resources exist, and like the project, the Revised Project would not require the conversion of any land designated by the state farmland mapping and monitoring program as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to nonagricultural use or any forest land or timberland to nonforest use. In addition, the Revised Project would not conflict with any existing agricultural or timberland zoning or Williamson Act contracts because none applies to the project site, nor would the Revised Project involve any changes to the environment that could result in the conversion of farmland.

Conclusion

Revised Project implementation would not alter the findings of the 2018 Final SEIS/EIR, because no agricultural or forest land would be affected by the Revised Project. No new information of substantial importance has been identified, and none of the conditions described in Sections 15162 and 15163 of the CEQA Guidelines calling for preparation of a subsequent or supplement to an EIR has been met.

3.3 Air Quality

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:	Significance Determination from the 2018 Final SEIS/EIR	Significance Determination for the Revised Project	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new significant impacts or changes in the severity of previously identified significant impacts?	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new or changed circumstances involving new significant impacts or substantially more severe impacts than those analyzed in the 2018 Final SEIS/EIR?	Has new information become available, resulting in previously undisclosed significant impacts, a change in the severity of significant impacts, or a change in the feasibility of mitigation measures?
a) Conflict with or obstruct implementation of the applicable air quality plan?	LTS	LTS	No	No	No
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	LTS-M	N/A	No	No	No
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	LTS-M	LTS-M	No	No	No
d) Expose sensitive receptors to substantial pollutant concentrations?	LTS-M	LTS-M	No	No	No
e) Create objectionable odors affecting a substantial number of people?	LTS	LTS	No	No	No

Discussion

Prior Analysis. As discussed in the 2018 Final SEIS/EIR (Section 2.16), the project would not conflict with the applicable regional air plan, would not result in a new localized carbon monoxide (CO) violation, and would have a less-than-significant impact with respect to a CO hotspot.

During its operational phase (post-construction), the project would result in a reduction of long-term mobile source emissions, and thus would not result in regional emissions that would exceed the significance thresholds established by the Bay Area Air Quality Management District (BAAQMD) to assess the potential for regional air quality violations. Because the project would contribute to beneficial effects in terms of reducing regional air emissions, was included in the applicable Regional Transportation Plan, and would not

generate pollutant concentrations that would exceed the National Ambient Air Quality Standards based on project-level Transportation Conformity Guidance and project-related traffic information, the 2018 Final SEIS/EIR determined that the project would have less-than-significant regional air quality impacts.

With respect to localized air quality impacts from operations, 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). This conclusion was reported in the Metropolitan Transportation Commission Fund Management System database, which also states that the project conformity analysis was completed (MTC 2015). The project components would not alter the definition of Phase 2 to make it a POAQC; therefore, a hotspot analysis was not required.

Although a hotspot analysis was not required, the 2018 Final SEIS/EIR reported that the project components could expose new and existing sensitive land uses to increased pollutant concentrations. Specifically, the intercity bus facility and two of the vent structures were to be co-located with land development that could include residential development. Air emissions (fine inhalable particulate matter [PM] with diameter of 2.5 micrometers and smaller [$PM_{2.5}$], diesel PM, and other toxic air contaminants) from these project components and associated emergency generators could affect these adjacent residential receptors. Mitigation measures were adopted and incorporated into the Transbay Program to reduce these potentially significant air quality impacts: 2018 Mitigation Measures New-MM-AQ-3.1 and New-MM-AQ-3.2 would address diesel generators and require and implement Ventilation Plans for Proposed Residential Land Development on the intercity bus facility and vent structure sites.

During project construction, project-related demolition, excavation, grading, and other construction activities would cause wind-blown dust that could contribute to the release of PM into the local atmosphere. Compliance with the Construction Dust Control Ordinance and procedures set forth by the San Francisco Building Code were identified and provided the rationale for determining that the impact would be less than significant.

Other construction activities, including use of heavy-duty equipment engines, trucks, and worker commute vehicles, also were identified as sources of air emissions. Unmitigated, these emissions were predicted to exceed the BAAQMD significance thresholds for nitrogen oxide (NOx), but would be below thresholds for reactive organic gases and PM. Implementation of 2004 Mitigation Measures AC 1 through AC 15, in addition to 2018 Mitigation Measure New-MM-C-AQ-5.1 and the increasing availability and use of Tier 4 equipment for nonroad diesel engines, would serve to minimize construction air quality impacts, including toxic air contaminant (TAC) concentrations, to a less-than-significant level.

As explained in the 2018 Final SEIS/EIR, the project would not include any land use or activity that typically generates adverse odors, and thus would not result in a significant impact related to odors.

Revised Project Analysis. After completion of the 2018 Final SEIS/EIR, the CEQA Appendix G checklist was updated. In the 2019 CEQA Guidelines update, the CEQA Guidelines Appendix G environmental checklist Item Section III.b) violation of air quality

standards was removed. Accordingly, the table at the start of this section indicates N/A for item b for the Revised Project.

DTX Phase 2 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), for which the Metropolitan Transportation Commission has prepared findings that the plan and Revised Project would conform with the latest U.S. Environmental Protection Agency transportation conformity regulations and the Bay Area Conformity State Implementation Plan, which is also known as the Bay Area Air Quality Conformity Protocol, as adopted in April 2020. This conformity finding demonstrates that the total emissions projected for the plan are within the emission limits established by the State Implementation Plan to attain National Ambient Air Quality Standards (MTC and ABAG 2021a). Therefore, the Revised Project, like the project, would not conflict with the applicable regional and State air quality management plans.

In terms of localized impacts during operations, the Revised Project would not result in a new CO violation and would have a less-than-significant impact with respect to a CO hotspot for the same reasons as discussed in the 2018 Final SEIS/EIR. The only new component of the Revised Project that could affect surface vehicular circulation and result in congestion that could result in elevated CO concentrations would be the new fourth track at the existing Mission Bay Drive at-grade crossing as part of the revised trackwork south of the Caltrain railyard. However, the intersection level of service (LOS) during the AM and PM peak hours would not change as a result of use of the fourth track at the Mission Bay Drive at-grade crossing, and there would only be an increased delay of one second in the AM peak hour (Parsons 2022a). As previously reported, the peak-hour conditions would be the most congested period for traffic movements and most conducive to contributing to CO hotspots because of the increased number of cars idling at intersections. However, Caltrain has committed to not using the fourth track during the AM and PM peak hours. Therefore, the fourth track at the Mission Bay Drive at-grade crossing would not increase peak-hour delays or CO concentrations over baseline conditions.

With the deferral of the intercity bus facility and removal of potential residential uses and associated sensitive receptors 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 significant air quality impacts 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 the vent structures, and would require implementation of previously adopted 2018 Mitigation Measures New-MM-AQ-3.1 and New-MM-AQ-3.2 to reduce impacts to a less-than-significant level. Implementation of 2018 Mitigation Measure New-MM-AQ-3.1 would apply to all diesel emergency generators, and thus would reduce emissions to new receptors throughout the project area. In addition, 2018 Mitigation Measure New-MM-AQ-3.2, which would be implemented to address new residential land development co-located with the vent structures, 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 result in less-than-significant operational air quality effects.

As concluded in the 2018 Final SEIS/EIR, the Revised Project would not include any land use or activity that typically would generate adverse odors, and thus would not result in a significant impact related to odors.

With respect to project construction air emissions, the components of the Revised Project would not substantially alter modeled air emissions from the 2018 Final SEIS/EIR. Although some components would decrease excavation activities (deferral of the underground pedestrian connector, reduced train box extension, reduced three-track segment, and tunnel stub box), other components such as the Fourth and Townsend Street Station design would slightly increase excavation and other construction activities. Overall, the Revised Project would result in a reduction of construction-related mobile and stationary source emissions, because of the reduced amount of excavation, truck haul trips, and the deferral of two of the project components.

The Revised Project also would be in compliance with the Construction Dust Control Ordinance and San Francisco Building Code requirements, thereby reducing construction dust impacts to a less-than-significant level. As concluded in the 2018 Final SEIS/EIR, the Revised Project could result in construction emissions that would exceed the significance thresholds established by the BAAQMD for 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 PM emissions), would reduce construction air quality impacts, including TAC concentrations, to a less-than-significant level.

Conclusion

The existing conditions, as updated, would not be substantially different such that Revised Project implementation would result in new or substantially more severe significant impacts compared to the significance conclusions on air quality in the 2018 Final SEIS/EIR. No new mitigation measures to address air quality impacts have been identified that would need to be implemented because of changed conditions. New plans have been adopted locally and regionally, but they do not present new information of substantial importance that would suggest a new significant impact. Therefore, none of the conditions described in Sections 15162 and 15163 of the CEQA Guidelines calling for preparation of a subsequent or supplement to an EIR has been met.

3.4 Biological Resources

Would the project:	Significance Determination from the 2018 Final SEIS/EIR	Significance Determination for the Revised Project	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new significant impacts or changes in the severity of previously identified significant impacts?	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new or changed circumstances involving new significant impacts or substantially more severe impacts than those analyzed in the 2018 Final SEIS/EIR?	Has new information become available, resulting in previously undisclosed significant impacts, a change in the severity of significant impacts, or a change in the feasibility of mitigation measures?
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or United States Fish and Wildlife Service?	LTS-M	LTS-M	No	No	No
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or United States Fish and Wildlife Service?	NI	NI	No	No	No
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	NI	NI	No	No	No
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	LTS-M	LTS-M	No	No	No

Would the project:	Significance Determination from the 2018 Final SEIS/EIR	Significance Determination for the Revised Project	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new significant impacts or changes in the severity of previously identified significant impacts?	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new or changed circumstances involving new significant impacts or substantially more severe impacts than those analyzed in the 2018 Final SEIS/EIR?	Has new information become available, resulting in previously undisclosed significant impacts, a change in the severity of significant impacts, or a change in the feasibility of mitigation measures?
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	NI	NI	No	No	No
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	NI	NI	No	No	No

Discussion

Prior Analysis. As discussed in Section 3.7 from the 2015 Draft SEIS/EIR that was incorporated by reference in the 2018 Final SEIS/EIR, several components would be underground, and no biological resources were identified in their vicinity that could be affected during project operations. These components include the extended train box and realigned Fourth and Townsend Street Station. However, the prior analysis identified that construction activities could affect mature trees serving as nesting habitat during the nesting and migratory bird seasons in the project area. The 2018 Final SEIS/EIR identified such habitat in the vicinity of the realigned Fourth and Townsend Street Station, the intercity bus facility, the AC Transit bus storage facility parking, and BART/Muni underground pedestrian connector. Disruption of nesting birds is not permitted under the federal Migratory Bird Treaty Act and the California Fish and Game Code. The loss of an active nest would be considered a significant impact under CEQA if that nest is occupied by a special-status bird species. Implementation of 2018 Mitigation Measure New-MM-C-BR-1.1 would require preconstruction bird surveys and reduce the significant impact to a less-than-significant level. The project would have no impacts on listed species covered by the California Endangered Species Act or Federal Endangered Species Act (other than migratory birds) or habitat conservation plans, wetlands, riparian habitat, or sensitive natural communities. No landmark trees occur in the project area.

Revised Project Analysis. The Revised Project, like the project, would operate within an urban area on paved streets with no native habitat. Therefore, the Revised Project would have no potential to affect riparian habitats, sensitive natural communities, wetlands, or

native nurseries. According to the City of San Francisco's website for significant and landmark trees (https://sfpublicworks.org/services/significant-and-landmark-trees), no landmark trees are in the project area. As described in the 2018 Final SEIS/EIR, the extended train box and Fourth and Townsend Street Station would be underground and not affect any biological resources during operations. In addition, the reduction from three to two tracks in a portion of the mined tunnel would be entirely underground and likewise not affect any biological resources. However, as described in the 2018 Final SEIS/EIR, mature trees are in the vicinity of the deferred intercity bus facility and along Beale Street, where the pedestrian underground connector is proposed to be deferred. In addition, a few mature trees are located on the south side of Townsend Street at Fourth and Townsend Streets and north of the Mission Bay Drive existing at-grade crossing outside the Caltrain fenceline along Berry Street. Therefore, the construction impacts described in the 2018 Final SEIS/EIR related to migratory birds would not occur for the Revised Project in the vicinity of the underground pedestrian connector and intercity bus facility because these project components would be deferred. The same mitigation measure identified for the project (2018 Mitigation Measure New-MM-C-BR-1.1) would be required for the Revised Project design modifications at the Fourth and Townsend Street Station, the realigned tunnel stub box, and the at-grade trackwork reconfiguration south of the Caltrain railyard, to reduce potentially significant impacts on migratory birds to a less-than-significant level.

Because the 2018 Final SEIS/EIR was certified 4 years ago and the California Natural Diversity Database query used to identify sensitive biological species in the project area was performed in 2014, an updated query of this database was performed to identify new listed species not previously reported that could be affected by the Revised Project. The results of this database search indicated 62 new species within the San Francisco North U.S. Geological Survey 7.5-minute topographic quadrangle, used for the analysis, likely due to additional data collection and updates to the database since the last database search as well as changes in species listing status. None of these 62 species has suitable habitat in the Revised Project area (see Appendix B). No proposed or adopted Habitat Conservation Plans, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan encompasses the project area. Thus, the Revised Project, would have no impact on such conservation plans, the same conclusion reported in the 2018 Final SEIS/EIR.

Conclusion

The existing conditions, as updated, would not be substantially different such that Revised Project implementation would result in new or substantially more severe significant impacts compared to the significance conclusions on biological resources in the 2018 Final SEIS/EIR. No new mitigation measures to address biological resource impacts have been identified that would need to be implemented because of changed conditions. No new information of substantial importance has been identified, including the updated database search for special-status species, and none of the conditions described in Sections 15162 and 15163 of the CEQA Guidelines calling for preparation of a subsequent or supplement to an EIR has been met.

3.5 Cultural Resources

Would the project:	Significance Determination from the 2018 Final SEIS/EIR	Significance Determination for the Revised Project	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new significant impacts or changes in the severity of previously identified significant impacts?	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new or changed circumstances involving new significant impacts or substantially more severe impacts than those analyzed in the 2018 Final SEIS/EIR?	Has new information become available, resulting in previously undisclosed significant impacts, a change in the severity of significant impacts, or a change in the feasibility of mitigation measures?
a) Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Section 15064.5?	LTS	LTS	No	No	No
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Section 15064.5?	LTS	LTS	No	No	No
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	LTS-M	LTS-M	No	No	No
d) Disturb any human remains, including those interred outside of formal cemeteries?	LTS	LTS	No	No	No

Discussion

Prior Analysis. As discussed in the 2018 Final SEIS/EIR (Section 2.11), the project would result in less-than-significant impacts related to historical and archaeological resources, or disturbance to human remains, and less-than-significant impacts with mitigation related to paleontological resources. The 2018 Final SEIS/EIR also concluded that no unique geologic features are in the project area, and thus no impact would occur on these resources.

A Memorandum of Agreement (MOA) was signed by FTA, the State Historic Preservation Officer (SHPO), TJPA, City and County of San Francisco, Peninsula Corridor Joint Powers Board, and California Department of Transportation in June 2004. The MOA contains stipulations and specific guidance covering, but not limited to, ongoing consultation, preparation of treatment plans, and protective measures to avoid or minimize damage to historical resources. The MOA was last amended in August 2016 and can be found at https://tjpa.org/uploads/2009/12/ROD-B.pdf.

The 2018 Final SEIS/EIR explained that the project components with a potential to disturb sediments to considerable depths may pose adverse effects on unknown archaeological resources. Any potential adverse effect pursuant to Section 15064.5 of the CEQA Guidelines would be avoided and or minimized through implementation of Stipulation IV of the MOA, "Consideration of Potential Effects on and Prospective Development and Implementation of a Treatment Plan for Archaeological Resources." This MOA stipulation incorporates 2004 Mitigation Measures CH 15 through CH 20 (initiate archaeological resource effect process, prepare treatment plan or address any archaeological properties discovered during implementation, prepare a draft technical report, document consistency with NRHP and state regulations, and treatment of Native American burials and related items), which previously were identified in the 2004 FEIS/EIR, would be implemented and monitored for the project. More specifically, to implement Stipulation IV.B regarding a treatment plan for archaeological resources, the MOA signatories agreed to prepare individual Archaeological Research Design and Treatment Plans (ARDTPs) for each area of ground disturbance. The use and implementation of ARDTPs, along with Title 36 (Parks, Forests, and Public Property), Chapter VIII (Advisory Council on Historic Preservation), Part 800 Protection of Historic Properties, Subpart B (Section 106 Process), Section 800.13 (Post-Review Discoveries of the Code of Federal Regulations would continue to apply to the project. Therefore, potential impacts on documented archaeological resources, as well as those previously unknown but discovered, because of the project would be avoided and/or reduced, and no mitigation for archaeological resource impacts would be needed. Documented human remains are within or near the project footprint. The executed MOA and the established process and procedures that govern the preparation, review, and approval of the ARDTPs would avoid or minimize potential impacts on human remains.

Potential impacts on historic architectural resources would be avoided or minimized through implementation of Stipulation III of the MOA, "Mitigation of Effects on Second and Howard Streets Historic District and Protective Measures for Rincon Point/South Beach Historic Warehouse Industrial District." This MOA stipulation incorporates 2004 Mitigation Measures CH 11 through CH 13 (measures to protect contributing elements of historic properties, determine recordation necessary, and repair any project-related damage in both districts), which were previously adopted and incorporated into the Transbay Program and would be implemented and monitored as part of the project. Therefore, potential impacts would be avoided and/or reduced, and no mitigation for historic architectural resource impacts would be needed.

Fossilized remains of a mammoth were unearthed in the project area in September 2012, leading to a determination that the project area possesses a high potential to contain additional, similar fossils. Therefore, construction activities involving ground disturbance could damage or destroy previously unknown, unique paleontological resources. Implementation of 2018 Mitigation Measure New-MM-C-CR-4.1 would reduce the potentially significant impact to a less-than-significant level.

Revised Project Analysis. The Revised Project would continue to include below-ground facilities, and therefore Revised Project construction still could encounter archaeological and paleontological resources or human remains.[3] Under the Revised Project, less

[3] In the 2019 CEQA Guidelines update, the checklist item regarding the paleontological resources (item c) was moved from Cultural Resources to Geology and Soils; however, for consistency with the 2018 Final SEIS/EIR, impacts to paleontological resources are discussed under Cultural Resources.

potential would exist to encounter these resources at the underground pedestrian connector, the train box extension, and along the tunnel segment because of the deferral or reduced excavation associated with these components. However, slightly more excavation (4 to 11 feet) would occur at the Fourth and Townsend Street Station because of the modified station design, and thus a greater potential would occur to encounter subsurface cultural resources in this area.

Known Archaeological Resources. No new archaeological resources were identified during the updated records search at the Northwest Information Center (NWIC File #22-0063), conducted on July 12, 2022. There were no previously recorded archaeological resources in the area of potential effects (APE) identified for the entrance/exit pavilion at the eastern end of the Transit Center train box or for the Fourth and Townsend Street Station and the tunnel stub box near the Caltrain railyard nor along the Townsend Street right-of-way. The APE is the area within which historical resources could be directly or indirectly affected by a project.

As-Yet Undiscovered Archaeological Resources. Although no new archaeological resources were identified in the vicinity where the Revised Project would involve expanded excavation, the Revised Project has the potential to cause a direct adverse effect on as-yet-undiscovered archaeological historic properties. The three proposed project components identified above 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. These previously unknown 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.

The archaeological sensitivity of the project components where new ground disturbance is proposed as part of the Revised Project is summarized below.

- 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, the APE for this project component 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 below ground surface 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 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.
- 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 there would be a greater potential to encounter subsurface cultural resources in this area. 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.

- 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. 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.

  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 less-than-significant impacts through implementation of previously adopted Mitigation Measures CH 15 through CH 20, identified in the 2004 FEIS/EIR and memorialized in the MOA. As described above under the description of the prior analysis, these measures require that ARDTPs be prepared and implemented for each area of ground disturbance. These same mitigation measures adopted and incorporated into the Transbay Program would apply and would reduce potential archaeological and human remain effects to less than significant.

Built Environment Resources Assessed in the 2018 Final SEIS/EIR. A review of existing historic districts was conducted for this Addendum, and the historic districts that were discussed in the 2018 Final SEIS/EIR were found not to have changed. However, the two above-grade vent structures at Fourth and Townsend Streets and Fifth and Townsend Streets associated with the Fourth and Townsend Street Station design modification would be across the street from a contributing parcel in the Bluxome and Townsend Warehouse District and an adjacent parcel outside the district boundary. These vent structures were previously analyzed as part of the 2018 Final SEIS/EIR, and the SHPO concurred as part of NEPA documentation that these structures would not cause an adverse effect to the Bluxome and Townsend Warehouse Historic District because the historic district is north and northwest of the proposed vent structure sites, which would be sited on the south side of Townsend Street at the Caltrain railyard, across the street from the district. The Revised Project would shift these vents 4 feet further south into the Caltrain railyard and further away from the historic district, and the eastern vent structure would also be shifted to the west. Because of these minimal changes from the previous project, the less-than-

significant determination in the 2018 Final SEIS/EIR would still apply to the Revised Project.

In addition, the expanded construction footprint along Townsend Street for the tunnel stub box includes a portion of the NRHP-listed AWSS. Specifically, there is a north/south line along Sixth Street that would intersect the realignment of the tunnel stub box in the southern half of Townsend Street and could require abandonment, relocation, or protection of this water line. However, this would not cause a substantial adverse change in the significance of the district for the same reasons cited in the 2018 Final SEIS/EIR, where other refinements to the project 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 at Sixth and Townsend Streets, and similar to the 2018 Final SEIS/EIR, the impact would be less than significant. Furthermore, the deferral of the underground pedestrian connector on Beale Street and the reduction in the train box extension so that it would not cross Main Street would result in less impact on the historical AWSS compared to the approved project, because these project components no longer would require construction where water lines of this historical system are located.

The construction footprint for the tunnel stub box also would be adjacent to the southern border of the Bluxome and Townsend Warehouse District. Because this project component would be underground within the Townsend Street right-of-way and the Caltrain railyard with no above-ground features, it would have no direct or indirect effects on the historic district. Therefore, the tunnel stub box would have no effect on the Bluxome and Townsend Warehouse historic district.

All other project components would have no or less-than-significant impacts on historic resources along the project alignment, similar to the results reported in the 2018 Final SEIS/EIR. Table 3-1 identifies the project components, the historic resources, if any, near each project component, and why the significance determination would not differ or would be less than reported from the previous environmental analysis.

Table 3-1. Potential Impact of Project Components on Architectural Historic Resources

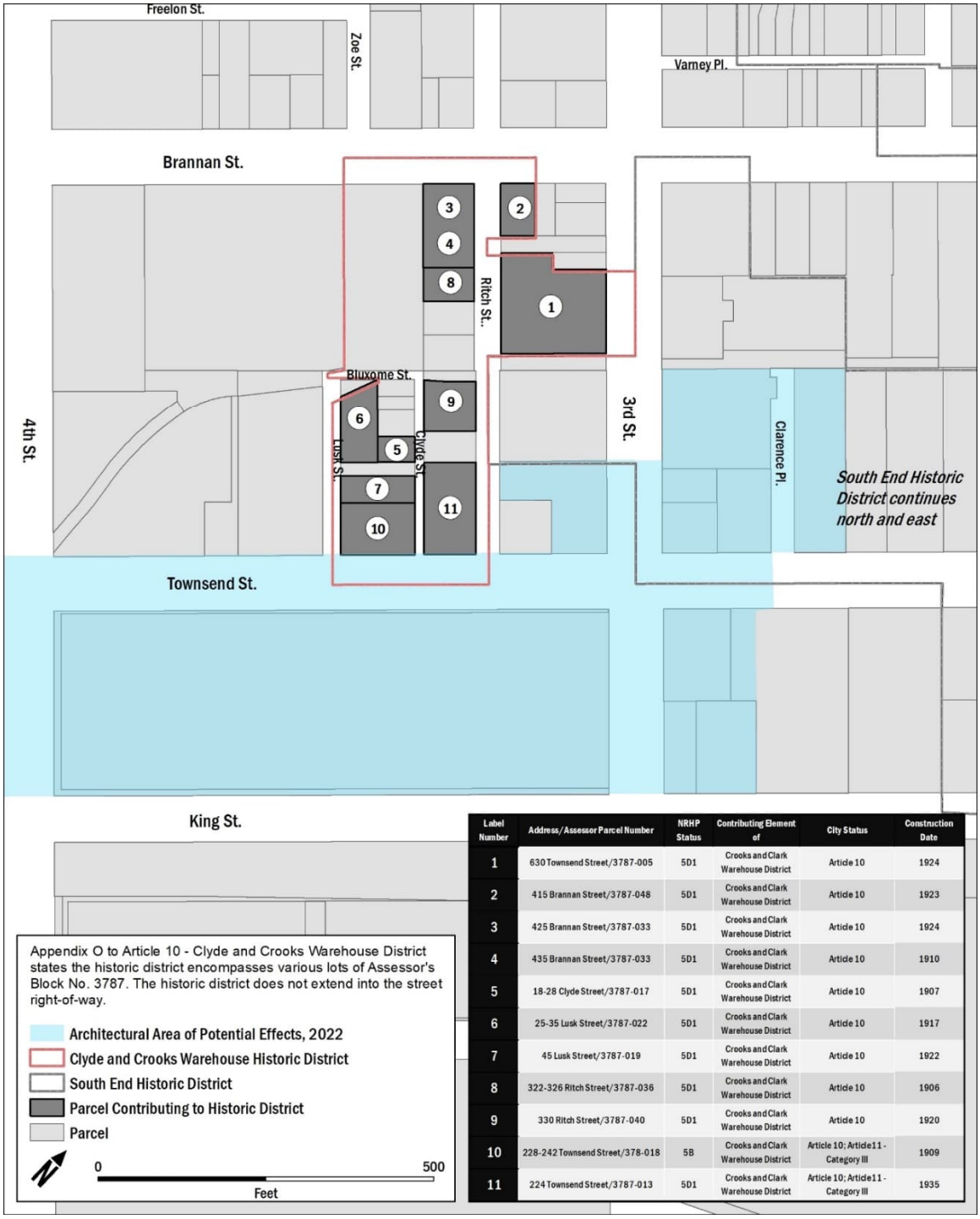
Project Component	Historic Property / Historical Resource?	Impact
Deferral of Underground Pedestrian Connector	NRHP-listed AWSS Historic District	No impact – project component to be deferred, resulting in no ground disturbance or above-ground features. Deferral of this component would avoid the AWSS water lines under Beale Street. *This impact would be less than reported in the 2018 Final SEIS/EIR.*
Reduction of the Train Box Extension / Relocation of Vent and Emergency Exit Structures	NRHP-listed AWSS Historic District	No impact – project component (train box) would be reduced and not cross Main Street where AWSS lines exist. *This impact would be less than reported in the 2018 Final SEIS/EIR.*
Deferral of the Intercity Bus Facility	None identified	No impact – no known historical resources, and project component to be deferred, resulting in no ground disturbance or above-ground features. *This impact is the same as that in the 2018 Final SEIS/EIR.*
New Entrance / Exit Pavilion at the Transit Center	None identified	No impact – no known historical resources. *This impact is the same as that in the 2018 Final SEIS/EIR.*
Removal of Taxi Staging Area at Intercity Bus Facility	None identified	No impact – no known historical resources, and project component to be eliminated, resulting in no ground disturbance or above-ground features. *This impact is the same as that in the 2018 Final SEIS/EIR.*
Reduction of the Number of Tracks in a Portion of the Tunnel	NRHP-eligible South End Historic District and Rincon Point/South Beach Historic District; NRHP-listed AWSS Historic District; NRHP-eligible 240 Second Street (Marine Firemen's Union headquarters); NRHP-eligible Clyde and Crooks Warehouse District	Less-than-significant impact – 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 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), as well as ongoing consultation for all utility effects with the San Francisco Public Utilities Commission on the AWSS would reduce impacts to less than significant. As concluded in the consultation with the SHPO for the previous environmental analysis, 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 2018 Final SEIS/EIR since the only change to this component at that time was the construction method for the mined tunnel.*

Project Component	Historic Property / Historical Resource?	Impact
Modification to the Fourth and Townsend Street Station Design	NRHP-eligible Bluxome and Townsend Warehouse District; NRHP-listed AWSS Historic District	Less-than-significant impact – project component would remain within street right-of way and a portion of the Caltrain railyard across Townsend Street from Bluxome and Townsend Warehouse District. As concluded in the previous environmental document, 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 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 significance conclusion for similar impacts on the AWSS due to the previous project and the mitigation measures that would apply and contribute to less-than-significant impact. *This significance conclusion is the same as that in the 2018 Final SEIS/EIR.*
Reconfiguration of the At-Grade Trackwork South of the Caltrain Railyard	None identified	No impact - no known historical resources, and 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. *This significance conclusion is the same as that in the 2018 Final SEIS/EIR.*

AWSS = Auxiliary Water Supply System
EIR = Environmental Impact Report
I- = Interstate -
NRHP = National Register of Historic Places
SEIS = Supplemental Environmental Impact Statement
SHPO = State Historic Preservation Officer

New Built Environment Resources. Since the 2018 Final SEIS/EIR was prepared, the Clyde and Crooks Warehouse District has been approved by the City of San Francisco adjacent to the South End Historic District at Third Street. The boundaries of the Clyde and Crooks Warehouse District are Brannan Street to the north, Third Street to the east, Townsend Street to the south, and Lusk Street to the west (Figure 3-3). The district has 12 contributing buildings, two of which are located along Townsend Street: 224 Townsend Street and 228-242 Townsend Street, a designated San Francisco Landmark (the New Pullman Hotel).

The Revised Project would not encroach into the NRHP-eligible Clyde and Crooks Warehouse District, and thus would not have any direct effects on the properties. The potential impact on this historic resource is due to the proximity of the Revised Project construction footprint and cut-and-cover construction method proposed along the district's frontage along Townsend Street. As described in the previous 2004 EIS/EIR and 2018 SEIS/EIR, 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 possible building settlement.



Label Number	Address/Assessor Parcel Number	NRHP Status	Contributing Element of	City Status	Construction Date
1	630 Townsend Street/3787-005	5D1	Crooks and Clark Warehouse District	Article 10	1924
2	415 Brannan Street/3787-048	5D1	Crooks and Clark Warehouse District	Article 10	1923
3	425 Brannan Street/3787-033	5D1	Crooks and Clark Warehouse District	Article 10	1924
4	435 Brannan Street/3787-033	5D1	Crooks and Clark Warehouse District	Article 10	1910
5	18-28 Clyde Street/3787-017	5D1	Crooks and Clark Warehouse District	Article 10	1907
6	25-35 Lusk Street/3787-022	5D1	Crooks and Clark Warehouse District	Article 10	1917
7	45 Lusk Street/3787-019	5D1	Crooks and Clark Warehouse District	Article 10	1922
8	322-326 Ritch Street/3787-036	5D1	Crooks and Clark Warehouse District	Article 10	1906
9	330 Ritch Street/3787-040	5D1	Crooks and Clark Warehouse District	Article 10	1920
10	228-242 Townsend Street/378-018	5B	Crooks and Clark Warehouse District	Article 10; Article11 - Category III	1909
11	224 Townsend Street/3787-013	5D1	Crooks and Clark Warehouse District	Article 10; Article11 - Category III	1935

Source: San Francisco Planning Department 2021

Figure 3-3. Clyde and Crooks Warehouse Historic District Boundaries

All of these construction effects were considered potentially significant in the prior environmental documents, but would be reduced to less than significant because the mitigation measures were adopted and incorporated into the Transbay Program. Specifically, the following construction mitigation measures would avoid or reduce the impacts: 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). Because these measures would apply to the Revised Project, the construction of DTX Phase 2 would not cause a substantial adverse change in the significance of the Clyde and Crooks Warehouse District.

Additionally, a review was conducted of buildings that were considered non-historical in the 2001 Historic Architectural Survey Report for the project (JRP Historic Consulting Services 2001) to determine if any of the buildings may now meet the generally-accepted historical building age threshold of 45 years old. Five of the buildings listed in the report were constructed prior to 1978 and would now be of historical age. Table 3-2 below indicates whether each building would be in the existing area of potential effects and if there has been evaluation or documentation of the building's historical significance. As shown in Table 3-2, none of the five buildings that are now of historical age would be affected by the Revised Project and would not result in a change to the conclusions presented in the 2018 Final SEIS/EIR.

Table 3-2. New Historic-Age Buildings and Potential Impacts

Address	Date Constructed	Within 2018 APE boundary	Change to 2018 Final SEIS/EIR
240 Second Street	1957	No	This building is the Marine Firemen's Union headquarters and is proposed for landmark status by the city and has been previously recommended as eligible for listing in the NRHP. The building is adjacent to the Revised Project tunnel segment where tracks would be reduced from three to two tracks, but there would be no changes to the setting above ground that could result in indirect effects to this resource. Construction of the tunnel in front of this property and use of rock dowels for ground stability during construction would result in construction period impacts (i.e., temporary disruption to local circulation, property access, and visual quality, and cause air and noise emissions, vibration, and potential building settlement). These impacts would be reduced to less than significant because of the mitigation measures adopted and incorporated into the Transbay Program, as described above under mitigation for construction impacts on the Clyde and Crooks Warehouse District.
688-690 Third Street	1963	Yes	This building was in the 2018 Final SEIS/EIR 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 relatively new mixed-use building for office and residential uses in 2003.
701 Third Street	1970	Yes	This building was in the 2018 Final SEIS/EIR APE because it was a possible site for the Third and Townsend Street vent structure. The building was demolished by others, and the site has been redeveloped with a hotel in 2019.

Address	Date Constructed	Within 2018 APE boundary	Change to 2018 Final SEIS/EIR
250 King Street	1976	Yes	This building was in the 2018 Final SEIS/EIR 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 has been redeveloped with mixed uses in 2004.
100 Mission Street	1967	No	This property has not been evaluated for NRHP, CRHR, or local eligibility since it became of historical age in 2017. However, if considered a historic property, it is not close enough to the Revised Project to be indirectly affected by construction and operations of DTX Phase 2. The closest project component was the extended train box, which is proposed to be reduced.

Conclusion

The existing conditions, as updated with identification of new historical resources along the project alignment, would not be substantially different such that Revised Project implementation would result in new or substantially more severe significant impacts compared to the significance conclusions on cultural resources in the 2018 Final SEIS/EIR. No new mitigation measures to address cultural resource impacts have been identified that would need to be implemented because of changed conditions. Therefore, none of the conditions described in Sections 15162 and 15163 of the CEQA Guidelines calling for preparation of a subsequent or supplement to an EIR has been met.

3.6 Geology and Soils

Would the project:	Significance Determination from the 2018 Final SEIS/EIR	Significance Determination for the Revised Project	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new significant impacts or changes in the severity of previously identified significant impacts?	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new or changed circumstances involving new significant impacts or substantially more severe impacts than those analyzed in the 2018 Final SEIS/EIR?	Has new information become available, resulting in previously undisclosed significant impacts, a change in the severity of significant impacts, or a change in the feasibility of mitigation measures?
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:					
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	NI	NI	No	No	No
ii. Strong seismic ground shaking?	LTS	LTS	No	No	No
iii. Seismic-related ground failure, including liquefaction?	LTS	LTS	No	No	No
iv. Landslides?	NI	NI	No	No	No
b) Result in substantial soil erosion or the loss of topsoil?	LTS	LTS	No	No	No
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	LTS-M	LTS-M	No	No	No
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	LTS	LTS	No	No	No

Would the project:	Significance Determination from the 2018 Final SEIS/EIR	Significance Determination for the Revised Project	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new significant impacts or changes in the severity of previously identified significant impacts?	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new or changed circumstances involving new significant impacts or substantially more severe impacts than those analyzed in the 2018 Final SEIS/EIR?	Has new information become available, resulting in previously undisclosed significant impacts, a change in the severity of significant impacts, or a change in the feasibility of mitigation measures?
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water?	NI	NI	No	No	No

Discussion

Prior Analysis. As discussed in the 2018 Final SEIS/EIR (Section 2.13), no known faults exist that would cross the project area, and thus fault rupture would not be a potential impact. In addition, septic tanks or other wastewater disposal systems other than the existing sanitary sewer system were not proposed, and the nearest area with landslide potential is 1.5 miles from the project area. Therefore, no impact related to known earthquake faults, landslides or septic tanks/wastewater disposal would occur.

Multiple faults are in relative proximity to the project area, and project components could experience violent groundshaking if a major earthquake occurred. Ground failure associated with liquefaction, lateral spreading, and earthquake-induced spreading are possible results of earthquake-induced settlement. For excavations deeper than 25 to 30 feet below ground surface into Young Bay Mud, some heaving and base instability may occur. In addition, expansive soils may be beneath two approved project components (the vent structure at Second and Harrison Streets that has not yet been constructed, and the AC Transit bus storage facility parking). Potential impacts from groundshaking, seismic and non-seismic ground failure, shallow bedrock, and expansive soils would be less than significant because all structural components would be designed and built in compliance with the prevailing building codes and standards, as well as with TJPA DTX Design Criteria (Chapter 10 Seismic Design). 2004 Mitigation Measures SG 1 through 5, previously identified in the 2004 FEIS/EIR, also would be implemented. Although the DTX Design Criteria and compliance with applicable codes are expected to reduce potential ground failure impacts from liquefaction and expansive soils to less than significant, 2018 Mitigation Measures New-I-GE-2.1 and New-I-GE-3.1 would augment the DTX Design Criteria to further reduce these less-than-significant impacts.

The project would require difficult excavation in the areas with shallow groundwater. If the water level is lowered outside the area of excavation by construction dewatering, consolidation of the poorly consolidated in situ soils may occur and result in settlement

around the excavation zone. Therefore, a potentially significant impact could occur, related to ground instability from changes to groundwater that was not specifically addressed in the 2004 FEIS/EIR. Implementation of 2018 Mitigation Measure New-MM-C-GE-4.1 would reduce this potentially significant impact to a less-than-significant level.

Although the project component sites are almost entirely paved or developed, exposed fill, sand, and deposits would be moderately to highly susceptible to erosion from stormwater runoff when exposed during construction-related activities, such as excavation. However, to comply with the city's Stormwater Design Guidelines, NPDES General Permit (NPDES No. CA0037681) discharge standards, and a SFPUC Construction Site Runoff Control Permit, the project would be required to comply with all water quality standards and waste discharge requirements, including preparation of an erosion and sediment control plan (ESCP) and implementing permanent erosion-control best management practices (BMPs), which would control erosion and loss of topsoil (2018 Final SEIS/EIR Section 2.12). Thus, the impact on soil loss and erosion would be reduced to a less-than-significant level.

Revised Project Analysis. Soil, geologic, and seismic conditions have not changed in the project area since completion of the 2018 Final SEIS/EIR. Accordingly, the Revised Project area still would be susceptible to impacts from groundshaking, seismic and non-seismic ground failure, shallow bedrock, and expansive soils. Compliance with the DTX Design Criteria and applicable codes would reduce impacts from these conditions, along with improvement measures that were included in the 2018 Final SEIS/EIR that also would apply to the Revised Project. In addition, compliance with water quality standards and waste discharge requirements would control erosion and loss of topsoil. Shallow groundwater conditions still exist, and therefore implementation of previously adopted 2018 Mitigation Measure New-MM-C-GE-4.1 still would be required to reduce potentially significant impacts related to ground instability from changes to groundwater. Based on further geotechnical engineering review of the Revised Project, the Revised Project would include modifications to this mitigation measure to clarify the intent of the measure and what impact it is intended to reduce (see Appendix A for mitigation measure modifications). The impact related to shallow groundwater would be less than significant with implementation of the modified mitigation measure. Like the project, the Revised Project would not require or involve septic systems or other alternative waste disposal systems, and it would not be prone to landslides or contain any known earthquake faults. Therefore, the Revised Project would result in no, less-than-significant, or less-than-significant impacts with mitigation implemented, as reported in the 2018 Final SEIS/EIR.

Conclusion

The existing conditions, as updated, would not be substantially different such that Revised Project implementation would result in new or substantially more severe significant impacts compared to the significance conclusions on geologic or soil resources in the 2018 Final SEIS/EIR. No new mitigation measures to address geologic and/or soils resource impacts have been identified that would need to be implemented because of changed conditions; however, modified 2018 Mitigation Measure New-MM-C-GE-4.1 would clarify the intent of the measure and the impact it is intended to reduce. No new information of substantial importance has been identified, and none of the conditions described in Sections 15162 and 15163 of the CEQA Guidelines calling for preparation of a subsequent or supplement to an EIR has been met.

3.7 Greenhouse Gas Emissions

Would the project:	Significance Determination from the 2018 Final SEIS/EIR	Significance Determination for the Revised Project	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new significant impacts or changes in the severity of previously identified significant impacts?	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new or changed circumstances involving new significant impacts or substantially more severe impacts than those analyzed in the 2018 Final SEIS/EIR?	Has new information become available, resulting in previously undisclosed significant impacts, a change in the severity of significant impacts, or a change in the feasibility of mitigation measures?
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	B	B	No	No	No
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	LTS	LTS	No	No	No

Discussion

Prior Analysis. As discussed in Section 3.14 from the 2015 Draft SEIS/EIR that was incorporated by reference in the 2018 Final SEIS/EIR, project construction would result in a short-term increase in greenhouse gas (GHG) emissions. However, these emissions would be offset by the long-term benefit of reduced GHG emissions because of increases in the number of public transit passengers who otherwise would be using privately owned vehicles. Overall, the project would result in a net reduction in GHG emissions, and thus beneficial impacts related to generation of GHG emissions would occur. Tables 3.14-1 and 3.14-2 in the 2018 Final SEIS/EIR show that the project would comply with San Francisco's strategies to address greenhouse gas emissions as stated in the city's Climate Action Plan (2021a) and would not generate significant GHG emissions (i.e., 25,000 metric tons per year or more). The project would provide a range of transportation choices and transit-oriented land uses in the Downtown San Francisco area, as encouraged by Plan Bay Area 2050 (MTS and ABAG 2021a) to reduce GHG emissions from cars and per-capita vehicle miles traveled. Therefore, the 2018 Final SEIS/EIR reported less-than-significant impacts related to compliance with applicable plans adopted to reduce GHG emissions.

Revised Project Analysis. For the same reasons reported in the 2018 Final SEIS/EIR, the Revised Project would not have a significant effect on construction-related and operational GHG emissions. Components of the Revised Project, including reducing the train box extension, deferring the intercity bus facility, and reducing the extent of three tracks to two tracks in a portion of the tunnel, would reduce construction activities and thus

potential GHG emissions from these activities. Although modifying the Fourth and Townsend Street Station design and reconfiguring the at-grade trackwork may slightly increase excavation and other construction activities, overall the Revised Project would result in GHG emissions reductions compared to the 2018 Final SEIS/EIR analysis because of increases in the number of public transit passengers who otherwise would be using privately owned vehicles. Modification of the Fourth and Townsend Street Station is the only component of the Revised Project that would affect passenger operations because it would allow CHSRA trains to stop at the Fourth and Townsend Street Station. This additional CHSRA stop would provide increased accessibility to San Francisco destinations and transit connections to the Central Subway and the Third Street light rail, which could increase ridership and contribute further to GHG emissions reductions from the Revised Project.

Since the 2018 Final SEIS/EIR was completed, the City of San Francisco has updated its Climate Action Plan (2021a), and the Metropolitan Transportation Commission and Association of Bay Area Governments have adopted Plan Bay Area 2050 (2021b). The Revised Project would contribute to the transportation and land use strategies in the city's Climate Action Plan regarding a fast and reliable transit system and promoting development along transit corridors. The project also is included in the Plan Bay Area 2050 transportation project list and is recognized as part of an expanded and modernized regional rail network and regional solutions to lowering GHG emissions. Therefore, the Revised Project would be consistent with applicable plans adopted to reduce GHG emissions.

Conclusion

The existing conditions, as updated, would not be substantially different such that Revised Project implementation would result in new or substantially more severe significant cumulative impacts compared to the significance conclusions on greenhouse gas emissions and climate change in the 2018 Final SEIS/EIR. No new mitigation measures to address GHG emissions impacts have been identified that would need to be implemented. Although updated plans and initiatives to lower GHG emissions have occurred, no new information of substantial importance has been identified that would indicate that a new significant impact would occur. None of the conditions described in Sections 15162 and 15163 of the CEQA Guidelines calling for preparation of a subsequent or supplement to an EIR has been met.

3.8 Hazards and Hazardous Materials

Would the project:	Significance Determination from the 2018 Final SEIS/EIR	Significance Determination for the Revised Project	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new significant impacts or changes in the severity of previously identified significant impacts?	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new or changed circumstances involving new significant impacts or substantially more severe impacts than those analyzed in the 2018 Final SEIS/EIR?	Has new information become available, resulting in previously undisclosed significant impacts, a change in the severity of significant impacts, or a change in the feasibility of mitigation measures?
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	LTS	LTS	No	No	No
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	LTS	LTS	No	No	No
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	LTS	LTS	No	No	No
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	LTS	LTS	No	No	No
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	NI	NI	No	No	No

Would the project:	Significance Determination from the 2018 Final SEIS/EIR	Significance Determination for the Revised Project	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new significant impacts or changes in the severity of previously identified significant impacts?	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new or changed circumstances involving new significant impacts or substantially more severe impacts than those analyzed in the 2018 Final SEIS/EIR?	Has new information become available, resulting in previously undisclosed significant impacts, a change in the severity of significant impacts, or a change in the feasibility of mitigation measures?
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	NI	N/A	No	No	No
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	LTS	LTS	No	No	No
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	NI	NI	No	No	No

Discussion

Prior Analysis. As discussed in Section 3.10 from the 2015 Draft SEIS/EIR that was incorporated by reference in the 2018 Final SEIS/EIR, the project would result in less-than-significant impacts related to hazards and hazardous materials. 2004 Mitigation Measures HWO 1 through HWO 7 (e.g., fueling requirements, secondary storage containment, and the Hazardous Materials Management/Business Plan) and HMC 1 through HMC 8 (e.g., contaminated soil and groundwater measures, waste hauling, soil covering, and fire protection/prevention), previously identified in the 2004 FEIS/EIR, would be implemented as part of the project. Therefore, potential construction and operational impacts from the routine transport, use, disposal, or accidental release of hazardous materials or wastes would be less than significant.

The 2018 Final SEIS/EIR also included a comprehensive review of federal, State, and local hazardous materials and hazardous facility databases, to determine whether the project would be on lands reported to be on the “Cortese List,” compiled pursuant to Government Code 65962.5. Although known contamination exists in the soils and groundwater at and near the project area, compliance with the requirements and regulations to clean the site for construction workers and public safety before the start of

project operations would ensure that no long-term operational exposure to environmentally contaminated sites after construction could pose a risk to the public or the environment. Previously adopted 2004 Mitigation Measures HMC 1 through 8, would be implemented as part of the project, and therefore potential construction impacts related to hazardous materials sites would be less than significant.

The project would involve both demolition of existing facilities and construction of new structures that could contain asbestos, lead, PCBs, mercury, or other hazardous building components. The California Division of Occupational Safety and Health and the BAAQMD regulate handling and disposal of asbestos, and contractors are required to comply with these regulations. In addition, potential construction impacts related to asbestos and lead-based paint would be less than significant because 2004 Mitigation Measures HMC 9 and HMC 10, identified in the 2004 FEIS/EIR, would be implemented as part of the project.

Project components that could alter local circulation during operations would not impede emergency response because they would not result in substantial new vehicular trips that would adversely affect intersection operations or otherwise delay emergency response vehicles. As reported in the 2018 Final SEIS/EIR, the Transbay Program is not within an area covered by an adopted airport land use plan, near a private airstrip, or within a California Department of Forestry and Fire Protection fire hazard zone.

Revised Project Analysis. After completion of the 2018 Final SEIS/EIR, the CEQA Appendix G checklist was updated. In the 2019 CEQA Guidelines update, the CEQA Guidelines Appendix G environmental checklist Item Section IX.f) regarding hazards in the vicinity of a private airstrip was removed. Accordingly, the table at the start of this section indicates N/A for item f for the Revised Project.

The significance conclusions reported in the 2018 Final SEIS/EIR remain appropriate for the Revised Project, because no significant changes have occurred in the extent or severity of previously identified hazards and hazardous materials, as confirmed by a review of current maps and databases. Specifically, a review of aerial photography using GoogleEarth and Google Maps showed no new schools in the study area. A review of the current GeoTracker database (the principal source for the Cortese List, compiled pursuant to Government Code Section 65962.5), maintained by the State Water Resources Control Board, indicated that of the 52 listed hazardous materials sites in the study area, 50 of the sites were leaking underground storage tanks that have been addressed and their cases have been closed, leaving only two sites with “open” cases. Both of these sites were identified and discussed in the 2018 analysis as known hazardous materials sites (i.e., 301 Howard Street and 50 Beale Street). In the 2019 CEQA Guidelines update, a new environmental topic, Wildfire, was added to the Appendix G environmental checklist and modified Item h in the table at the beginning of this assessment of hazards. Because the Revised Project is not within or near an area classified as a very high fire hazard severity zone, the Revised Project would have no impact on wildfire. Implementation of previously adopted 2004 Mitigation Measures HWO 1 through HWO 7 and HMC 1 through HMC 10, would be implemented as part of the Revised Project to reduce impacts from hazards and hazardous materials to a less-than-significant level.

Conclusion

The existing conditions, as updated, would not be substantially different such that Revised Project implementation would result in new or substantially more severe significant

impacts compared to the significance conclusions on hazards or hazardous materials in the 2018 Final SEIS/EIR. No new mitigation measures to address hazardous and hazardous materials impacts have been identified that would need to be implemented because of changed conditions. No new information of substantial importance has been identified, and none of the conditions described in Sections 15162 and 15163 of the CEQA Guidelines calling for preparation of a subsequent or supplement to an EIR has been met.

3.9 Hydrology and Water Quality

Would the project:	Significance Determination from the 2018 Final SEIS/EIR	Significance Determination for the Revised Project	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new significant impacts or changes in the severity of previously identified significant impacts?	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new or changed circumstances involving new significant impacts or substantially more severe impacts than those analyzed in the 2018 Final SEIS/EIR?	Has new information become available, resulting in previously undisclosed significant impacts, a change in the severity of significant impacts, or a change in the feasibility of mitigation measures?
a) Violate any water quality standards or waste discharge requirements?	LTS	LTS	No	No	No
a) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	LTS	LTS	No	No	No
b) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	LTS	LTS	No	No	No
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	LTS	LTS	No	No	No

Would the project:	Significance Determination from the 2018 Final SEIS/EIR	Significance Determination for the Revised Project	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new significant impacts or changes in the severity of previously identified significant impacts?	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new or changed circumstances involving new significant impacts or substantially more severe impacts than those analyzed in the 2018 Final SEIS/EIR?	Has new information become available, resulting in previously undisclosed significant impacts, a change in the severity of significant impacts, or a change in the feasibility of mitigation measures?
d) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	LTS	LTS	No	No	No
e) Otherwise substantially degrade water quality?	LTS	LTS	No	No	No
f) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	LTS	LTS	No	No	No
g) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	LTS-M	LTS-M	No	No	No
h) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	LTS-M	LTS-M	No	No	No
i) Inundation by seiche, tsunami, or mudflow?	NI	LTS	No	No	No

Discussion

Prior Analysis. As discussed in the 2018 Final SEIS/EIR (Section 2.12), the project would result in less-than-significant impacts related to hydrology and water quality with mitigation related to flood hazards and sea-level rise. None of the project component sites are near surface waters where water quality could be degraded by project construction activities or operations. Therefore, surface water in the project area would not be affected by discharges from project components. Potential construction impacts on water quality would be less than significant because previously adopted 2004 Mitigation Measures HMC 2 through HMC 7, would be implemented as part of the project in addition to

implementation of the ESCP and compliance with any discharge and dewatering requirements as well as with applicable federal, State, and local regulations.

Project components would be underground and covered when completed, or they would involve redevelopment of existing impervious sites. Therefore, they would have no effect on the recharge of groundwater. The impact on aquifer systems and groundwater movement from the project would be minimal because of the small percent of the volume of underground facilities compared to the overall groundwater basin size.

The project would not involve the modification of any watercourse because none exists in the project area. All project component sites that would be at the street level (the intercity bus facility, taxi staging area at the intercity bus facility, the vent structures, entrances at the Fourth and Townsend Street Station, and trackwork south of the Caltrain railyard) already are completely paved or compacted, and their future development as part of the project would not alter drainage patterns or contribute substantially to flows to the combined sewer system because the stormwater runoff under existing conditions already drains into the combined sewer system and the fully urbanized condition of these sites means that greater runoff volumes would not be expected.

Other project components would be underground (the pedestrian connector, the extended train box, the tunnel segment, the Fourth and Townsend Street Station, and the tunnel stub box) and would not affect surface drainage patterns or substantially alter stormwater flows into the combined sewer system. Underground components would be designed with drainage facilities and possibly sump pumps that may discharge to the combined sewer systems. Consequently, some contribution to flows in the combined sewer system are expected, but it is reasonable to assume that they could be accommodated without the need for new infrastructure because the stormwater volumes to be discharged would be minimal.

No levees or dams exist that could breach or rupture and inundate the project area. As discussed in the 2018 Final SEIS/EIR (Section 2.12), the project would not be within the 100-year flood hazard area (area with a 1% annual chance of flooding). However, the 2018 Final SEIS/EIR analyzed potential impacts, considering the 100-year base flood elevation (10 feet) plus 2 additional feet, in order to provide a more conservative assessment of exposure to flooding and account for possible future conditions (i.e., sea-level rise). The extended train box, vent structure, and emergency exit at the Transit Center, intercity bus facility, taxi staging area at the intercity bus facility, and the project site from approximately Fourth Street to Irwin Street would be within the floodplain, defined as the 100-year flood's base flood elevation (10 feet) plus 2 additional feet. In addition, the extended train box, vent structure, and emergency exit at the Transit Center, intercity bus facility, and taxi staging area at the intercity bus facility would be within the 500-year floodplain (area with a 0.2% annual chance [or 1 in 500 chance] of flooding) (2018 Final SEIS/EIR Section 2.12). Therefore, the project would be vulnerable to flood hazards and require protection through implementation of 2018 Mitigation Measure New-MM-WQ-4.1. This mitigation measure would modify DTX Design Criteria (Chapter 4 Environmental Requirements) to prevent the inundation of the DTX system for the 100-year and 500-year flood levels. The design also includes interception points at the tunnel portal location, in order to collect flow during the design storm event, as defined in Chapter 5, Civil Design of the DTX Design Criteria. In addition, the design would incorporate provisions to prevent flooding of the stations and inundation of the DTX alignment during a 500-year flood event.

Although the intercity bus facility, taxi staging area at the intercity bus facility, and the adjacent land development would be within the 500-year flood hazard area and within the 100-year flood's base flood elevation (10 feet) plus 2 additional feet, the housing option of the mixed-use development that was approved to be co-located with the intercity bus facility would be above the bus facility, approximately more than 40 feet above the street level. Moreover, the city's Floodplain Management Ordinance requires that new structures in a designated flood hazard area be protected against flood damage. The proposed design of the mixed used development and compliance with the Floodplain Management Ordinance requirements would result in a less-than-significant impact related to placing housing within a 100-year flood hazard area.

As described in the 2018 Final SEIS/EIR, the project area is not delineated as a potential inundation or tsunami-affected area in the San Francisco Tsunami Inundation Map (City of San Francisco 2012), and mudflows would not be a risk because the project area is on relatively level terrain, surrounded by urban development, and not vulnerable to areas susceptible to slope failure.

In terms of sea-level rise, the 2018 Final SEIS/EIR evaluated sea-level rise impacts for 2050 and 2100. The estimate used for sea-level rise by 2050 was 24 inches and by 2100 was 66 inches. Sea-level effects in 2050 would not inundate the project area. Although a portion of the Caltrain railyard is within a low-lying area, it is not identified as an area vulnerable to sea-level rise in 2050 because it is disconnected hydrologically from the Mission Creek Channel and San Francisco Bay.

The project would be significantly affected by sea-level rise and associated flooding in 2100. Portions of the extended train box, vent structures, portions of the MOW storage track, the intercity bus facility, and the taxi staging area at the intercity bus facility would be subject to 0 to 2 feet of flooding. In addition, project components, including the realigned Fourth and Townsend Street Station and related facilities (e.g., the vent structures), and the tunnel stub box, could be inundated to depths of up to 6 feet. 2018 Mitigation Measures New-MM-WQ-4.1 and New-MM-CU-WQ-9.1 would be implemented to reduce the effects of sea-level rise on the project. 2018 Mitigation Measure New-MM-CU-WQ-9.1 calls for a Sea-Level Rise Adaptation Plan to protect critical and non-critical infrastructure. Because the feasibility of implementing all resiliency measures necessary to avoid future inundation associated with sea-level rise is not known and regional sea-level rise protection measures are under discussion without firm commitment regarding strategies to implement flood protection, this impact would be significant and unavoidable.

Revised Project Analysis. The Revised Project would result in impacts on hydrology and water quality similar to those analyzed in the 2018 Final SEIS/EIR, because the Revised Project site conditions would remain the same (i.e., the project corridor is heavily developed, covered extensively with impervious surfaces [rooftops, streets, parking areas]), and does not have surface waters in or near the project component sites. In addition, the Revised Project would not alter stormwater runoff volumes or quality, because minimal changes would occur in the amount of impervious surfaces or the pollutant loading on the street surfaces conveyed to the city's combined sewer and storm drain system. Thus, the Revised Project would not affect water quality (surface or groundwater quality), decrease groundwater supplies, interfere substantially with groundwater recharge, change the infiltration rate in the project area, or alter existing drainage patterns.

The deferral and change in land use of the intercity bus facility component of the Transbay Program would eliminate proposed housing within the 500-year flood hazard area and 100-year flood's base flood elevation (10 feet) plus 2 additional feet.[4] Removal of the taxi staging area at the intercity bus facility would remove this facility from both of these flood hazard areas as well. FEMA floodplain maps were updated in 2021 and show that the Revised Project would not be within the 100-year or 500-year flood hazard areas. However, the San Francisco Public Utilities Commission (SFPUC) developed a 100-year storm flood risk map for San Francisco in 2019 that shows areas "where significant flooding from storm runoff is highly likely to occur during a 100-year storm." On the SFPUC map, the area along Townsend Street from Fourth Street to Seventh Street as well as the Caltrain railyard to just north of Mission Bay Drive would be within the 100-year storm flood risk zone.[5] Therefore, the Revised Project still would be at risk of flooding. Previously adopted 2018 Mitigation Measure New-MM-WQ-4.1 still would be required to reduce impacts to a less-than-significant level.

Sea-level rise information has changed since the 2018 Final SEIS/EIR analysis was conducted. The recent Draft EIR for the San Francisco Housing Element 2022 update (San Francisco Planning Department 2022) used the 2018 State of California Sea-Level Rise Guidance (California Ocean Protection Council and California Natural Resources Agency 2018) for sea-level rise estimates for 2050 and 2100. That Draft EIR provides projections regarding the rates of sea-level rise in San Francisco for the likely range (66 percent probability sea-level rise) and the 1-in-200 chance (0.5 percent probability sea-level rise). The estimates included the likely range and 1-in-200 chance scenarios in 2050 and 2100 under high emissions. Table 3-3 shows the estimates for 2050 and 2100 that were used in both the 2018 Final SEIS/EIR and the 2018 State of California Sea-Level Rise Guidance, used in the recent Housing Element Draft EIR (San Francisco Planning Department 2022). As shown in Table 3-3, the 2050 sea-level rise estimate used for the 2018 Final SEIS/EIR was slightly higher (0.1 feet) than the estimate from the 2018 State of California Sea-Level Rise Guidance. Therefore, the sea-level rise impacts for 2050 would continue to be similar to guidance used in recent city EIRs. However, the worst-case scenario for 2100 under the 2018 State of California Sea-Level Rise Guidance would be higher than the estimate used in the 2018 Final SEIS/EIR by 1.4 feet, as shown in Table 3-3 and Figure 3-4, below. Therefore, additional locations in the project area would be inundated by 2100, including the pedestrian connector, proposed to be deferred, and the east end of the Transit Center. The Fourth and Townsend Street area would be flooded to a greater depth, and the Caltrain railyard would be inundated to approximately Hubbell Street. Thus, implementation of previously adopted 2018 Mitigation Measure New-MM-CU-WQ-9.1 for a Sea-Level Rise Adaptation Plan and 2018 Mitigation Measure New-MM-WQ-4.1 would be necessary as part of the Revised Project. Because of the continued uncertainty regarding regional sea-level rise protection measures and the feasibility of implementing all resiliency measures necessary to avoid future inundation, this impact would remain significant and unavoidable under the Revised Project. An example of an on-going sea-level rise protection measure is the Port of San Francisco's Embarcadero Seawall Program to address existing and future seismic and flood risks along the seawall from Fisherman's Wharf south to Mission Creek. The project aims to

[4] In the 2019 CEQA Guidelines update, checklist items f, g, and h regarding the 100-year flood hazard area and flooding were deleted.

[5] The area south of the China Basin water channel from Seventh Street east is not served by the combined sewer and stormwater collection system, and flood risk was not analyzed by the SFPUC in this area.

have the first phase of seismic and flood protection upgrades, including critical life safety projects, completed by 2026.

Table 3-3. Estimates of Sea-Level Rise in San Francisco for 2050 and 2100

Year	2018 Final SEIS/EIR	2018 State of California Sea-Level Rise Guidance
2050	24 inches (2 feet)	66% probability – 1.1 feet 1-in-200 chance – 1.9 feet
2100	66 inches (5.5 feet)	66% probability (high emissions scenario) – 3.4 feet 1-in-200 chance (high emissions scenario) – 6.9 feet

In the 2019 CEQA Guidelines update, item I in the checklist above regarding flood hazard, tsunami or seiche zones was changed to focus on the release of pollutants due to project inundation. In 2021, the California Tsunami Hazard Area Maps were updated. As shown on the updated tsunami hazard area map for San Francisco, the area along Townsend (north to Bluxome Street) from Fifth to Sixth Street and around the western end of the China Basin Water Channel (from King Street, along Berry Street to Mission Bay Drive), as well as the area from Fremont to Main Streets at the Transit Center, could be exposed to hazards during a tsunami event. The Revised Project components located in the tsunami hazard area would include modification of the Fourth and Townsend Street Station design, realignment of the tunnel stub box, deferred BART/Muni underground pedestrian connector, reduced train box extension, and deferred intercity bus facility. The reconfiguration of the at-grade trackwork south of the Caltrain railyard would be outside the tsunami hazard area. Thus, components of the Revised Project and the project analyzed in the 2018 Final SEIS/EIR would be vulnerable to inundation in case of a tsunami. The probability of a tsunami is extremely low. Revisions to the CEQA checklist focus on whether there would be a risk of pollutants being released due to inundation. The Revised Project would not include the storage of large quantities of hazardous materials or other pollutants at the facilities within the tsunami inundation hazard area (the Fourth and Townsend Street Station, tunnel stub box, intercity bus facility, train box extension, pedestrian connector). These facilities would not involve heavy maintenance and repairs where greater volumes of hazardous materials would be expected; rather, common cleaning materials for station maintenance and passenger comfort would be required. Therefore, the Revised Project would not result in an increased risk of the release of pollutants due to inundation in a tsunami or seiche nor would it exacerbate the risks associated with a tsunami. Implementation of 2018 Mitigation Measure New-MM-WQ-4.1 to modify DTX Design Criteria to reduce the potential inundation from 100-year storms could also protect DTX facilities from possible inundation from a tsunami depending on the height of the tsunami wave and the extent and depth of inundation. Thus, the Revised Project would have a less-than-significant impact related to inundation by a tsunami or seiche.

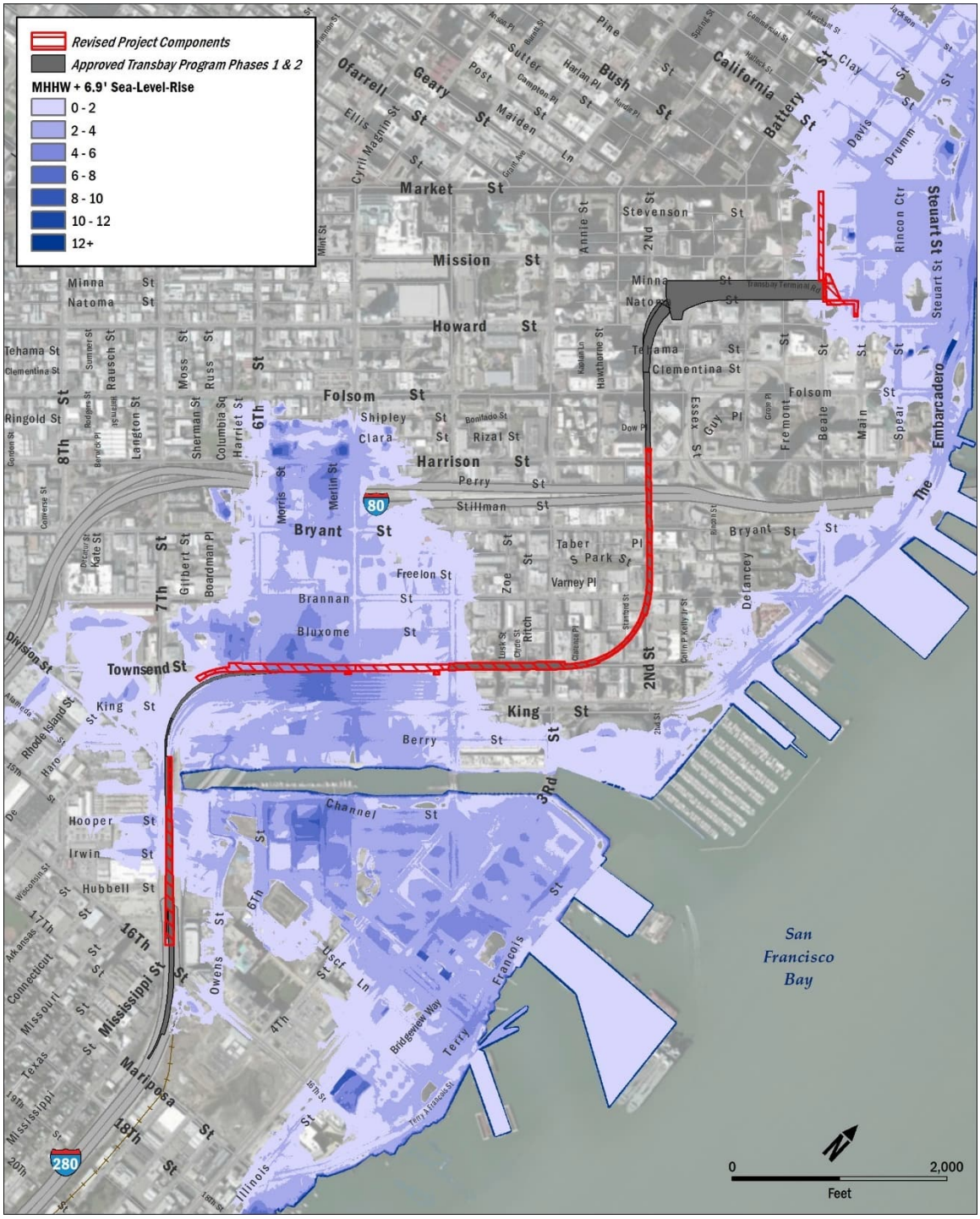


Figure 3-4. Areas Vulnerable to Sea-Level Rise in 2100

The DTX Design Criteria (Chapter 4 Environmental Requirements) have been updated in 2022, as required under 2018 Mitigation Measure New-MM-WQ-4.1, to use 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 under the likely range (66 percent probability) with high emissions along with 100-year storm surge added to the mean higher high water elevation of 6.32 feet. Therefore, the critical inundation elevation used in the revised DTX Design Criteria to protect DTX station entrances (including Fourth and Townsend Street Station and the Transit Center) and the tunnel portal is 13.32 feet, which would cover the inundation area shown in the SFPUC 100-year storm flood risk and tsunami hazard area (except for a small area at the Transit Center) and would address sea-level rise by 2100 under the likely scenario. If sea-level rise estimates continue to change, the DTX Design Criteria would be revised and implementation of 2018 Mitigation Measure New-MM-CU-WQ-9.1 for a Sea-Level Rise Adaptation Plan would address these estimate changes.

Conclusion

The existing and future conditions, as updated, would be different than documented in the 2018 Final SEIS/EIR with respect to climate change and sea-level rise; however, Revised Project implementation would not result in new or substantially more severe significant impacts compared to the significance conclusions on hydrology or water resources in the 2018 Final SEIS/EIR. No new mitigation measures to address hydrologic and/or water quality impacts have been identified that would need to be implemented because of changed conditions. New information regarding potential inundation of portions of the project corridor has been developed; however, revisions to the DTX Design Criteria would avoid potential impacts. None of the conditions described in Sections 15162 and 15163 of the CEQA Guidelines calling for preparation of a subsequent or supplement to an EIR has been met.

3.10 Land Use and Planning

Would the project:	Significance Determination from the 2018 Final SEIS/EIR	Significance Determination for the Revised Project	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new significant impacts or changes in the severity of previously identified significant impacts?	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new or changed circumstances involving new significant impacts or substantially more severe impacts than those analyzed in the 2018 Final SEIS/EIR?	Has new information become available, resulting in previously undisclosed significant impacts, a change in the severity of significant impacts, or a change in the feasibility of mitigation measures?
a) Physically divide an established community?	NI	NI	No	No	No
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	NI	NI	No	No	No
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	NI	N/A	No	No	No

Discussion

Prior Analysis. As discussed in Section 3.3 from the 2015 Draft SEIS/EIR that was incorporated by reference in the 2018 Final SEIS/EIR, no short- or long-term impacts on land use and planning would occur in the study area. Many of the project components would be underground (the pedestrian connector, the extended train box, the tunnel segment, the Fourth and Townsend Street Station, and the tunnel stub box), and therefore would not introduce barriers or impedances that would physically divide the South of Market community or the extension of the Financial District to and around the Transit Center. The street-level project components (the intercity bus facility, taxi staging area at the intercity bus facility, the vent structures, entrances at the Fourth and Townsend Street Station, and trackwork south of the Caltrain railyard) similarly would not introduce barriers that would have the potential to divide surrounding land uses. These at-grade or above-ground project components are features of existing larger facilities or of existing district/neighborhood boundaries) that already separate communities or districts (e.g., the trackwork south of the Caltrain railyard is within the Caltrain right-of-way that parallels Seventh Street and defines the border of Mission Bay to the east and Potrero

Hill/Showplace Square to the west or Townsend Street and the Caltrain railyard that separate Central SoMa area to the north and Mission Bay to the south). The Third and Townsend Street vent structure and adjacent land development, as well as the intercity bus facility would be within "infill" sites. New development would comply with the city's height and bulk regulations, indicating compatibility with nearby land uses. Therefore, none of the project components would physically divide the communities in the project area.

The impacts on land use and planning would be minimal, and none of the project components would conflict with any applicable land use plan, policy, or regulation, according to the 2018 Final SEIS/EIR. Construction and operation of the project components would be consistent with all plans and policies described in the "Regulatory Framework" portion of Section 2.8 in the 2018 Final SEIS/EIR that encourage development of the Transit Center, additional transit services, and a variety of transportation options and their interconnectivity. Therefore, no impact would occur. No habitat conservation plans or natural community conservation plans are in the study area, and therefore the project would not conflict with such plans.

Revised Project Analysis. After completion of the 2018 Final SEIS/EIR, the CEQA Appendix G checklist was updated. In the 2019 CEQA Guidelines update, the CEQA Guidelines Appendix G environmental checklist Item Section XI.c) regarding habitat conservation plan or natural community conservation plan conflicts was removed. Accordingly, the table at the start of this section indicates N/A for item c for the Revised Project.

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 facilities are 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 are 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. Revised Project components that are deferred (i.e., the underground pedestrian connector and the intercity bus facility) would have no effect in terms of altering or conflicting with a land use policy. Revised Project components that would be redesigned or reconfigured (i.e., the train box extension, the trackwork in a portion of the tunnel, the Fourth and Townsend Street Station, the tunnel stub box, and the trackwork south of the Caltrain railyard) would be within public rights-of-way or on Caltrain property and would not alter the land use plans or policies affecting adjacent areas.

The Revised Project would support Objective 1.1 of the Transit Center District Plan to "maintain downtown San Francisco as the region's premier location for transit-oriented job growth within the Bay Area;" and Objective 8.3 of the Central South of Market Area Plan to "reinforce the character of Central SoMa [South of Market] as a mid-rise district with tangible urban rooms." The project continues to be consistent with the city's Transit First Policy, which "prioritizes movement of people and goods with a focus on transit, walking,

and biking instead of private automobiles" (San Francisco County Transportation Authority 2022), as well as the area plans to promote transportation options, and complements the vision of the area plans and the city's strategies to encourage higher density corridors and areas along and around transit and transit stations.

Conclusion

The existing conditions, as updated, would be different than documented in the 2018 Final SEIS/EIR, particularly in terms of the type and intensity of new development along the project corridor; however, Revised Project implementation would not result in new or substantially more severe significant impacts compared to the significance conclusions on land use and planning in the 2018 Final SEIS/EIR. No new mitigation measures to address land use and planning impacts have been identified that would need to be implemented because of changed conditions. No new information of substantial importance has been identified, and none of the conditions described in Sections 15162 and 15163 of the CEQA Guidelines calling for preparation of a subsequent or supplement to an EIR has been met.

3.11 Mineral Resources

Would the project:	Significance Determination from the 2018 Final SEIS/EIR	Significance Determination for the Revised Project	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new significant impacts or changes in the severity of previously identified significant impacts?	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new or changed circumstances involving new significant impacts or substantially more severe impacts than those analyzed in the 2018 Final SEIS/EIR?	Has new information become available, resulting in previously undisclosed significant impacts, a change in the severity of significant impacts, or a change in the feasibility of mitigation measures?
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	NI	NI	No	No	No
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	NI	NI	No	No	No

Discussion

The 2018 Final SEIS/EIR did not specifically address mineral resources. The Revised Project would be constructed in an area where no significant mineral deposits exist, and where no known important mineral deposits or mining activities have taken place. In accordance with the California Surface Mining and Reclamation Act, the California Geological Survey has delineated areas by the presence and significance of mineral deposits (CDC 2004). The city General Plan indicates that mineral resources are not found in San Francisco to "any appreciable extent." Therefore, mineral resources are not addressed in the General Plan (City of San Francisco 2004). All land in San Francisco, including the project site, is designated Mineral Resource Zone 4 (MRZ-4) by the California Division of Mines and Geology under the Surface Mining and Reclamation Act of 1975 (California Division of Mines and Geology 1996). This designation indicates that inadequate information is available for assignment to any other mineral resource zone. Therefore, the project component sites are not in a designated area of significant mineral deposits. No resources are mapped within or near the project boundaries, and no active or proposed mines are present in the project area (California Division of Mines and Geology 1982). Thus, the Revised Project would have no impact on mineral resources.

Conclusion

Mineral resources were not analyzed in the 2004 FEIS/EIR or the 2018 Final SEIS/EIR. Revised Project implementation would not result in new significant impacts. No new information of substantial importance has been identified, and none of the conditions

described in Sections 15162 and 15163 of the CEQA Guidelines calling for preparation of a subsequent or supplement to an EIR has been met.

3.12 Noise

Would the project:	Significance Determination from the 2018 Final SEIS/EIR	Significance Determination for the Revised Project	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new significant impacts or changes in the severity of previously identified significant impacts?	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new or changed circumstances involving new significant impacts or substantially more severe impacts than those analyzed in the 2018 Final SEIS/EIR?	Has new information become available, resulting in previously undisclosed significant impacts, a change in the severity of significant impacts, or a change in the feasibility of mitigation measures?
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	LTS-M	LTS-M	No	No	No
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	LTS	LTS	No	No	No
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	LTS-M	LTS-M	No	No	No
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	SU	SU	No	No	No
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	NI	NI	No	No	No
f) For a project located in the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	NI	NI	No	No	No

Discussion

Prior Analysis. As discussed in the 2018 Final SEIS/EIR (Section 2.15), many of the project components would be below ground and would not generate street-level noise (the pedestrian connector, the extended train box, the tunnel segment, the Fourth and Townsend Street Station, and the tunnel stub box). However, the associated vent shafts that would extend above the ground from these components may substantially increase ambient noise levels at adjacent residential uses, and thus implementation of 2018 Mitigation Measure New-MM-NO-1.1 would be required to reduce the impacts to a less-than-significant level.

The other street-level or above-ground project components (the intercity bus facility, taxi staging area at the intercity bus facility, entrances at the Fourth and Townsend Street Station, and trackwork south of the Caltrain railyard) similarly would not contribute substantially to existing noise levels or exceed the thresholds. The at-grade trackwork south of the Caltrain railyard (for turnback and MOW operations) would be used by trains traveling at slow speeds; the tracks would not be used for mainline service. At slower speeds, noise from the trains would be lower than existing background noise levels and would not result in new operational noise impacts that would exceed ambient noise conditions. Noise at the intercity bus facility including the related taxi staging area would increase the day-night average sound level at Millennium Tower (the closest residence) by less than 1 A-weighted decibel (dBA), which would not exceed FTA impact criteria.

The 2018 Final SEIS/EIR concludes that project components, such as the vent structures and intercity bus facility, would not be substantial sources of vibration during operations. As discussed above, the tracks south of the railyard would be used by slow-moving trains, and thus their vibration level would be lower than existing levels that generally are defined by the Caltrain mainline service, and thus would not result in new vibration impacts (2018 Final SEIS/EIR Section 2.15).

The greatest potential for increased vibration from the project would be associated with the widened throat structure and extended train box. Because the 2004 FEIS/EIR analysis assumed a “frequent” number of events (70 events per day or greater) in the analysis of groundborne noise and vibration impacts, the same threshold was applied to the 2018 Final SEIS/EIR analysis with additional high-speed train movements. Because vehicle speeds would be similar for both conventional trains and high-speed trains in the Transit Center area, the majority of land uses along the alignment would not experience a change in the level of vibration events, and no new impacts would occur from the project (2018 Final SEIS/EIR Section 2.15). However, two historic buildings (at 589 Howard and at 171 Second Street) would be above the widened throat structure. Estimates of the vibration at these two buildings from the trains in the throat structure indicate that groundborne vibration and noise levels would be less than the damage and annoyance impact criteria established by the FTA for historical structures and office/commercial uses.

Project construction would result in temporary increases in ambient noise levels in the project area on an intermittent basis. Construction activity at project locations typically would include demolition, excavation, and foundation and structure construction. Previously adopted 2004 Mitigation Measures NoiC 1 through NoiC 6 would continue to apply and would reduce impacts from project construction. However, nighttime construction potentially would increase urban ambient noise levels by 5 dBA or more and was identified as a significant and unavoidable impact.

Vibration levels generated by construction equipment associated with the project were derived using the FTA Noise and Vibration Impact Assessment Manual (FTA 2018). Calculations were performed to determine the distances at which vibration impacts would occur according to the FTA building category criteria. Previously adopted 2004 Mitigation Measures VibC 1 through VibC 6 would apply, along with Stipulation III of the 2004 MOA with the SHPO, which includes protective measures during construction for two historic districts (includes measures VibC1 through VibC 6) to address potential impacts on historical resources. Therefore, the 2018 Final SEIS/EIR concluded that vibration impacts from project construction would be less than significant.

As explained in the 2018 Final SEIS/EIR, the Transbay Program is not in an area covered by an adopted airport land use plan or near a private airstrip; therefore, the project would have no impact related to excessive noise in such areas.

Revised Project Analysis. As part of the preliminary engineering work that was performed for the Revised Project, TJPA commissioned a new Noise and Vibration Report (Parsons 2022b), to analyze the groundborne noise and vibration for train operations, noise at vent 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 and adopted and incorporated into the Transbay Program.

Operational noise was analyzed at 28 sensitive receptors. These receptors were based on current (2022) land use data and included sensitive receptors that were not present at the time the 2018 Final SEIS/EIR was prepared. The analysis 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 FTA thresholds 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) 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, and there are effective and feasible design techniques, such as resilient supports to insulate buildings from the transmission of groundborne noise, direct fixation fasteners, and relocation of the trackwork that is the source for these impacts, that 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 effects due to operation to less than significant. 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 from train passbys on vibration-sensitive land uses would be less than significant.

The Noise and Vibration Report (Parsons 2022b) also considered noise from operation of tunnel ventilation fans. The analysis found that operation of the fans would comply with the applicable APTA 60 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 be provided by the louver on the vent shaft façades. When these additional design features are included, the ventilation fan noise would not exceed the APTA noise limit. 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. Previously adopted 2018 Mitigation Measure New-MM-NO-1.1 would apply to the Revised Project. As described in this mitigation measure, vent 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 are available and feasible. Therefore, with the implementation of 2018 Mitigation Measure New-MM-NO-1.1, noise from operation of tunnel ventilation fans would be less than significant.

The Noise and Vibration Report (Parsons 2022b) reaffirmed 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 significant and unavoidable 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 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. Previously adopted 2004 Mitigation Measures NoiC-4, NoiC-5, and

NoiC-6 would require implementation of an active community liaison program and minimizing construction noise through minimal use of vehicle backup alarms. Noise control requirements were included in the construction specifications in the 2004 FEIS/EIR, and would be relevant and apply to the Revised Project.

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 uses 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 less than significant.

Based on the new field testing and updated analysis in the Noise and Vibration Report (Parsons 2022b), impacts from construction and operational noise and vibration would be the same as those described in the 2018 Final SEIS/EIR, with continued implementation of the 2004 and 2018 Mitigation Measures, and compliance with the DTX Design Criteria.

Conclusion

The existing conditions, as updated, would be different than documented in the 2018 Final SEIS/EIR because of new noise-sensitive land uses along the corridor; however, Revised Project implementation would not result in new or substantially more severe significant impacts compared to the significance conclusions regarding noise and vibration in the 2018 Final SEIS/EIR. Although there are two buildings that could experience new groundborne noise and operational vibration effects not identified in the 2018 Final SEIS/EIR, compliance with TJPA's DTX Design Criteria would reduce these impacts to a less-than-significant level. No new mitigation measures to noise impacts have been identified that would need to be implemented because of changed conditions. No further new information of substantial importance has been identified, and none of the conditions described in Sections 15162 and 15163 of the CEQA Guidelines calling for preparation of a subsequent or supplement to an EIR has been met.

3.13 Population and Housing

Would the project:	Significance Determination from the 2018 Final SEIS/EIR	Significance Determination for the Revised Project	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new significant impacts or changes in the severity of previously identified significant impacts?	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new or changed circumstances involving new significant impacts or substantially more severe impacts than those analyzed in the 2018 Final SEIS/EIR?	Has new information become available, resulting in previously undisclosed significant impacts, a change in the severity of significant impacts, or a change in the feasibility of mitigation measures?
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	LTS	LTS	No	No	No
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	NI	NI	No	No	No
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	NI	NI	No	No	No

Discussion

Prior Analysis. As discussed in the 2018 Final SEIS/EIR (Section 2.9), no residential housing units would be displaced by the project. Therefore, the project would not displace substantial numbers of existing housing or displace substantial numbers of people, necessitating construction of replacement housing elsewhere.

Acquisition of private properties that would be required for the project would represent a loss of approximately 86,306 square feet of building space, most of which is office space. All the affected businesses would be offered relocation assistance, in accordance with State and federal laws (2004 Mitigation Measure Prop 1 from the 2004 FEIS/EIR). Based on the large amount of proposed commercial development under the Transit Center District Plan, Central SoMa Area Plan, Eastern SoMa Area Plan, and Mission Bay North Plan and the market conditions for commercial space in the project area (in 2018), most businesses were expected to be able to relocate in the project area.

The project would include new development at adjacent parcels and the intercity bus facility. However, the scale of development associated with the project—up to a maximum of 600 additional residents or 400 additional employees—would not induce substantial

population growth. In addition, development associated with the project would help fulfill the city's expected population growth in the project area as planned for in the Transit Center District Plan, Central SoMa Plan, East SoMa Area Plan, and Mission Bay North Redevelopment Project. Therefore, the project would have a less-than-significant impact on population growth.

Revised Project Analysis. Similar to the 2018 Final SEIS/EIR analysis of residential displacement, the Revised Project would likewise not include displacement of residential housing units. Therefore, the Revised Project would not displace substantial numbers of existing housing or displace substantial numbers of people, necessitating construction of replacement housing elsewhere[6].

With the reduction of size of the extended train box, the acquisition of a portion of the 201 Mission Street office building would no longer be necessary. Therefore, the Revised Project would reduce employee displacement by an estimated 41 employees. The elimination of the two above-ground floors of office or residential space at the intercity bus facility also would reduce the number of potential new jobs related to the Revised Project (an estimated 180 jobs assuming all intercity bus facility development would be office space). However, even with this reduction in new jobs, the Revised Project still would result in a net job gain of 87 to 194 jobs, assuming commercial development at sites where non-residential uses are permitted.

In the 2019 CEQA Guidelines update, the word "unplanned" was added to the CEQA Guidelines Appendix G environmental checklist item Section XIV.a) (i.e., "Induce substantial unplanned population growth…"). This change was made to clarify that it is unplanned growth that could be the basis for a potentially significant impact under CEQA, rather than new growth that is consistent with local plans and policies. The project area has experienced more growth than other areas of the city, which is reflective of the city's adopted area plans (e.g., the Transit Center District Plan, the Central SoMa Plan, and the Mission Bay North and South Area Plans) that have promoted increased densities, a mix of land uses, an emphasis on housing, and intensification of the office, retail, and technology job sectors. The project area continues to be a targeted growth area in the city and is anticipated to grow in both population and job density between 2015 and 2050.

The elimination of the above-ground floors at the intercity bus facility would reduce the anticipated new development associated with the Revised Project by up to 128 housing units (or approximately 260 residents, assuming the new development was all allocated to residential space). This would reduce the estimated population associated with the project from approximately 600 residents to 340 residents. Therefore, the Revised Project would not induce substantial population growth but would encourage growth where the city has planned for population growth, resulting in a less-than-significant impact on population growth, the same conclusion reached in the 2018 Final SEIS/EIR.

Conclusion

The existing conditions, as updated, would be different than documented in the 2018 Final SEIS/EIR with more population and housing in the project corridor, but this growth is consistent with the area plans that affect planned land uses along the corridor. Revised Project implementation would not result in new or substantially more severe significant

[6] In the 2019 CEQA Guidelines update, checklist item C regarding displacement of substantial numbers of people was removed.

impacts compared to the significance conclusions on population and housing in the 2018 Final SEIS/EIR. No new mitigation measures to address population and housing impacts have been identified that would need to be implemented because of changed conditions. No new information of substantial importance has been identified, and none of the conditions described in Sections 15162 and 15163 of the CEQA Guidelines calling for preparation of a subsequent or supplement to an EIR has been met.

3.14 Public Services

	Significance Determination from the 2018 Final SEIS/EIR	Significance Determination for the Revised Project	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new significant impacts or changes in the severity of previously identified significant impacts?	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new or changed circumstances involving new significant impacts or substantially more severe impacts than those analyzed in the 2018 Final SEIS/EIR?	Has new information become available, resulting in previously undisclosed significant impacts, a change in the severity of significant impacts, or a change in the feasibility of mitigation measures?
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:					
• Fire protection?	LTS	LTS	No	No	No
• Police protection?	LTS	LTS	No	No	No
• Schools?	LTS	LTS	No	No	No
• Parks?	LTS	LTS	No	No	No
• Other public facilities?	LTS	LTS	No	No	No

Discussion

Prior Analysis. As discussed in Section 3.15 from the 2015 Draft SEIS/EIR that was incorporated by reference in the 2018 Final SEIS/EIR, impacts on public service facilities/resources would be less than significant. According to the 2018 Final SEIS/EIR, implementation of the widened throat structure, extended train box, realigned Fourth and Townsend Street Station, vent structures, and tunnel stub box would not alter residential development or employment in the project area that could affect the need for or use of public services, and thus would not affect police patrol, fire suppression, or emergency services. The intercity bus facility and underground pedestrian connector would be expected to increase demand for police, fire, and emergency services in the project area; however, compared to the overall anticipated traffic associated with the entire approved Transbay Program, the new demand associated with these project components would be minor and addressed by implementation of 2004 Mitigation Measure Saf 3. The only project component that would result in an increased call for police, fire, or emergency

services would be the potential land development that could be co-located with the intercity bus facility and with the vent structures at Third and Townsend Streets and at Second and Harrison Streets. Implementation of 2004 Mitigation Measures Saf 1, 2, and 3 (e.g., risk analysis, life safety plan, and adequate life safety measures and emergency access) would reduce public services impacts from adjacent land development to a less-than-significant level.

No encroachment would occur on public parklands, and no impacts are anticipated on the functionality of the parkland in the project area. The project would not result in a substantial increase in demand for school facilities because the increase in the population of school-age children in new residential units under the project would be relatively small (up to 292 new dwelling units or an additional 600 residents). Implementation of DTX Design Criteria and 2004 Mitigation Measures would result in project construction having a less-than-significant impact on emergency services and community facilities.

Revised Project Analysis. The same conclusions reached for the approved project would apply to the Revised Project, although the public services demand would be reduced compared to that anticipated in the 2018 Final SEIS/EIR because of the deferral of the intercity bus facility. The reduced train box extension, Fourth and Townsend Street Station design modification, realignment of the tunnel stub box, deferring the underground pedestrian connector, elimination of the taxi staging area at the intercity bus facility, and reducing the extent of three tracks to two tracks would not alter residential development or employment in the project area, and thus would not affect police patrol, fire suppression, or emergency services. The public services demand associated with the intercity bus facility would be eliminated compared to the 2018 Final SEIS/EIR due to the deferral of this facility.

Minor delays for emergency services may occur when the Mission Bay Drive crossing gate is down, but they would not differ substantially from typical delays that currently occur at this crossing location (estimated 1 second delay in the AM peak hour, no change in the PM peak hour [Parsons 2022a]). In addition, police, fire, and emergency services vehicles use multiple routes, depending on the time of day, traffic conditions, and availability of other roadways nearby that could provide alternate east-west access for emergency vehicles. Thus, reconfiguration of at-grade trackwork would not be expected to affect emergency response times. Therefore, under the Revised Project, less-than-significant impacts would occur on public services.

Conclusion

The existing conditions, as updated, would not be substantially different such that Revised Project implementation would result in new or substantially more severe significant impacts compared to the significance conclusions on public services in the 2018 Final SEIS/EIR. No new mitigation measures to address public services impacts have been identified that would need to be implemented because of changed conditions. No new information of substantial importance has been identified, and none of the conditions described in Sections 15162 and 15163 of the CEQA Guidelines calling for preparation of a subsequent or supplement to an EIR has been met.

3.15 Recreation

	Significance Determination from the 2018 Final SEIS/EIR	Significance Determination for the Revised Project	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new significant impacts or changes in the severity of previously identified significant impacts?	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new or changed circumstances involving new significant impacts or substantially more severe impacts than those analyzed in the 2018 Final SEIS/EIR?	Has new information become available, resulting in previously undisclosed significant impacts, a change in the severity of significant impacts, or a change in the feasibility of mitigation measures?
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	LTS	LTS	No	No	No
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	LTS	LTS	No	No	No

Discussion

Prior Analysis. As discussed in Section 3.15 from the 2015 Draft SEIS/EIR that was incorporated by reference in the 2018 Final SEIS/EIR, impacts on recreational facilities/resources would be less than significant. The 2018 Final SEIS/EIR found that the project would not create additional recreation facilities, other than those already planned and approved, and it would not require construction or expansion of recreation facilities that may have an adverse physical effect on the environment. The additional development, whether office and/or residential uses, associated with the project would increase the demand for local parks and recreational facilities. However, based on the scale of possible development (up to a maximum of 600 additional residents or 400 additional employees) associated with the project, the demand would not be substantial. Some use of local recreational facilities would be expected by office staff and other employees at project facilities, but the demand would not necessarily result in the accelerated deterioration of these recreational facilities. Therefore, the impacts on recreational resources would be less than significant.

Revised Project Analysis. Under the Revised Project, no project changes would occur in a park or contribute to increased demand for or use of these recreational areas. The

Revised Project would not create additional recreational facilities or require construction or expansion of recreation facilities that could have an adverse physical effect on the environment. The Revised Project would not include additional development or induce additional development not described in the 2018 Final SEIS/EIR, or result in an increase in employees related to project facilities.

There are two new recreational areas in the immediate vicinity of the Revised Project that have been constructed since the 2018 Final SEIS/EIR was completed: the Park Tower public park and urban park at the southwest corner of Howard and Main Streets and a small grassy area on the TJPA parcel across Beale Street from the Transit Center. The latter open space area is a temporary use, the result of an agreement between the TJPA and an adjacent development project, which stipulates that a portion of the development project's open space requirement could be satisfied temporarily on land owned by TJPA until such time as the TJPA required this parcel for DTX. As a result, this approximately 5,200-square-foot grassy area would be removed when the DTX Phase 2 project is constructed. Because the Revised Project would remove the potential land development that would be co-located with the intercity bus facility, it would not result in any increased demand on the parks at the southwest corner of Howard and Main Streets. Therefore, for the same reasons described above for the project, the Revised Project would not induce new development that would substantially increase the demand for recreational facilities or result in use of recreational facilities so that accelerated deterioration of these recreational facilities would occur. Thus, the Revised Project would result in less-than-significant impacts on recreation.

Conclusion

The existing conditions, as updated, would not be substantially different such that Revised Project implementation would result in new or substantially more severe significant impacts compared to the significance conclusions on recreation in the 2018 Final SEIS/EIR. No new mitigation measures to address recreational resource effects have been identified that would need to be implemented because of changed conditions. No new information of substantial importance has been identified, and none of the conditions described in Sections 15162 and 15163 of the CEQA Guidelines calling for preparation of a subsequent or supplement to an EIR has been met.

3.16 Transportation

Would the project:	Significance Determination from the 2018 Final SEIS/EIR	Significance Determination for the Revised Project	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new significant impacts or changes in the severity of previously identified significant impacts?	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new or changed circumstances involving new significant impacts or substantially more severe impacts than those analyzed in the 2018 Final SEIS/EIR?	Has new information become available, resulting in previously undisclosed significant impacts, a change in the severity of significant impacts, or a change in the feasibility of mitigation measures?
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	LTS-M	LTS-M	No	No	No
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	LTS-M	LTS-M	No	No	No
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	NI	N/A	No	No	No

Would the project:	Significance Determination from the 2018 Final SEIS/EIR	Significance Determination for the Revised Project	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new significant impacts or changes in the severity of previously identified significant impacts?	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new or changed circumstances involving new significant impacts or substantially more severe impacts than those analyzed in the 2018 Final SEIS/EIR?	Has new information become available, resulting in previously undisclosed significant impacts, a change in the severity of significant impacts, or a change in the feasibility of mitigation measures?
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	NI	NI	No	No	No
e) Result in inadequate emergency access?	LTS	LTS	No	No	No
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	LTS-M	LTS-M	No	No	No

Discussion

Prior Analysis. The Transbay Program is not part of an area covered by an adopted airport land use plan, and this issue was not discussed in the 2004 FEIS/EIR. The environmental setting with respect to air traffic patterns has not changed since the 2004 FEIS/EIR; therefore, this issue was not discussed further in the 2018 Final SEIS/EIR. Furthermore, when the CEQA Guidelines Appendix G was revised in December 2018, this checklist item was deleted. Accordingly, the table at the start of this section indicates N/A for item c for the Revised Project. Due to the large number of topics covered in the transportation analysis, the following discussion of the prior analysis is subdivided into topics.

Level of Service and Circulation and Access. As discussed in the 2018 Final SEIS/EIR (Section 2.7), many project components do not involve new travel demand or trip generation, or substantially change how the surrounding transportation facilities would function. The three components of the DTX analyzed in the 2018 Final SEIS/EIR that had impacts on circulation and access were the intercity bus facility, taxi staging areas, and turnback track.

- The net increase in traffic activity from the intercity bus facility during the peak hours would be less than 10 vehicles per hour. This small magnitude of change to the

existing traffic volumes on the local roadway network during the peak hours would not be expected to result in a potentially significant impact.

- The minor redistribution of taxis and passenger vehicles due to the taxi staging areas would represent a negligible change to traffic operations in the adjacent area and would be expected to have a minimal effect on intersection operations and traffic safety.
- The overall change in gate downtime due to Caltrain use of the turnback track at the at-grade crossing of 16th Street would be about 28 minutes over the course of the non-peak commute periods of the day. The project also would widen the at-grade crossing. However, the turnback track would not disturb traffic operations during the AM/PM peak hours, which is the critical period upon which intersection effects are based. In addition, all physical changes to the crossing would be designed according to relevant design guidelines and standards of the California Public Utilities Commission and the city to ensure safety for all roadway users, and the traffic controls and warning devices at the crossing would be expected to remain similar to, or improve from, existing conditions. As a result, the turnback track would have a less-than-significant impact on circulation and access. To further reduce these less-than-significant impacts, 2018 environmental commitment New-I-TR-1.1 would require development of a traffic improvement plan and adaptive management plan for the two at-grade intersections along the turnback (Seventh Street/Mission Bay Drive and 16th Street/Mississippi Street/Seventh Street). Additionally, 2018 Mitigation Measure New-MM-TR-1.1 would require a traffic/train operation analysis be conducted by TJPA in coordination with Caltrain in the event that Caltrain changes its commitment in the future and uses the turnback track during the AM/PM peak hours.

Transit Demand and Operations. As described above, most project components would not affect travel demand or transit operation. The land development that would be co-located and developed in conjunction with DTX facilities, such as the vent structures and the intercity bus facility, could potentially increase transit ridership. However, transit service in and around the project area has capacity to accommodate additional riders, according to the city's Transit Data for Transportation Impact Studies memorandum that was current information when the 2018 Final SEIS/EIR was prepared. Use of the turnback track would interfere with service on the 22 Fillmore bus route. The delay of 70 seconds per crossing of 16th Street would not be a substantial delay to this bus route, which would be comparable to typical automobile delay during one signal cycle at a signalized intersection with high volumes and multiple turning movements.

Pedestrians and Bicyclists. As discussed in the 2018 Final SEIS/EIR (Section 2.7), several project components would not generate pedestrian activity, alter pedestrian movements, generate or increase bicycle use and, thus, would not be expected to affect pedestrian or bicycle circulation or safety (i.e., the widened throat structure, extended train box, the tunnel stub box, taxi staging area, AC Transit bus storage facility parking, and BART/Muni underground pedestrian connector). However, development of the vent structure at the east end of the realigned Fourth and Townsend Street Station has been conceptually sited where a pedestrian access point into the Caltrain Fourth and King Station currently exists and would require removing existing bicycle parking at the Fourth and King Station. Caltrain and TJPA have coordinated on the development of the station plans, and TJPA has committed $25 million to address construction-related impacts of the Fourth and Townsend Station on existing Caltrain support facilities.

The addition of the turnback track would widen the 16th Street crossing of the Caltrain right-of-way by up to 50 feet, resulting in a crossing time increase of 15 seconds for pedestrians and 10 seconds for bicyclists. The additional distance and time required to traverse the "track zone" could pose safety hazards for pedestrians and bicyclists. 2018 Mitigation Measure New-MM-TR-3.1 would reduce impacts for pedestrians and bicyclists by modifying the crossing to include safety features for pedestrians and bicyclists.

Pedestrian activity associated with the intercity bus facility would be expected to consist of passengers primarily transferring to buses and other transit modes at the Transit Center. In addition to the underground pedestrian connector, which would substantially reduce pedestrian volumes at crosswalks and street corners along Beale Street, the intercity bus facility would include a direct connection to the (below-grade) lower concourse level of the Transit Center. Therefore, pedestrian activity associated with the intercity bus facility would have little effect on the streets adjacent to or in the immediate vicinity of the intercity bus facility. Adjacent development at the intercity bus facility would be less than proposed by the 2004 approved Transbay Program. As a result, the land development that would be co-located with the intercity bus facility would have lesser impacts on pedestrians. Development above the intercity bus facility would result in a minor increase in bicycle activity, but would not be expected to substantially affect bicycle operations in the project area because of the availability of on-street bicycle lanes and routes.

Pedestrian volumes and entries/exits at the Fourth and Townsend Street Station would not be different from the 2004 approved project, because the project would involve only a realignment of the station and a modification to its profile. This project component would be expected to lessen pedestrian volumes and impacts on sidewalks and street corners, compared to future conditions without DTX, because pedestrian activity, particularly associated with passengers boarding and alighting, would be reduced with more passengers desiring to continue to the Transit Center. As a result, pedestrian impacts would be less than significant.

Parking and Loading. Most project components, as described in the 2018 Final SEIS/EIR, would not involve uses or activities that generate a demand for parking or loading space. The development above the intercity bus facility would be required to provide off-street loading spaces, but may generate demand that could not be accommodated onsite. In addition, creation of the taxi staging areas could require elimination of on-street parking and loading spaces that may result in a minor increase in the demand for on-street parking and loading spaces in the immediate vicinity. Because shortfalls in parking supply compared to demand are not considered to be significant environmental impacts in San Francisco, and on-street loading spaces are generally available to serve unmet loading demand, these project components would not result in a potentially significant impact on parking or loading conditions. In addition, SB 743 amended CEQA in 2013 stating that parking impacts of development on an infill site within a transit priority area shall not be considered a significant impact on the environment.

The turnback track crossing of 16th Street could affect traffic operations at the intersection and result in queuing at the service and parking entryway for businesses along Owens Street. Queues that form at the crossing due to use of the turnback track would be temporary, and would generally be expected to dissipate within one to two signal cycles following the reopening of the crossing. Vehicles attempting to service the building or access the parking garage immediately east of the Caltrain tracks would continue to have

access, although there may be a slight increase in delay when attempting to enter or exit the curb cut along 16th Street. The increase in delay entering and leaving the curb cut due to the turnback track likewise would not be substantial enough to constitute a significant impact on local circulation and access for the buildings.

Emergency Access. The existing roadways surrounding all project components would continue to enable emergency vehicle response to all areas, and the project would not result in deterioration of intersection operations. The only project component that crosses a local city street at grade and could affect emergency responders is the turnback track that would cross 16th Street. Emergency vehicles would experience additional delay due to longer gate downtimes. The gate downtime of 70 seconds for each train crossing on the turnback track would result in an additional 28 minutes of delay at the 16th Street intersection spread throughout the non-peak periods of the day. The 70 seconds of delay would be comparable to typical automobile delay during one signal cycle at a signalized intersection with high volumes and multiple turning movements. Delays would be spread throughout the day, emergency responders typically have wayfinding equipment that enable them to follow the quickest routes, and alternate routes are available into and out of the Mission Bay area; therefore, impacts to emergency vehicle access would be less than significant.

Construction. The extended train box and the tunnel stub box were not identified in the 2004 FEIS/EIR, and their implementation would result in additional construction-period transportation disruption. Because of the extent of excavation associated with both of these project components, the number of truck trips and the duration of construction activities would be substantial compared to the other refinements and improvements. The underground Fourth and Townsend Street Station would not substantially alter the construction traffic impacts identified in the 2004 FEIS/EIR, but would result in additional street closures along Townsend Street for the realigned underground station. The additional trackwork south of the Caltrain railyard and the taxi staging area would involve minimal construction equipment, materials, and crews and for considerably shorter durations than the other project components. The disruption to the transportation system for these project components would be minor compared to the impacts identified for the Transbay Program in the 2004 FEIS/EIR.

The mitigation measures that were identified in the 2004 FEIS/EIS and adopted and incorporated into the Transbay Program would be implemented during construction of the project, including 2004 Mitigation Measures PC 2, 4, 5, 6, and 7 and GC 1, 2, 3, and 4. The DTX Design Criteria includes a section specifically devoted to the maintenance and protection of traffic (TJPA, PMPC 2009). In addition, contractors would follow Regulations for Working in San Francisco Streets (“The Blue Book”). Therefore, transportation-related construction effects of the project would be less than significant.

Revised Project Analysis. After completion of the 2018 Final SEIS/EIR, the CEQA Appendix G checklist for transportation was updated in response to Senate Bill (SB) 743, which removed automobile “level of service” (LOS) from consideration as an environmental impact and required adoption of new thresholds based on vehicle miles traveled (VMT) to determine a project’s transportation impacts. As of the December 2018 CEQA Guidelines update, the CEQA Guidelines Appendix G, environmental checklist items Section XVII.a), b) and f) were consolidated, item c) was removed, and a new item b) was added to Appendix G, Section XVII to replace the use of LOS as a significance metric and replace it with VMT. Due to the large number of topics covered in the

transportation analysis, the following discussion of the Revised Project is subdivided into topics.

Many Revised Project components would not affect travel demand, trip generation, transit demand, pedestrian activity or bicycle use. Specifically, reducing the train box extension, reducing the number of tracks from three to two in a portion of the tunnel, relocation of vent structures, and realigning the tunnel stub box would not generate trips or affect street-level circulation post construction. These components, however, would affect construction activities and, therefore, are only discussed below under the construction subheading. The Revised Project components that are addressed below, except in the discussion of construction impacts, are the deferral of the underground pedestrian connector and the intercity bus facility, and the reconfiguration of the turnback and MOW trackwork south of the Caltrain railyard.

Circulation and Access. With the deferral of the underground pedestrian connector, pedestrians would use the existing network of sidewalks and crosswalks in the vicinity of the Transit Center as they do currently to travel to/from the Transit Center and the BART/Muni Metro Embarcadero Station. The 2018 Final SEIS/EIR analyzed sidewalk and crosswalk levels of service for the 2040 Cumulative Condition without the underground pedestrian connector. This assessment considered future growth, including the development expected from implementation of the Transit Center District Plan. The analysis estimated 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, because these locations and times would be the most affected without this project component. The 2018 Final SEIS/EIR reported that 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, which were estimated to operate at LOS E.

These effects, however, would likely be less than reported in the 2018 Final SEIS/EIR, because that assessment assumed 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. Due to the availability of multiple pedestrian routes, the actual increase in pedestrian volumes along First, Fremont, Beale, and Main Streets 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.

With the deferral of the intercity bus facility, there would be no bus movements that could affect automobile, transit, pedestrian, or bicycle circulation around the Transit Center. The bus operators that were proposed to use the intercity bus facility would continue to drop-off and pick-up passengers from the bus deck level of the Transit Center with its direct, above-grade connection to I-80 and the Bay Bridge.

Removal of the taxi staging area at the intercity bus facility from the project would eliminate the need to remove some on-street parking and loading spaces to provide space for taxis. Therefore, the resulting minor redistribution of taxis and passenger vehicles along adjacent streets would not occur.

Reconfiguring the tracks south of the Caltrain railyard under the Revised Project would result in a reduction in the transportation impacts described in the 2018 Final SEIS/EIR. Specifically, the turnback track at-grade crossing of 16th Street and extension to Mariposa Street would be removed. The new trackwork to enable Caltrain trains to move between the Caltrain railyard and the mainline tracks for revenue service and to provide space for equipment storage needed for railway maintenance can be completed north of 16th Street. As a result of this modification, the significant transportation impact on pedestrian and bicycle circulation and safety would be avoided, as well as the concerns raised by public agencies and local businesses during the public review period of the 2015 Draft SEIS/EIR over traffic congestion, delays, travel time and service levels of the 22-Fillmore bus that travels along 16th Street, business access and loading, and emergency access and response times. Future transportation conditions with and without the Revised Project along Seventh/Mississippi Streets, 16th Street, and Owens Street would be the same. Therefore, the Revised Project would have no circulation or access impacts in the vicinity of 16th Street and adopted 2018 Mitigation Measure New-MM-TR-1.1 to reduce circulation and intersection impacts of the turnback track at-grade crossing at 16th Street would not be needed.

The elimination of the trackwork crossing at 16th Street and trackwork extension to Mariposa Street would be possible because a new fourth track crossing at Mission Bay Drive combined with track improvements immediately south of Mission Bay Drive would serve the turnback and maintenance-of-way needs of the Revised Project. The new fourth track would be completed entirely within the roadway and would not alter the geometric layout of the 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. According to a 2022 Parsons traffic analysis prepared for the DTX Phase 2, with future Caltrain service and the proposed reconfiguration of the tracks (i.e., widening of the at-grade crossing by 9 feet), there would be almost no difference in LOS or delays at the Mission Bay Drive and Seventh Street intersection between the No Build and the Revised Project scenarios in 2035 (Parsons 2022a). Caltrain has agreed not to use this proposed fourth track during the peak hours, so the proposed track reconfiguration would not contribute to increased delays and congestion along Mission Bay Drive during these critical travel periods. If, however, Caltrain determines that use of this fourth track may be needed during peak hours in the future, the intersection operations may worsen and result in unacceptable delays. To reduce this potential effect on local circulation, adopted 2018 Mitigation Measure New-MM-TR-1.1, which was developed for the 16th Street at-grade crossing impacts, is proposed to be revised to apply to the at-grade crossing of Mission Bay Drive. Similarly, due to the elimination of the turnback track crossing of 16th Street under the Revised Project, 2018 Improvement Measure New-I-TR-1.1 would be revised to remove the 16th Street at-grade crossing and focus solely on the Mission Bay Drive at-grade crossing.

VMT. The DTX Phase 2 project essentially is a last-mile connection that would provide substantial VMT reduction benefits. 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 HSR to connect to the Transit Center. The Revised Project would not increase physical roadway capacity in congested areas, which would support and induce additional VMT. Instead, the DTX Phase 2 project would improve multimodal connectivity in Downtown San Francisco and shift a substantial portion of future person trips onto the rail system from 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). Based on the California Air Resources Board Transit and Intercity Rail Capital Program Calculator, Caltrain would reduce automobile VMT nearly 9.9 billion and GHG emissions nearly 3.2 million metric tons of carbon dioxide equivalent over the next 50 years (the maximum project life that can be used in applying the calculator). The benefits, however, would be much greater because the expected lifetime of DTX Phase 2 is 100 years. The additional benefit that could accrue with HSR service would be a further VMT reduction of approximately 17.9 billion VMT and 5.4 million metric tons of carbon dioxide equivalent over the next 50 years (AECOM 2019).

Transit Demand and Operations. With elimination of the intercity bus facility and the adjacent land use development above, alteration of transit service around this project component and the transit demand by residents, employees, and visitors would not occur. Therefore, transit demand in this portion of the project alignment would be less than the less-than-significant impacts described in the 2018 Final SEIS/EIR.

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 and state lead agencies, the effects of HSR stopping at the Fourth and Townsend Street Station are discussed as a cumulative effect in Section 3.19, Mandatory Findings of Significance.

The trackwork reconfiguration south of the Caltrain railyard under the Revised Project would have no effect on the 22 Fillmore bus line, which operates on a dedicated transit lane along 16th Street, because the reconfigured MOW and turnback tracks would terminate north of 16th Street and thus have no effect on travel conditions or congestion along 16th Street that could affect service or travel times of this bus line.

With regard to the new fourth track within the existing at-grade crossing at Mission Bay Drive, transit impacts would be less than significant, because traffic operations at the intersections of Mission Bay Drive/Seventh Street and Mission Bay Drive/Berry Street would change minimally with and without the Revised Project, and because none of the

streets associated with the at-grade crossing (Seventh Street, Mission Bay Drive, and Berry Street) are major transit corridors.

Pedestrians and Bicyclists. Elimination of the adjacent land use development above the intercity bus facility would eliminate potential changes in pedestrian and bicycle activity by residents, employees, and visitors. Without the intercity bus facility and its direct connection to the lower concourse level of the Transit Center, an entrance/exit pavilion would be provided at the east end of the train box that would provide convenient access to and from the Transit Center. This entrance/exit pavilion would be on the TJPA parcel across Beale Street from the Transit Center and would offer the same ingress/egress to the train station below as the previous project. Its impacts on pedestrians and bicyclists would be the same as reported in the 2018 Final SEIS/EIR.

Deferral of the underground connector would increase pedestrian volumes along Beale Street and other surrounding streets compared to the 2018 project; however, as described above under "Circulation and Access," the majority of the pedestrians were projected to be neighborhood passengers, rather than passengers transferring between the Transit Center and BART/Muni Embarcadero Station. These neighborhood passengers 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. As a result, the effect on pedestrians and bicyclists of deferring this project component would be similar to or better than evaluated in the prior environmental document.

For the trackwork reconfiguration south of the Caltrain railyard, there would be no effect on pedestrian or bicycle circulation or safety at 16th Street because the proposed MOW and turnback tracks would terminate north of 16th Street. As a result, the Revised Project would not alter travel conditions, the at-grade crossing geometrics, or train movements that could potentially affect pedestrian or bicycle circulation or safety along 16th Street. At the Mission Bay Drive at-grade crossing, the railroad crossing gate would be relocated 9 feet to the east (closer to Berry Street) to accommodate the proposed fourth track. This slightly wider crossing could be traversed by a pedestrian in less than 3 seconds (based on an average walking speed of 3.5 feet/second) and in even less time by bicyclists, and be designed to applicable standards to ensure adequate safety for all roadway users, including motorists, bicyclists, and pedestrians. Therefore, the Revised Project would have no effect on pedestrian and bicycle travel and safety along 16th Street and Seventh Street and less-than-significant impacts at the Mission Bay Drive crossing. As a result, previously adopted 2018 Mitigation Measure New-MM-TR-3.1 would no longer be needed because the Revised Project would not have a significant safety impact on pedestrians and bicyclists.

Parking and Loading. Elimination of the adjacent land use development above the intercity bus facility would eliminate the need for off-street loading spaces or a potential shortfall of spaces. In addition, removal of the taxi staging area at the intercity bus facility from the project would eliminate the need to remove some on-street parking and loading spaces to provide space for taxis. Therefore, the resulting minor redistribution of taxis and passenger vehicles along adjacent streets would not occur. The trackwork reconfiguration south of the Caltrain railyard would not effect on-street parking or loading zones nor contribute to vehicular delays and traffic backups that could impact deliveries and loading and unloading of materials at local businesses in the Mission Bay area.

Emergency Access. The additional track within the existing at-grade crossing at Mission Bay Drive could potentially affect emergency access. However, the delays due to the fourth track across Mission Bay Drive would be virtually the same with and without the fourth track. Therefore, there would be no delays to emergency access through this intersection. The potential delays for emergency response vehicles at the 16th Street at-grade crossing that were analyzed in the 2018 Final SEIS/EIR would be avoided under the Revised Project, because there would be no turnback track at-grade crossing at 16th Street.

Construction. 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 of trackwork upgrades south of the Caltrain railyard for turnback and maintenance-of-way tracks. Because 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. 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 less safety risks related to truck movements, traffic detours, and closure of travel lanes and sidewalks. Although the construction impacts would be less than for the approved project, previously adopted 2004 Mitigation Measures Ped 1, 2, 3, 4, 5, and 6; PC 2, 4, 5, 6, and 7; and GC 1, 2, 3, and 4 would continue to remain applicable for the Revised Project and reduce impacts to less than significant. The DTX Design Criteria (TJPA 2022) 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.

Modification of the Fourth and Townsend Street Station design would result in increased transportation-related construction impacts due to a larger excavation area, which would require additional haul trucks. Although the station design modification would increase the amount of encroachment into the Caltrain railyard by approximately 0.29 acre along its northern boundary, this would not disrupt existing trackwork in the railyard or otherwise substantially affect Caltrain maintenance and operations activities.

Construction impacts under the Revised Project for the realigned tunnel stub box would be similar to those identified in the 2018 Final SEIS/EIR. The reduction in the amount of excavation needed for the stub box would reduce the number of haul trucks needed for transport and disposal of excavated soils, which would reduce the impacts associated with haul truck traffic. However, realignment beneath Townsend Street would result in increased construction impacts because of disruptions to circulation and access along Townsend Street, particularly for transit service as well as for bicyclists and pedestrians. Similar to the project, application of previously adopted mitigation measures to the Revised Project and compliance with the city's Blue Book standards and regulations would reduce impacts to less-than-significant levels. These changes together would not alter the previously reported less-than-significant conclusion.

Transportation-related impacts for the reconfiguration of the at-grade trackwork south of the Caltrain railyard would be less than described for the approved project in the 2018 Final SEIS/EIR. Construction impacts would be less at the Mission Bay Drive crossing

under the Revised Project than at 16th Street under the previous project, because construction of this component would not alter the geometrics or traffic controls of the adjacent intersections of Mission Bay Drive and Berry Street and Mission Bay Drive and Seventh Street. The addition of the fourth track would also require less construction and construction could be completed more quickly, compared to the previous crossing at 16th Street.

As reported in the 2004 FEIS/EIR, construction traffic impacts would be reduced to less than significant because of the adoption of 2004 Mitigation Measures Ped 1, 2, 3, 4, 5, and 6; PC 2, 4, 5, 6, and 7; and GC 1, 2, 3, and 4 and their incorporation into the Transbay Program. As such, they would be implemented as part of the Revised Project. The DTX Design Criteria also cite the SFMTA's Blue Book, which prohibits construction activities on streets of major traffic importance and would further reduce transportation impacts. Streets of major traffic importance in the vicinity of Revised Project components with additional construction impacts include Third, Fourth, Fifth, Seventh, Brannan, Townsend, and King Streets. Application of these measures and requirements would keep construction transportation impacts at less-than-significant levels as previously reported in the 2018 Final SEIS/EIR.

Conclusion

The existing conditions, as updated, would be different than described in the 2018 Final SEIS/EIR, particularly given the changes to the street system to enhance pedestrian and bicyclist safety, improve transit service and reliability, and change in traffic flows on key streets in the project area; however, Revised Project implementation would not result in new or substantially more severe significant impacts compared to the significance conclusions on transportation operations, facilities, or safety in the 2018 Final SEIS/EIR. No new mitigation measures to address transportation impacts have been identified that would need to be implemented because of changed conditions. No new information of substantial importance has been identified, and none of the conditions described in Sections 15162 and 15163 of the CEQA Guidelines calling for preparation of a subsequent or supplement to an EIR has been met.

3.17 Tribal Cultural Resources

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:	Significance Determination from the 2018 Final SEIS/EIR	Significance Determination for the Revised Project	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new significant impacts or changes in the severity of previously identified significant impacts?	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new or changed circumstances involving new significant impacts or substantially more severe impacts than those analyzed in the 2018 Final SEIS/EIR?	Has new information become available, resulting in previously undisclosed significant impacts, a change in the severity of significant impacts, or a change in the feasibility of mitigation measures?
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	LTS-M	LTS-M	No	No	No
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	LTS-M	LTS-M	No	No	No

Discussion

Prior Analysis. As part of the previous analysis, a review of the Sacred Lands File by the Native American Heritage Commission (NAHC) staff in September 2013 did not identify a positive result, indicating that no tribal sacred lands were located; however, the absence of specific site information in the Sacred Lands File does not indicate the absence of cultural resources in the project vicinity. The NAHC also replied to a request for a list of Native American groups and individuals with potential geographic or cultural interest in the project area. Letters were sent to contacts on the list, describing the project and its location, and inviting the Native American to discuss any resources in the project area and concerns. Seven of the nine tribal representatives were consulted, and two requested that a Native American monitor be present during project construction.

The 2004 FEIS/EIR identified three mitigation measures, CH 15, CH 16, and CH 20, and an MOA between FTA, SHPO, TJPA, City and County of San Francisco, Peninsula Corridor Joint Powers Board, and California Department of Transportation, described in Section 3.5 of this Addendum, above, that specify preparation of treatment plans and protocols for addressing Native American tribal burials and related items discovered during project implementation. The treatment plans must define procedures for the identification, evaluation, and treatment of archaeological properties, and proper handling and examination of historic archaeological, as well as prehistoric archaeological properties. Treatment plans must at a minimum take into account "Standard Treatment of Archaeological Sites: Data Recovery Plan" of the "Programmatic Agreement among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Office, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act" (Federal Highway Administration 2013). This programmatic agreement includes guidance and direction on consultation with Native American tribes and treatment, collection, and curation of discoveries in consultation with the tribes. Technical reports must be prepared to document the results of the treatment plan implementation and distributed to consulting Native American tribes if prehistoric, protohistoric or ethnographic period archaeological properties were located and addressed under the treatment plan.

Revised Project Analysis. AB 52 consultation[7] is not required for CEQA addenda; therefore, no new tribal consultation was undertaken for this Addendum. Although Native American tribal consultation is not required for this Addendum, the TJPA is also preparing a NEPA Re-evaluation, for which tribal consultation must be solicited. As a result, the NAHC was contacted to confirm the prior negative results of the search in their Sacred Lands File. On November 10, 2022, the NAHC again reported no results for Sacred Lands in the project vicinity. The NAHC also provided a list of eight Native American tribes with possible geographic or cultural affiliations with lands in the vicinity of the Revised Project. As part of the NEPA process, FTA and the TJPA sent letters again to invite the identified tribes to consult with the FTA on their interests and concerns, if any, with the Revised Project. [*placeholder for responses*]

The city's Draft EIR for the San Francisco Housing Element 2022 Update identified culturally important locations to local Ohlone, which were determined to be potential tribal cultural resources, including areas modeled as having high sensitivity for Native American archaeological resources and archaeological resources that were submerged by the rising bay. Based on the figure in the Draft EIR of potential tribal cultural resource locations, the Revised Project would be located in areas modeled as high sensitivity for Native American archaeological resources and areas sensitive for submerged Native American archaeological resources (closer to the bay and China Basin Water Channel) (San Francisco Planning Department 2022).

The relevant mitigation measures from the 2004 FEIS/EIR (CH 15 through CH 20) to reduce impacts to tribal cultural resources were adopted and incorporated into the Transbay Program and would apply to the Revised Project. These mitigations were also included in the MOA executed by the FTA, TJPA, City of San Francisco, Caltrans, and the

[7] See the Public Resources Code Section 21080.3.1(b) that defines a lead agency's responsibility to consult with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. This consultation must occur prior to release of a negative declaration, mitigated negative declaration, or environmental impact report for a project. This section does not apply to addenda.

Peninsula Corridor Joint Powers Board. Other requirements of the MOA include transmittal to any consulting Native American tribe of the results of any treatment plan if prehistoric, protohistoric, or ethnographic period archaeological properties were located and addressed in the treatment plan; protocols for the treatment of human remains of Native American origin; the opportunity to review and comment on any objections to the MOA stipulations; and notification of proposed amendments and MOA extension or termination. These mitigation measures and MOA provisions would reduce tribal cultural resource impacts to less than significant.

Conclusion

The city's sensitivity mapping for surface, buried, and submerged Native American sites provides important new information on the potential to encounter tribal cultural resources. However, Revised Project implementation would not result in new or substantially more severe significant impacts compared to the significance conclusions on tribal cultural resources in the 2018 Final SEIS/EIR, because of the mitigation measures that were adopted and incorporated into the Transbay Program and the MOA. No new mitigation measures have been identified that would need to be implemented because of changed conditions. None of the conditions described in Sections 15162 and 15163 of the CEQA Guidelines calling for preparation of a subsequent or supplement to an EIR has been met.

3.18 Utilities and Service Systems

Would the project:	Significance Determination from the 2018 Final SEIS/EIR	Significance Determination for the Revised Project	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new significant impacts or changes in the severity of previously identified significant impacts?	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new or changed circumstances involving new significant impacts or substantially more severe impacts than those analyzed in the 2018 Final SEIS/EIR?	Has new information become available, resulting in previously undisclosed significant impacts, a change in the severity of significant impacts, or a change in the feasibility of mitigation measures?
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	LTS	N/A	No	No	No
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	LTS	LTS	No	No	No
c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	LTS	N/A	No	No	No
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	LTS	LTS	No	No	No
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	LTS	LTS	No	No	No
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	LTS	LTS	No	No	No

Would the project:	Significance Determination from the 2018 Final SEIS/EIR	Significance Determination for the Revised Project	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new significant impacts or changes in the severity of previously identified significant impacts?	Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new or changed circumstances involving new significant impacts or substantially more severe impacts than those analyzed in the 2018 Final SEIS/EIR?	Has new information become available, resulting in previously undisclosed significant impacts, a change in the severity of significant impacts, or a change in the feasibility of mitigation measures?
g) Comply with federal, state, and local statutes and regulations related to solid waste?	NI	NI	No	No	No

Discussion

Prior Analysis. As discussed in the 2018 Final SEIS/EIR (Section 2.18), most project components would not alter water demand, generate wastewater, or increase stormwater runoff volume, because they would be rail infrastructure-related (e.g., changes to station alignment and sizes, vent/emergency exit structures, and the throat structure where trains would enter and leave the Transit Center). The intercity bus facility and the land development that could be co-located with particular transportation facilities (i.e., the intercity bus facility and vent sites at Second and Harrison Streets and at Third and Townsend Streets) would be the exceptions because they would represent new uses that would generate a demand for utilities. However, the water demand for these components would be within the demand projections of the Urban Water Management Plan (San Francisco Public Utilities Commission 2011), and thus would not exceed the city's available water supply. In addition, wastewater flows from these components would not exceed the Southeast Wastewater Treatment Plant capacity, which would serve these new uses. The plant currently is in compliance with the RWQCB's wastewater treatment requirements and would continue to be in compliance after project implementation because the additional wastewater flow would not exceed the treatment plant's capacity. In addition, the wastewater constituents from the adjacent land development would be typical of residential and commercial effluent and would not require more stringent treatment than occurs currently. Therefore, the project would not require new or expanded water entitlements, would not require construction of new wastewater treatment facilities, would not exceed the capacity of the wastewater treatment plant, and would not exceed the wastewater treatment requirements of the RWQCB. Incremental stormwater runoff from additional development would be minimal because the development would occur in areas that are already paved and impervious and would not exceed the capacity of existing systems (also see Section 2.12 in the 2018 Final SEIS/EIR). In addition, design of the on-site stormwater management controls to connect to existing infrastructure would comply with the DTX Design Criteria and the city's stormwater management ordinance and stormwater design guidelines, resulting in less-than-significant impacts related to stormwater drainage facilities.

Project components—including the widened throat structure, extended train box, vent structures, tunnel stub box, rock dowels, additional trackwork south of the Caltrain railyard, intercity bus facility, taxi staging area at the intercity bus facility, bicycle/controlled vehicle ramp, AC Transit bus storage facility parking, and BART/Muni underground pedestrian connector—would not be occupied and would not generate any solid waste. The 2018 Final SEIS/EIR concluded that the solid waste that would be generated during project construction of new uses (i.e., the intercity bus facility and residential or office development that may co-locate with particular project components) could be accommodated within the existing landfill capacity. The project would comply with all pertinent federal, State, and local requirements regarding solid waste.

Energy demand would increase because several project components would require power to operate, including the widened throat structure, extended train box, vent structures, intercity bus facility, and BART/Muni underground pedestrian connector. However, energy consumption for these components could be met by existing providers and would not require new or expanded energy supplies. Although project construction may interrupt utility service, as previously identified in the 2004 FEIS/EIR, 2004 Mitigation Measure Util 1 would be implemented, thus reducing utility interruption impacts a to less-than-significant level.

The 2004 FEIS/EIR contained a section regarding impacts on energy. This section (Section 5.18) stated that the Transbay Terminal/Caltrain Downtown Extension/Redevelopment Project would increase energy consumption for new land uses, train propulsion, and transportation facility operations. The project also would reduce the consumption of energy by other modes by diverting travel from auto and bus to commuter rail service, however, and the combined propulsion and facilities electrical energy requirements continue to be more than offset by the estimated energy savings to other modes resulting from project implementation. The 2018 Final SEIS/EIR stated that the project would not change the operations, regional VMT, or water and energy consumption that were discussed in the 2004 FEIS/EIR.

Revised Project Analysis. As of the December 2018 CEQA Guidelines update, the CEQA Guidelines Appendix G, environmental checklist items Section XIX.a), regarding the wastewater treatment requirements of the applicable RWQCB was deleted, and Section XIX, b) and c), regarding the need for new or expanded water, wastewater treatment, storm water drainage, and other utilities, were consolidated as the new Section XIX, a). Accordingly, the table at the start of this section indicates N/A for items a and c for the Revised Project. Although these no longer are part of the checklist, the Revised Project would not exceed wastewater treatment requirements of the RWQCB for the reasons presented in the 2018 Final SEIS/EIR.

In June 2021, the City and County of San Francisco adopted its 2020 Urban Water Management Plan, including the 2020 Water Shortage Contingency Plan. The Revised Project components would not alter water demand, increase stormwater runoff volume, or generate additional solid waste or wastewater compared to the project. The deferred intercity bus facility no longer would include co-located residential or office development, and thus would reduce water, wastewater, and solid waste use/generation compared to the project. Other Revised Project components would reduce facilities or modify facilities in ways that would not increase utility demand, including the reduction of the train box extension, deferral of the intercity bus facility, reduction of the extent of the three tracks to two tracks in a portion of the tunnel, and realignment of the tunnel stub box. Although utility

disruptions and temporary service interruptions during project construction still could occur and could also include Townsend Street west of Fifth Street because of the realignment of the tunnel stub box, 2004 Mitigation Measure Util 1 would be implemented, and would reduce utility interruption impacts to a less-than-significant level. Therefore, the Revised Project would result in less-than-significant utility impacts.

The 2019 CEQA Guidelines update resulted in the addition of a new environmental topic to the CEQA Guidelines Appendix G environmental checklist, Energy (Section VI.a) and b)). The new checklist questions ask whether the project would result in a significant impact because of wasteful, inefficient, or unnecessary consumption of energy and if the project would conflict with a State or local plan for renewable energy or energy efficiency. As discussed above, the 2004 FEIS/EIR and previously approved project would have a beneficial energy effect. The Revised Project likewise would have a beneficial effect on the energy footprint of the region by diverting the use of fossil fuel consumption by cars, thereby counterbalancing the additional power required for project operation. The direct, long-term impacts of the Revised Project on energy would be less than significant. The discussion presented in this Addendum Section 3.18 regarding energy consumption, along with the discussion in Section 3.7, Greenhouse Gas Emissions, and Section 3.16, Transportation, describes how the Revised Project would have a less-than-significant impact on energy resources. In addition, the reduction of personal vehicle trips resulting from project operation also would contribute to the transportation and land use goals of the city's Climate Action Plan (2021a), to increase trips taken by low-carbon modes such as transit, and the environment goals of Plan Bay Area 2050, to reduce GHG emissions from vehicles.

Conclusion

The existing conditions, as updated, would not be substantially different such that Revised Project implementation would result in new or substantially more severe significant impacts compared to the significance conclusions on utilities in the 2018 Final SEIS/EIR. No new mitigation measures to address public utility impacts have been identified that would need to be implemented because of changed conditions. No new information of substantial importance has been identified, and none of the conditions described in Sections 15162 and 15163 of the CEQA Guidelines calling for preparation of a subsequent or supplement to an EIR has been met.

3.19 Mandatory Findings of Significance

The lead agency shall find that a project may have a significant effect on the environment and thereby require an EIR to be prepared for the project where there is substantial evidence, in light of the whole record, that any of the following conditions may occur. Where prior to commencement of the environmental analysis a project proponent agrees to mitigation measures or project modifications that would avoid any significant effect on the environment or would mitigate the significant environmental effect, a lead agency need not prepare an EIR solely because without mitigation the environmental effects would have been significant (per section 15065 of the state CEQA guidelines):	**Significance Determination from the 2018 Final SEIS/EIR**	**Significance Determination for the Revised Project**	**Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new significant impacts or changes in the severity of previously identified significant impacts?**	**Do changes in the project require major revisions to the 2018 Final SEIS/EIR because of new or changed circumstances involving new significant impacts or substantially more severe impacts than those analyzed in the 2018 Final SEIS/EIR?**	**Has new information become available, resulting in previously undisclosed significant impacts, a change in the severity of significant impacts, or a change in the feasibility of mitigation measures?**
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	LTS-M	LTS-M	No	No	No
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of past, present and probable future projects)?	SU	SU	No	No	No
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	SU	SU	No	No	No

Discussion

Degrade the Quality of the Environment. As discussed in the 2018 Final SEIS/EIR, the project would have the potential for impacts on biological resources (nesting birds) and cultural resources (paleontological resources). Mitigation measures identified in the 2018 Final SEIS/EIR and adopted and incorporated into the Transbay Program to conduct

preconstruction bird surveys and minimize potential impacts on paleontological resources would reduce the potentially significant impacts to less-than-significant levels.

Section 3.4, Biological Resources, and Section 3.5, Cultural Resources, of this Addendum conclude that the Revised Project, like the approved project, could disrupt nesting birds in trees near Revised Project components and would include below-ground facilities that could uncover significant paleontological resources. With implementation of the 2004 and 2018 Mitigation Measures, the Revised Project's potential impacts on these resources would be reduced to less-than-significant levels. Therefore, the impacts on the quality of the environment as a result of the Revised Project would be the same as presented in the 2018 Final SEIS/EIR.

Cumulative Impacts. The Revised Project would eliminate or defer project components, or would reduce the scope and/or footprint of project components, and thus most Revised Project components would result either in no or lesser cumulative effects than discussed in the 2018 Final SEIS/EIR.

Sea-Level Rise. The only significant cumulative effect identified in the 2018 Final SEIS/EIR was sea-level rise due to global climate change. Impacts of the Revised Project and impacts from changes in new sea-level rise information are discussed in Section 3.9 Hydrology and Water Quality of this Addendum. As presented in Section 3.9, the worst-case scenario for 2100 under the 2018 State of California Sea-Level Rise Guidance would be greater levels of inundation than the estimate used in the 2018 Final SEIS/EIR by 1.4 feet, as shown in Table 3-3 and Figure 3-4. As a result, inundation would be more extensive at the east end of the Transit Center, the Fourth and Townsend Street area, and the Caltrain railyard. Implementation of 2018 Mitigation Measure New-MM-CU-WQ-9.1 for a Sea-Level Rise Adaptation Plan and 2018 Mitigation Measure New-MM-WQ-4.1 would apply to the Revised Project; however, because of the continued uncertainty regarding regional sea-level rise protection measures and the feasibility of implementing all resiliency measures necessary to avoid future inundation, this impact would remain significant and unavoidable, the same as concluded for the project in the 2018 Final SEIS/EIR.

Transportation. Under the Revised Project, the modification of the Fourth and Townsend Street Station design would enable HSR trains to stop at this station, which had not been anticipated in the 2018 Final SEIS/EIR. This station was analyzed in the 2018 Final SEIS/EIR as a Caltrain-only stop. Similar to other improvements, such as the extended train box at the Transit Center and the widened throat structure, the DTX Phase 2 includes features to accommodate high-speed trains, consistent with the Transbay Program's purpose and need. However, DTX and HSR service each have independent utility, and the 2018 Final SEIS/EIR identifies HSR operations, as described in the California High-Speed Rail Authority's (CHSRA) Business Plan, as a cumulative project.

The CHSRA Final EIR/EIS, certified in August 2022, for HSR service between San Francisco and San Jose analyzes two future horizon years (CHSRA 2022c). The first future year analysis considers a 2029 scenario in which HSR trains would stop at the Caltrain Fourth and King Station before the DTX is completed. This scenario would only occur for a short duration, because the CHSRA Final EIR/EIS explains that DTX Phase 2 would be completed by 2031. 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. The 2040

future horizon year for long-term cumulative effects is the same as that used in the 2018 Final SEIS/EIR for the DTX Phase 2 Project. Both the 2018 Final SEIS/EIR for the DTX Phase 2 and the CHSRA Final EIR/EIS considered Caltrain's electrification program, DTX and HSR service to the Transit Center, and background growth consistent with the area plans traversed by the project alignment.

Because the CHSRA Final EIR/EIS 2029 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 HSR service for the 2029 scenario.

In 2029, construction of the tunnel stub box and the Fourth and Townsend Street Station for the Revised Project could be underway and the construction-related impacts could combine with the impacts of HSR trains arriving 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 Station would contribute to increased vehicle, bicycle and pedestrian volumes in the same area along Townsend Street. Together, DTX construction and HSR operations could result in potential cumulative transportation impacts on transit access and pedestrian/bicyclist circulation.

The 2029 analysis of HSR use of the Fourth and King Station reported 11,000 daily passenger trips at the station and 3,600 daily vehicle trips associated with passengers arriving and departing the station by automobiles, taxis and transportation network companies, rental car shuttles, and transit. These passenger trips and daily vehicle trips, many of which would occur during the peak hours, would be in addition to those associated with Caltrain service to the Fourth and King Station, the Central Subway, and background growth in the area. The CHSRA Final EIR/EIS concluded that VMT impacts would be beneficial, and the parking impacts would be less than significant. However, the number of intersections operating at unacceptable level of congestion (LOS E or F) would increase around the Fourth and King Station and result in significant and unavoidable transit impacts to Muni bus routes 30 and 45 as a result of increased traffic associated with HSR service to the Fourth and King Station, which would be adjacent to the Fourth and Townsend Street Station for the Revised Project. The majority of the added delay to the 30 Stockton and 45 Union–Stockton bus routes would be concentrated at one location: the Fourth Street / Townsend Street intersection adjacent to the Fourth and King Station. Compared to 2029 No Project conditions, the CHSRA Final EIR/EIS identified that intersection delays at this intersection would increase by 20 seconds in the AM peak hour. In addition, HSR service at the Fourth and King Station would exacerbate crowding along sidewalks and crossings, resulting in significant impacts.

As a result, the cumulative transportation impacts in 2029 would be significant. The San Francisco Planning Department assumes that construction of a project within the city would not typically create potentially adverse transportation effects because 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 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). The CHSRA Final EIR/EIS recommended the following mitigation measures that have now been adopted by the CHSRA: optimize signal timing on Townsend Street, contribute funding for transit priority treatments along Muni Routes 30 and 45, contribute to Fourth and King Station pedestrian improvements already underway by the city. As indicated above, the city does not consider construction impacts on transportation to be a significant impact because of required compliance with city regulations. The CHSRA will contribute to improvements to lessen impacts, and the city completed the Townsend Street Corridor Project in 2020 which was specifically designed to make near-term improvements to the street for enhanced pedestrian and bicyclist safety in advance of the DTX Phase 2 project. Although the HSR impacts are identified as significant and unavoidable, the 2029 cumulative scenario is a short-term condition that would be alleviated when DTX Phase 2 is completed in 2031, pending funding availability, and the Revised Project's contribution related to construction would be less than cumulatively considerable as a result of the city's regulations and requirements governing construction activities and the previously adopted 2004 and 2018 mitigation measures that were adopted and incorporated into the Transbay Program.

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 HSR 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 HSR passengers 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 operational, many of the Caltrain passengers would board and alight at the Transit Center, which is closer to employment and Financial District destinations than either the existing Caltrain station at Fourth and King Streets or the DTX Phase 2 Fourth and Townsend Street Station. 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 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. Under a 2040 No Project condition, the Revised Project is not implemented, meaning 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 Station. Implementation of the Revised Project would contribute substantially to reduced ridership at the Fourth and King 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 this area would not be substantial, and the cumulative effects on transportation with the Revised Project would be less than significant, 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.

Direct or Indirect Adverse Effects on Human Beings. As discussed in the 2018 Final SEIS/EIR, the project would have the potential for significant impacts on resources that could cause adverse effects on human beings (i.e., air quality; flooding; geotechnical hazards; noise; electromagnetic fields; and vehicular, pedestrian, and bicyclist safety). For other resources that affect human beings (i.e., GHG emissions, aesthetics, land use and planning, population and housing, public services, hazardous materials, and utilities), the 2018 Final SEIS/EIR concluded that the impacts would be less than significant. Compliance with existing regulations and required permits as well as implementation of the 2004 and 2018 Mitigation Measures would reduce the impacts on human beings to less-than-significant levels, except for impacts related to sea-level rise by 2100 and nighttime construction noise, which would remain significant and unavoidable.

Under the Revised Project, the impacts on human beings would be similar to those described in the 2018 Final SEIS/EIR. The deferral of the underground pedestrian connector and intercity bus facility, the reduction in the train box extension, the elimination of the taxi staging area around the intercity bus facility, and the reduction in the number of tracks in a portion of the tunnel would all reduce the construction footprint, duration, and associated impacts on local circulation, air quality, and noise for a majority of the corridor. By contrast, these impacts would be more intensive along Townsend Street between Fourth and Seventh Streets, where the Fourth and Townsend Street Station and the tunnel

stub box would involve more excavation and construction activities. Construction impacts would be reduced to less-than-significant levels with implementation of the DTX Design Criteria; the 2004 and 2018 Mitigation Measures that have been adopted and incorporated into the Transbay Program; and modifications to previously adopted 2018 Mitigation Measure New-MM-C-GE-4.1, which is part of the Revised Project.

The two significant and unavoidable impacts identified in the 2018 Final SEIS/EIR – sea level rise and nighttime construction noise – would not be substantially more severe than reported in the 2018 Final SEIS/EIR. Portions of the Revised Project would be more vulnerable to sea-level rise by 2100, based on the State's worst-case scenario for 2100; however, local and regional efforts on climate adaptation and resiliency have gained increasing momentum and urgent in calls for action. The City of San Francisco adopted an updated Climate Action Plan in 2021 that includes an aggressive goal of net-zero emissions by 2040 through solid waste reduction, increasing low-carbon trips, achieving a 100 percent renewable electricity supply, building new housing units, and sequestering carbon through ecosystem restoration (City of San Francisco 2021). This plan is being implemented concurrently with the city's resilience and sustainability program that evolved out of a 2016 Sea Level Rise Action Plan, which establishes a step-by-step program to develop vulnerability and risk assessments and adaptation strategies. Similar efforts are occurring at the regional and state levels; e.g., Resilient by Design: Bay Area Challenge, the Sonoma County Regional Climate Authority, Adaptation to Rising Tides, the Bay Area Regional Reliability Project, Bay Area Regional Health Inequities Initiative, San Francisco Climate & Health Profile, RISeR SF Bay, Marin County C-SMART, Sea Change San Mateo County, Climate Ready North Bay, and the San Francisco Bay Restoration Authority are all actively engaged in advancing climate adaptation and resilience.

Nighttime construction noise would affect sensitive receptors in localized areas along the corridor. Although more sensitive land uses, such as residential uses and hotels, are present, they are in new structures that have higher noise-attenuating construction materials than older residential land uses. Construction noise at nighttime still could interfere with sleep and disturb residential and temporary lodging occupants. Therefore, impacts due to sea-level rise and nighttime construction would continue to be significant and unavoidable under the Revised Project, but, for the reasons cited, the impacts would not be substantially more severe.

Conclusion

Changes to existing and future conditions, particularly with the commencement of HSR service and the planned growth envisioned by the adopted area plans in the project area, would continue to transform the project area, increase population and employment densities, alter the sky line, and offer more transit options for local, regional, and statewide travelers. As concluded in this Addendum and the above assessment of long-term and cumulative effects, the Revised Project would not result in new significant impacts or substantially more severe significant environmental impacts that were not identified in the prior 2004 FEIS/EIR or 2018 Final SEIS/EIR. No new mitigation would be required. Therefore, no new information of substantial importance has been identified, and none of the conditions described in Sections 15162 and 15163 of the CEQA Guidelines calling for preparation of a subsequent or supplemental EIR has been met.

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Appendix A

Revised Mitigation Measures and Mitigation Monitoring and Reporting Program

Mitigation measures were identified in the 2004 FEIS/EIR (i.e., 2004 Mitigation Measures) and the 2018 Final SEIS/EIR (i.e., 2018 Mitigation Measures). These mitigation measures were adopted and incorporated into the Transbay Program, and would all still be relevant to and implemented as part of the Revised Project. The Mitigation Monitoring and Reporting Program (MMRP) that was part of the project approvals in 2018 is shown in Table A-1, below. No new mitigation measures are included; however, two mitigation measures (2018 Mitigation Measure New-MM-C-GE-4.1 and 2018 Mitigation Measure New-MM-TR-1.1) and one improvement measure (2018 Improvement Measure New-I-TR-1.1) are proposed to be modified, while one mitigation measure would be deleted (2018 Mitigation Measure New-MM-TR-3.1). The text revisions to the measures are presented here using ~~strikethrough~~ to indicate deleted text and <u>underlining</u> to indicate added text.

Table A-1. Transbay Terminal/Caltrain DTX/Redevelopment Project FEIS/FEIR and SEIS/EIR Mitigation Monitoring and Reporting Program

Mitigation Measure	Responsibility for Implementation	Mitigation Schedule	Monitoring Responsibility	Monitoring Actions/Schedule
Wind				
W 1 – Consider potential wind effects of an individual project for the Redevelopment area. If necessary, perform wind tunnel testing in accordance with City Planning Code Section 148. If exceedences of the wind hazard criterion should occur for any individual project, require design modifications or other mitigation measures to mitigate or eliminate these exceedences. Tailor mitigation measures to the individual needs of each project. Examples of mitigation measures include articulation of building sides and softening of sharp building edges.	San Francisco Redevelopment Agency (Agency)	During environmental review process preceding approval of each individual project in Transbay Redevelopment Area	Agency	Apply project review procedures for wind when projects are developed by or proposed to Agency.
Property Acquisition/Relocation				
Prop 1 – Apply federal Uniform Relocation Act (Public Law 91 646) and California Relocation Act (Chapter 16, Section 7260 et seq., of the Government Code) and related laws and regulations governing both land acquisition and relocation. All real property to be acquired will be appraised to determine its fair market value before an offer is made to each property owner. (Minimum relocation payments are detailed in the laws, and include moving and search payments for businesses.) Provide information, assistance, and payments to all displaced businesses in accordance with these laws and regulations.	City and County of San Francisco (CCSF), Agency, and TJPA	Prior to and during property acquisition and relocation activities	TJPA	TJPA to report to Board on compliance during acquisition and relocation activities.
Safety and Emergency Services				
Saf 1 – Provide project plans to the San Francisco Fire Department for its review to ensure that adequate life safety measures and emergency access are incorporated into the design and construction of Project facilities.	Transbay Joint Powers Authority (TJPA)	Prior to project facility permitting and during construction	TJPA	Project facility plans to be forwarded to CCSF Fire Department prior to permit issuance. Inspect installation during construction.
Saf 2 – Prepare a life safety plan including the provision of on-site measures such as a fire command post at the Terminal, the Fire Department's 800-megahertz radio system and all necessary fire suppression equipment.	TJPA	Prior to project facility permitting	TJPA	TJPA to develop life safety plan during facility design phases

Table A-1. Transbay Terminal/Caltrain DTX/Redevelopment Project FEIS/FEIR and SEIS/EIR Mitigation Monitoring and Reporting Program

Mitigation Measure	Responsibility for Implementation	Mitigation Schedule	Monitoring Responsibility	Monitoring Actions/Schedule
				and implement during testing and startup up phase.
Saf 3 – Prepare a risk analysis to accurately determine the number of personnel necessary to maintain an acceptable level of service at Project facilities.	TJPA	Prior to project facility permitting	TJPA	TJPA to develop risk analysis during facility design phase.
Noise – Operations				
NoiO 1 – Apply noise mitigation at the following locations adjacent to the bus storage facility: • Provide sound insulation to mitigate noise impacts at the residences north of the AC Transit Facility at the corner of Perry and Third Street. At a minimum, apply sound insulation to the façade facing the bus storage facility (the south façade). • Construct two noise barriers to mitigate noise impacts to residences south of the AC Transit Facility along Stillman Street. The first noise barrier would be approximately 10 to 12 feet high and run along the southern edge of the AC Transit storage facility. The second noise barrier would be approximately 5 to 6 feet high and would be located on the portion of the ramp at the southwestern corner of the AC Transit facility. Treat the noise barriers with an absorptive material on the side facing the facility to minimize the potential for reflections off the underside of the freeway. • Construct a noise barrier to mitigate noise impacts to residences south of the Golden Gate Transit Facility along Stillman Street. The barrier would be approximately 10 to 12 feet high and run along the southern and a portion of the eastern edge of the Golden Gate Transit storage facility. Treat the noise barriers with an absorptive material on the side facing the facility to minimize the potential for reflections off the underside of the freeway.	TJPA	During construction	TJPA	TJPA to design detailed noise mitigation during preliminary and final design phases. TJPA engineering staff to inspect installation and/or construction of mitigation measures.
NoiO 2 – Landscape the noise walls. Develop the actual design of the walls in cooperation with area residents.	TJPA	During preliminary and final design	TJPA	TJPA to work with area residents during design of noise walls.

Table A-1. Transbay Terminal/Caltrain DTX/Redevelopment Project FEIS/FEIR and SEIS/EIR Mitigation Monitoring and Reporting Program

Mitigation Measure	Responsibility for Implementation	Mitigation Schedule	Monitoring Responsibility	Monitoring Actions/Schedule
NoiO 3 – Construct noise walls prior to the development of the permanent bus facilities.	TJPA	During schedule development, construction document preparation and construction	TJPA	TJPA to develop program schedule and contract documents to implement this construction sequencing requirement.
New-MM-NO-1.1 – *Design Ventilation Shaft to Avoid Noise Effects on Nearby Uses*. Ventilation shafts shall be designed in accordance with the APTA guidance for controlling noise, which includes a 60 dBA noise level at 50 feet from the facility, at the setback line of the nearest building, or at the nearest occupied area, whichever is nearest to the source. Treatments may include applying acoustical absorption materials to shaft surfaces or attaching silencers to fans.	TJPA	During final design	TJPA	TJPA to incorporate noise abatement and control features and measures as part of the ventilation shaft design during final design and include appropriate specifications in the contract documents. TJPA engineering staff to inspect installation and/or construction of ventilation shafts.
Noise – Construction				
NoiC 1 – Comply with San Francisco noise ordinance. The noise ordinance includes specific limits on noise from construction. The basic requirements are: • Maximum noise level from any piece of powered construction equipment is limited to 80 dBA at 100 feet. This translates to 86 dBA at 50 feet. • Impact tools are exempted, although such equipment must be equipped with effective mufflers and shields. The noise control equipment on impact tools must be as recommended by the manufacturer and approved by the Director of Public Works.	TJPA	During preparation of construction contract documents and construction	TJPA	TJPA to work with CCSF Department of Public Works (DPW) regarding construction noise mitigation program.

Table A-1. Transbay Terminal/Caltrain DTX/Redevelopment Project FEIS/FEIR and SEIS/EIR Mitigation Monitoring and Reporting Program

Mitigation Measure	Responsibility for Implementation	Mitigation Schedule	Monitoring Responsibility	Monitoring Actions/Schedule
• Construction activity is prohibited between 8 p.m. and 7 a.m. if it causes noise that exceeds the ambient noise plus 5 dBA. The noise ordinance is enforced by the San Francisco DPW, which may waive some of the noise requirements to expedite the project or minimize traffic impacts. For example, along Townsend Street where much of the land use is commercial, business owners may prefer nighttime construction since it would reduce disruption during normal business hours. The DPW waivers usually allow most construction processes to continue until 2 a.m., although construction processes that involve impacts are rarely allowed to extend beyond 10 p.m. This category would include equipment used in demolition such as jackhammers and hoe rams, and pile driving. It is not anticipated that the construction documents would have specific limits on nighttime construction. There may be times when nighttime construction is desirable (e.g., in commercial districts where nighttime construction would be less disruptive to businesses in the area) or necessary to avoid unacceptable traffic disruptions. Since the construction would be subject to the requirements of the San Francisco noise regulations, in these cases, the contractor would need to work with the DPW to come up with an acceptable approach balancing interruption of the business and residential community, traffic disruptions, and reducing the total duration of the construction.				
NoiC 2 – Conduct noise monitoring. The purpose of monitoring is to ensure that contractors take all reasonable steps to minimize noise.	TJPA	During construction	TJPA	Monitoring data to be provided to CCSF DPW.
NoiC 3 – Conduct inspections and noise testing of equipment. This measure will ensure that all equipment on the site is in good condition and effectively muffled.	TJPA	During construction	TJPA	Perform monitoring during construction.
NoiC 4 – Implement an active community liaison program. This program would keep residents informed about construction plans so they can plan around periods of particularly high noise levels and would provide a conduit for residents to express any concerns or complaints about noise.	TJPA	During construction	TJPA	TJPA to develop and initiate community liaison program during final design prior to construction. Program will continue during construction.

Table A-1. Transbay Terminal/Caltrain DTX/Redevelopment Project FEIS/FEIR and SEIS/EIR Mitigation Monitoring and Reporting Program

Mitigation Measure	Responsibility for Implementation	Mitigation Schedule	Monitoring Responsibility	Monitoring Actions/Schedule
NoiC 5 – Minimize use of vehicle backup alarms. Because backup alarms are designed to get people's attention, the sound can be very noticeable even when their sound level does not exceed the ambient, and it is common for backup alarms at construction sites to be major sources of noise complaints. A common approach to minimizing the use of backup alarms is to design the construction site with a circular flow pattern that minimizes backing up of trucks and other heavy equipment. Another approach to reducing the intrusion of backup alarms is to require all equipment on the site to be equipped with ambient sensitive alarms. With this type of alarm, the alarm sound is automatically adjusted based on the ambient noise. In nighttime hours when ambient noise is low, the backup alarm is adjusted down.	TJPA	During construction document preparation and construction	TJPA	Review contract specifications during final design and inspect construction.
NoiC 6 – Include noise control requirements in construction specifications. These should require the contractor to • Perform all construction in a manner to minimize noise. The contractor should be required to select construction processes and techniques that create the lowest noise levels. Examples are using predrilled piles instead of impact pile driving, mixing concrete offsite instead of onsite, and using hydraulic tools instead of pneumatic impact tools. • Use equipment with effective mufflers. Diesel motors are often the major noise source on construction sites. Contractors should be required to employ equipment fitted with the most effective commercially available mufflers. • Perform construction in a manner to maintain noise levels at noise sensitive land uses below specific limits. • Perform noise monitoring to demonstrate compliance with the noise limits. Independent noise monitoring should be performed to check compliance in particularly sensitive areas. • Minimize construction activities during evening, nighttime, weekend and holiday periods. Permits would be required before construction can be performed in noise sensitive areas during these periods.	TJPA	Final design and construction	TJPA	TJPA to develop detailed noise control requirements during preliminary engineering and final design. Ensure contractor obtains permits if necessary. Inspect construction activities for compliance and monitor noise levels. Where applicable, coordinate with CCSF departments with jurisdiction over activities, such as CCSF Department of Parking and Traffic (DPT) and DPW.

Table A-1. Transbay Terminal/Caltrain DTX/Redevelopment Project FEIS/FEIR and SEIS/EIR Mitigation Monitoring and Reporting Program

Mitigation Measure	Responsibility for Implementation	Mitigation Schedule	Monitoring Responsibility	Monitoring Actions/Schedule
• Select haul routes that minimize intrusion to residential areas. This is particularly important for the trench alternatives that will require hauling large quantities of excavation material to disposal sites. Controlling noise in contractor work areas during nighttime hours is likely to require some mixture of the following approaches: • Restrictions on noise producing activities during nighttime hours. • Laying out the site to keep noise producing activities as far as possible from residences, to minimize the use of backup alarms, and to minimize truck activity and truck queuing near the residential areas. • Use of procedures and equipment that produce lower noise levels than normal. For example, some manufacturers of construction equipment can supply special noise control kits with highly effective mufflers and other materials that substantially reduce noise emissions of equipment such as generators, tunnel ventilation equipment, and heavy diesel power equipment including mobile cranes and front-end loaders. • Use of temporary barriers near noisy activities. By locating the barriers close enough to the noise source, it is possible to obtain substantial noise attenuation with barriers 10 to 12 feet high even though the residences are 30 to 40 feet higher than the construction site. • Use of partial enclosures around noisy activities. It is sometimes necessary to construct shed-like structures or complete buildings to contain the noise from nighttime activities.				
Vibration – Operations				
VibO1 – Use high-resilience track fasteners or a resiliently supported tie system for the Caltrain Downtown Extension for areas projected to exceed vibration criteria, including the following locations: (1) Live/Work condos, 388 Townsend Street (Hubbell and Seventh), (2) San Francisco Residences on Bryant (Harrison Parking Lot Site), (3) Clock Tower Building, and Second Street High Rise and (4) new Marriott Courtyard (Marine Firefighter's Union).	TJPA	During preliminary engineering, final design and construction	TJPA	TJPA to develop locations/use of resilience track fasteners or resiliently supported tie system during preliminary engineering and final

Table A-1. Transbay Terminal/Caltrain DTX/Redevelopment Project FEIS/FEIR and SEIS/EIR Mitigation Monitoring and Reporting Program

Mitigation Measure	Responsibility for Implementation	Mitigation Schedule	Monitoring Responsibility	Monitoring Actions/Schedule
				design. Review construction documents and inspect installation. Where applicable, coordinate with CCSF departments with jurisdiction over activities, such as CCSF Department of Building Inspection (DBI) and DPW.
Vibration – Construction				
VibC 1 – Limit or prohibit use of construction techniques that create high vibration levels. At a minimum, processes such as pile driving would be prohibited at distances less than 250 feet from residences.	TJPA	During preliminary engineering, final design and construction	TJPA	TJPA to ensure preliminary design, final design and contract documents preclude use of pile driving equipment within 250 feet of residences. Construction management and inspection will monitor contractors' activities to ensure compliance. Where applicable, coordinate with CCSF departments with jurisdiction over activities, such as DBI and DPW.

Table A-1. Transbay Terminal/Caltrain DTX/Redevelopment Project FEIS/FEIR and SEIS/EIR Mitigation Monitoring and Reporting Program

Mitigation Measure	Responsibility for Implementation	Mitigation Schedule	Monitoring Responsibility	Monitoring Actions/Schedule
VibC 2 – Restrict procedures that contractors can use in vibration sensitive areas. (It is often possible to employ alternative techniques that create lower vibration levels. For example, unrestricted pile driving is one activity that has considerable potential for causing annoying vibration. Using the cast-in-drilled-hole piling method instead will eliminate most potential for vibration impact from the piling.)	TJPA	During preliminary engineering, final design and construction	TJPA	TJPA to establish construction vibration design standards during final design. Include provisions in contract documents and monitor contractors' activities to ensure compliance. Where applicable, coordinate with CCSF departments with jurisdiction over activities, such as DBI and DPW.
VibC 3 – Require vibration monitoring during vibration intensive activities.	TJPA	During construction	TJPA	TJPA to include provisions for vibration monitoring in construction contract documents or perform monitoring under a separate contract. Where applicable, coordinate with CCSF departments with jurisdiction over activities, such as DBI and DPW.
VibC 4 – Restrict the hours of vibration intensive activities such as pile driving to weekdays during daytime hours.	TJPA	During design and construction	TJPA	TJPA to include provisions in contract documents and monitor contractors' activities to ensure compliance.

Table A-1. Transbay Terminal/Caltrain DTX/Redevelopment Project FEIS/FEIR and SEIS/EIR Mitigation Monitoring and Reporting Program

Mitigation Measure	Responsibility for Implementation	Mitigation Schedule	Monitoring Responsibility	Monitoring Actions/Schedule
VibC 5 – Investigate alternative construction methods and practices to reduce the impacts in coordination with the construction contractor if resident annoyance from vibration becomes a problem.	TJPA	During final design and during construction	TJPA	TJPA to include provisions in contract documents and monitor contractors' activities to ensure compliance. Where applicable, coordinate with CCSF departments with jurisdiction over activities, such as DBI and DPW.
VibC 6 – Include specific limits, practices and monitoring and reporting procedures for the use of controlled detonation. Control and monitor use of controlled detonation to avoid damage to existing structures. Include specific limits, practices, and monitoring and reporting procedures within contract documents to ensure that such construction methods, if used, would not exceed safety criteria.	TJPA	During final design and during construction	TJPA	TJPA to establish detailed limits, practices, and monitoring program for controlled detonation during final design. Include provisions in contract documents and monitor contractors' activities to ensure compliance. Where applicable, coordinate with CCSF departments with jurisdiction over activities, such as DBI and DPW.
Soils/Geology				
SG 1 – Monitor adjacent buildings for movement, and if movement is detected, take immediate action to control the movement.	TJPA	During construction	TJPA	TJPA to include provisions in contract documents requiring

Table A-1. Transbay Terminal/Caltrain DTX/Redevelopment Project FEIS/FEIR and SEIS/EIR Mitigation Monitoring and Reporting Program

Mitigation Measure	Responsibility for Implementation	Mitigation Schedule	Monitoring Responsibility	Monitoring Actions/Schedule
				such monitoring and corrective measures and inspect contractors' activities to ensure compliance. Where applicable, coordinate with CCSF departments with jurisdiction over activities, such as DBI and DPW.
SG 2 – Apply geotechnical and structural engineering principles and conventional construction techniques similar to the design and construction of high-rise buildings and tunnels throughout the downtown area. Apply design measures and utilize pile-supported foundations to mitigate potential settlement of the surface and underground stations.	TJPA	During preliminary engineering and final design	TJPA	TJPA to review design and contract documents to ensure implementation. Where applicable, coordinate with CCSF departments with jurisdiction over activities, such as DBI and DPW.
SG 3 – Design and construct structural components of the project to resist strong ground motions approximating the maximum anticipated earthquake (0.5g). The cut-and-cover portions will require pile supports to minimize non-seismic settlement in soft compressible sediments (Bay Mud). The underground Caltrain station at Fourth and Townsend will require pile-supported foundations due to the presence of underlying soft sediments.	TJPA	During preliminary engineering, final design and construction	TJPA	TJPA to design structural components to meet seismic standards during preliminary engineering and final design. Review design, contract documents and construction activities to ensure implementation. Where applicable, coordinate with JPB and CCSF departments with

Table A-1. Transbay Terminal/Caltrain DTX/Redevelopment Project FEIS/FEIR and SEIS/EIR Mitigation Monitoring and Reporting Program

Mitigation Measure	Responsibility for Implementation	Mitigation Schedule	Monitoring Responsibility	Monitoring Actions/Schedule
				jurisdiction over activities, such as DBI and DPW.
SG 4 – Underpin existing building, where deemed necessary, to protect existing structures from potential damage that could result from excessive ground movements during construction. Design the tunneling and excavation procedures (and construction sequence), and design of the temporary support system with the objective of controlling ground deformations within small enough levels to avoid damage to adjacent structures. Where the risk of damage to adjacent structures is too great, special measures will be implemented such as: (1) underpinning, (2) ground improvement, and/or (3) strengthening of existing structures to mitigate the risks. Underpinning may include internal strengthening of the superstructure, bracing, reinforcing existing foundations, or replacing existing foundations with deep foundations embedded outside the tunnel zone of influence. Alternatives, in lieu of underpinning, involve strengthening the rock between the building and crown of tunnel. Grouting in combination with inclined pin piles can be used not only to strengthen the rock, but also make the rock mass over the tunnel act as a rigid beam, allowing construction of tunnels with no adverse effects on the buildings supported on shallow foundations over the tunnel.	TJPA	During preliminary engineering, final design and construction	TJPA	TJPA to design tunneling, excavation procedures, underpinning, strengthening existing structures or ground improvement to protect existing structures from damage. Include provisions in contract documents requiring contractors to implement measures during construction. Monitor construction activities to ensure compliance. Where applicable, coordinate with CCSF departments with jurisdiction over activities, such as DBI and DPW.
SG 5 – TJPA shall assure proper design and construction of pile-supported foundations for structures to control potential settlement of the surface. Stability of excavations and resultant impacts on adjacent structures can be controlled within tolerable limits by proper design and implementation of the excavation shoring systems.	TJPA	During preliminary engineering, final design and construction	TJPA	TJPA to ensure foundations and excavation shoring systems are designed and constructed to minimize and control settlement and impacts

Table A-1. Transbay Terminal/Caltrain DTX/Redevelopment Project FEIS/FEIR and SEIS/EIR Mitigation Monitoring and Reporting Program

Mitigation Measure	Responsibility for Implementation	Mitigation Schedule	Monitoring Responsibility	Monitoring Actions/Schedule
				on adjacent structures. Where applicable, coordinate with CCSF departments with jurisdiction over activities, such as DBI and DPW.
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. • 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 probably 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	TJPA	During construction	TJPA	TJPA to design DTX facilities to protect structures from damage related to high seepage gradients. Include provisions in contract documents requiring contractors to implement measures during construction. Monitor construction activities to ensure compliance. Where applicable, coordinate with CCSF departments with jurisdiction over activities.

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below the bottom of the excavation in order to increase the strength of the ground and reduce potential ground instability.				
Utilities				
Util 1 – Coordinate with utility providers during preliminary engineering, continuing through final design and construction. Utilities would be avoided, relocated, and/or supported as necessary during construction activities to prevent damage to utility systems and to minimize disruption and degradation of utility service to local customers.	TJPA	During preliminary engineering, final design and construction	TJPA	TJPA to identify utilities; design relocations or protection measures where required; and include requirements in contract documents. Monitor construction activities to ensure implementation of all required measures.
Cultural and Historic Resources				
CH 1 – Comply with the provision of the signed Memorandum of Agreement (MOA) between the Federal Transit Administration, the State Historic Preservation Officer, and the TJPA.	TJPA	During preliminary engineering, final design and construction	TJPA	TJPA will assure compliance with MOA provisions during preliminary engineering, final design and construction, as described below.
CH 2 – **Professional Qualifications.** Assure all activities regarding history, historic preservation, historic architecture, architectural history, historic and prehistoric archaeology are carried out by or under the direct supervision of persons meeting, at a minimum, the Secretary of the Interior's professional qualifications standards (48 FR 44738-9) (PQS) in these disciplines. Nothing in this stipulation may be interpreted to preclude any signatory or any agent or contractor thereof from using the properly supervised services or persons who do not meet the PQS.	TJPA	During preliminary engineering, final design and construction	TJPA	Prior to initiation of design and construction activities, TJPA will require submission of and review qualifications of professionals performing the MOA activities to assure that

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Historic Preservation Standards. Assure all activities regarding history, historic preservation, historic architecture, architectural history, historic and prehistoric archaeology are carried out to reasonably conform to the Secretary of Interior's Standards and Guidelines for Archaeology and Historic Preservation (48 FR 44716-44740) as well as to applicable standards and guidelines established by SHPO.				Secretary of Interior standards are met.
Curation and Curation Standards. Ensure that FTA and TJPA shall, to the extent permitted under sections 5097.98 and 5097.991.[sic] of the California Public Resources Code, materials and records resulting from any archaeological treatment or data recovery that may be carried out pursuant to this MOA, are curated in accordance with 36 CFR Part 79.				
CH 3 – Integrate into the design of the new terminal a dedicated space for a permanent interpretive exhibit. The interpretive exhibit will include at a minimum, but is not necessarily limited to: plaques or markers, a mural or other depiction of the historic Transbay Transit Terminal (TTT), ramps, or Key System, or other interpretive material.	TJPA	During preliminary engineering and final design	TJPA	TJPA will include space for interpretive exhibit in terminal during design. Review contract documents and construction submittals and activities to ensure implementation.
CH 4 – Consult with the State Department of Transportation (Department) regarding the availability of historical documentary materials for the creation of the permanent interpretive display of the history of the original TTT building and its association with the San Francisco- Oakland Bay Bridge. Department will assist TJPA in planning the scope and content of the proposed interpretive exhibit. Invite the Oakland Heritage Alliance, the San Francisco Architectural Heritage, the California State Railroad Museum, and the Western Railway Museum to participate in this consultation. While retaining responsibility for the development of the exhibit, TJPA will jointly consider the Department's and participating invitees' recommendations when finalizing the exhibit design. TJPA will produce, install, and maintain the exhibit.	TJPA	During preliminary engineering and final design	TJPA	TJPA will consult with Department regarding availability of documentary materials. TJPA will invite participation in this review from the other designated parties. TJPA will produce, install, and maintain the exhibit in the new Transbay Terminal.

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CH 5 – Consult with the City of Oakland about its possible interest in having a similar interpretive exhibit in the East Bay. If agreement is reached prior to completion of final design of the Transbay Terminal, TJPA will provide and deliver exhibit materials to a venue that is mutually satisfactory to TJPA and the City of Oakland.	TJPA	During preliminary engineering and final design	TJPA	During preliminary engineering and final design, TJPA will consult with City of Oakland regarding its possible interest in establishing an exhibit. TJPA will provide and deliver exhibit materials to a venue in the City of Oakland that is mutually satisfactory to TJPA and the City of Oakland should such an exhibit be developed.
CH 6 – Identify, in consultation with Department, elements of the existing TTT that may be suitable for salvage and interpretive use by museums. Within two years following execution of this MOA by FTA and SHPO, TJPA will offer any elements identified as suitable for salvage and interpretive use to San Francisco Architectural Heritage, the California State Railroad Museum, Sacramento, the Western Railway Museum, the Oakland Museum, and any other interested parties. Remove any elements selected in a manner that minimizes damage and deliver with legal title to the recipient. Items not accepted by interested parties for salvage or interpretive use within the time frame specified herein will receive no further consideration.	TJPA	During preliminary engineering and final design	TJPA	Acceptance of items by interested parties must be completed at least 90 days prior to demolition of the Transbay Terminal.
CH 7 – Consult with Department and the Oakland Museum about contributing to Department's exhibit and the production of an interpretive video at the Oakland Museum relating to the history and engineering of the major historic state bridges of the San Francisco Bay Area. TJPA will propose contributions to such an exhibit and video that would be related to the history of the TTT, bus ramp loop structures, and the Key System. Items contributed by TJPA to such an exhibit	TJPA	During preliminary engineering and final design	TJPA	TJPA will produce and deliver to the Oakland Museum agreed-upon materials for such an exhibit and interpretive video.

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may include photographs, drawings, videotape, models, oral histories, and salvaged components from the TTT.				
CH 8 – Assist the Oakland Museum by contributing up to $50,000 toward the cost of preparing and presenting the exhibit and preparing an exhibit catalog or related museum publication in conjunction with the exhibit, in a manner and to the extent that is mutually satisfactory to TJPA, Department, and the Oakland Museum. A separate agreement will outline the negotiated financial contributions. Work with the Oakland Museum and assist in the preparation of an exhibit and interpretive video if consultation results in agreement between TJPA and the Oakland Museum prior to demolition of the existing TTT.	TJPA	During preliminary engineering and final design	TJPA	TJPA will work with Oakland Museum and assist in the preparation of an exhibit and an interpretive video if consultation results in an agreement between TJPA and Oakland Museum prior to demolition of the existing Transbay Terminal.
CH 9 – Request that SHPO, prior to the start of any work that would have an adverse effect on components of the Bay Bridge that are historic properties, determine whether these components, including the TTT and associated ramps, have been adequately recorded in existing documents. If SHPO determines that, collectively, such documents, which include the Department's past recordation of a series of remodeling and seismic retrofit project that have occurred since 1993, adequately document the TTT and ramps, then no further documentation will be necessary.	TJPA	During preliminary engineering and final design	TJPA	TJPA will consult with the SHPO regarding adequacy of prior recordation efforts.
Seek, with the assistance of the Department, to obtain the original drawings of the TTT by architect T. Pflueger.				TJPA will work with Department to seek original drawings of the Transbay Transit Terminal.
If SHPO determines that existing documentation is adequate, compile such documentation into a comprehensive record. Components to be included in the review of past documentation are: • 425 Mission Transbay Transit Terminal (APN 3719-003, 3720-001, 3721-006);				If SHPO determines that existing documentation is adequate, compile such documentation into

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• Upper Deck San Francisco Approaches or North Connector, Bridge #34-116F; • Upper Deck San Francisco Approaches or Center Ramps, Bridge #34-118L; • San Francisco Approaches or Lower Deck On-Ramp, Bridge #34-118R; • Transbay Terminal Loop ramp, Bridge #34-119Y; and • Harrison Street over-crossing Bridge #34-120Y.				a comprehensive record.
Consult further with SHPO, if SHPO determines that existing documentation does not constitute adequate recordation of the Bay Bridge components addressed hereunder. SHPO will determine what level and type of additional documentation is necessary.				If SHPO determines that existing documentation does not constitute adequate recordation of the Bay Bridge components, then TJPA and SHPO will consult further and SHPO will determine what level and type of additional documentation is necessary. If no response from SHPO within 45 days of receipt of each submittal of documentation, TJPA may assume that said documentation is adequate and may proceed with the project.
Provide xerographic copies of this documentation to the SHPO and the Department Headquarters Library, upon a written determination by SHPO that all documentation prescribed hereunder is satisfactory, to the History Center at the San Francisco Public Library, San Francisco Architectural Heritage, the Oakland History Room of the Oakland Public Library, the Oakland Museum of California,				TJPA will ensure that these records are accepted by SHPO prior to demolition of the TTT and provide copies of

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the Western Railway Museum, and Department District 4 Office. Thereafter, TJPA may proceed with that aspect of the Project that will adversely affect the historic properties documented hereunder.				the documentation to designated agencies. Then, TJPA will proceed with the aspect of the project that will adversely affect the historic properties documented.
CH 10 – Within 180 days after FTA determines that the Project has been completed, TJPA, in consultation with FTA and SHPO, will re-evaluate the Bay Bridge, a property listed on the NRHP, and determine whether the National Register nomination should be amended or whether the bridge no longer qualifies for listing and should be removed from the National Register. As appropriate, TJPA will prepare and submit to the FTA and SHPO either an amended nomination or petition for removal, to be processed according to the procedures set forth in 36 CFR Part 60 (60.14 and 60.15).	TJPA	Within 180 days after FTA determines that the Project has been completed	TJPA	As appropriate, TJPA will prepare and submit to the FTA and SHPO either an amended nomination or petition for removal, to be processed according to the procedures set forth in 36 CFR part 60 (60.14 and 60.15). TJPA will coordinate these efforts with the CCSF Planning Department.
CH 11 – Develop and implement measures, in consultation with the owners of historic properties immediately adjoining the construction sites, to protect the contributing elements of the Second and Howard Streets Historic District and the Rincon Point/South Beach Historic Warehouse Industrial District from damage by any aspect of the Project. Such measures will include, but are not necessarily limited to those identified in the MOA. The protective measures herein stipulated will be developed and implemented by TJPA prior to the commencement of any aspect of the Project that could have an adverse effect on historic properties immediately adjoining the construction sites herein identified. In addition, TJPA will monitor the effectiveness of the protective	TJPA	During preliminary engineering, final design, and construction	TJPA	TJPA will contact owners of record of historic properties that will be affected (but that will not be acquired and demolished) by the Project. TJPA will provide and review this mitigation monitoring program with the

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measures herein stipulated and will supplement or modify these measures as and where necessary in order to ensure that they are effective. The historic properties covered by the terms of this paragraph are: • 589-591 Howard Street/3736-098, NRHP Status: 1D, Contributing Element of Second & Howard District & New Montgomery/Second Street, Const. Date: 1906, Type of Impact: Cut-and-cover construction; need easement. • 163 Second Street/3721-048, NRHP Status: 1D, Contributing Element of Second & Howard District & New Montgomery/Second Street, Const. Date: 1907, Type of Impact: Cut-and-cover construction nearby. • 165-173 Second Street/3721-025, NRHP Status: 1D, Contributing Element of Second & Howard District & New Montgomery/Second Street, Const. Date: 1906, Type of Impact: Cut-and-cover construction; need easement. • 166-78 Townsend Street/3788-012, NRHP Status: 3D Contributing Element of Rincon Point/South Beach District & South End District, Const. Date: 1910 [1], 1988 [2], Type of Impact: Cut-and-cover construction nearby. Need construction easement. • 640-Second Street/3788-002, NRHP Status: 252, Contributing Element of Rincon Point/South Beach District & South End District, Const. Date: 1926, Type of Impact: Tunnel under or near property. • 650 Second Street/3788-049 through 3788-073, NRHP Status: 252, Contributing Element of Rincon Point/South Beach District & South End District, Const. Date: 1922, Type of Impact: Tunnel under or near property. • 670-680 Second Street/3788-043, 3788-044, NRHP Status: 252 (670), 3D (680), Contributing Element of Rincon Point/South Beach District & South End District, Const. Date: 1913, Type of Impact: Tunnel under or near property. • 301-321 Brannan Street/3788-037, NRHP Status: 3D, Contributing Element of Rincon Point/South Beach District & South End District, Const. Date: 1909, Type of Impact: Tunnel under or near property.				owners via correspondence and/or public and face-to-face meetings. TJPA will coordinate these efforts with the CCSF Planning Department prior to commencement of any aspect of the project that could have any adverse effect on historic properties immediately adjoining the construction sites herein identified. TJPA will monitor the effectiveness of the protective measures and will supplement or modify these measures as and where necessary in order to ensure that they are effective.

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• 130 Townsend Street/3788-008, NRHP Status: 3D, Contributing Element of Rincon Point/South Beach District & South End District, Const. Date: 1910 [1], 1895-6 [2], Type of Impact: Tunnel under or near property. • 136 Townsend Street/3788-009, NRHP Status: 3D, Contributing Element of Rincon Point/South Beach District & South End District, Const. Date: 1902 [1], 1913 [2], Type of Impact: Tunnel under or near property. • 144-46 Townsend Street/3788-009A, NRHP Status: 3D, Contributing Element of Rincon Point/South Beach District & South End District, Const. Date: 1922, Type of Impact: Tunnel under or near property. • 148-54 Townsend Street/3788-010, NRHP Status: 3D, Contributing Element of Rincon Point/South Beach District & South End District, Const. Date: 1922, Type of Impact: Tunnel under or near property. • 162-164 Townsend Street/3788-081, NRHP Status: 3D, Contributing Element of Rincon Point/South Beach District & South End District, Const. Date: 1919, Type of Impact: Tunnel under or near property. Notes: National Register Status Codes are as follows: 1 – Listed on the NRPH 251 – Determined eligible for listing by the Keeper of the Register 252 – Determined eligible for listing by the consensus of the SHPO and federal agency 1D – Listed on the National Register as a contributor to a district or multi-resource property				
CH 12 –TJPA will take the effect of the Project on the historic properties listed below into account by recording these properties in accordance with the terms herein set forth. These buildings are: • 191 2nd Street, (APN: 3721-022), and • 580-586 Howard Street, (APN: 3721-092 through 3721-106) Prior to taking any action that could adversely affect these properties, consult SHPO and SHPO will determine the type and level of recordation that is necessary for these properties. Upon a written determination by SHPO that all	TJPA	During preliminary engineering and final design	TJPA	TJPA will consult SHPO and SHPO will determine the type of recordation necessary for the properties. TJPA will submit a copy of this documentation to SHPO, upon a written

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documentation prescribed hereunder is complete and satisfactory, submit a copy of this documentation to SHPO, with xerographic copies to the History Center at the San Francisco Public Library, San Francisco Architectural Heritage, and the Oakland History Room of the Oakland Public Library. Thereafter, proceed with that aspect of the Project that will adversely affect the historic properties documented hereunder.				determination by SHPO that all documentation prescribed hereunder is complete and satisfactory, with copies to the designated agencies.
If SHPO does not respond within 45 days of receipt of each submittal of documentation prescribed herein, assume that SHPO has determined that said documentation is adequate and may proceed with that aspect of the Project that will adversely affect the historic properties documented hereunder.				If no response from SHPO within 45 days of receipt of each submittal of documentation, then TJPA may proceed with the project.
CH 13 – Repair, in accordance with the Secretary of the Interior's Standards for Rehabilitation, any damage to contributing elements of the Second and Howard Streets Historic District and the Rincon Point/South Beach Historic Warehouse Industrial District resulting from the Project.	TJPA	Prior to, during, and following construction	TJPA	TJPA will repair any damage to contributing elements.
Photograph the condition of the contributing elements prior to the start of the Project to establish the baseline condition for assessing damage. Consult with property owner(s) about the appropriate level of photographic documentation of building interiors and exteriors. Provide a copy of this photographic documentation to the property owner(s), and retain on file.				TJPA will photograph condition of contributing properties prior to the start of the Project to establish the baseline condition for assessing damage. TJPA will consult with property owner(s) about the appropriate level of photographic documentation of building interiors and exteriors, provide a copy of this

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				photographic documentation to the property owner(s), and retain copy on file by TJPA.
Submit repair plans and specifications to SHPO for review and comment, if repair of inadvertent damage resulting from the Project is necessary, to ensure that the work conforms to the Secretary of the Interior's Standards for Rehabilitation. Consult with SHPO to establish a mutually satisfactory time frame for the SHPO's review. TJPA will carry out any repairs required hereunder in accordance with the comments of SHPO.				TJPA will submit repair plans and specifications to SHPO for review and comment, if repair of inadvertent damage is necessary, to ensure conformance to the Secretary of the Interior's Standards for Rehabilitation.
CH 14 – Within 180 days after FTA determines that the Project has been completed, TJPA, in consultation with FTA and SHPO, will re-evaluate the Second and Howard Streets Historic District and determine whether the National Register nomination should be amended or whether the district no longer qualifies for listing and should be removed from the National Register. As appropriate, TJPA will prepare and submit to the FTA and SHPO either an amended nomination or petition for removal, to be processed according to the procedures set forth in 36 CFR Part 60 (60.14 and 60.15).	TJPA	Within 180 days after FTA determines that the Project has been completed	TJPA	As appropriate, TJPA will prepare and submit to the FTA and SHPO either an amended nomination or petition for removal, to be processed according to the procedures set forth in 36 CFR part 60 (60.14 and 60.15). TJPA will coordinate these efforts with the CCSF Planning Department.
CH 15 – Within 45 days following execution of MOA, consult with FTA, SHPO, JPB and CCSF to initiate the process of determining how archaeological properties that may be affected by the Project will be identified, whether and how	TJPA	During preliminary	TJPA	SHPO, FTA, SHPO, TJPA, JPB, and CCSF will consult to determine

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the NRHP eligibility of such properties may be addressed, and whether and how the Project's effects, if any, on those archaeological properties that may be considered historic properties for purposes of this MOA, may be taken into account. FTA and TJPA to invite Caltrans to participate in this consultation. Determine the time frame for this consultation with the consulting parties through consensus. Consultation will at minimum be informed by, and take into account, the following documents: • Attachment 6, "Standard Treatment of Archaeological Sites: Data Recovery Plan," of the "Programmatic Agreement among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Office, and the California Department of Transportation regarding compliance with Section 106 of the National Historic Preservation Act, as it pertains to the Administration of the Federal Aid Highway Program in California;" • "Archaeological Research Design and Treatment Plan for SF-480 Terminal Separation Rebuild" (Praetzellis and Praetzellis, 1993) and "The San Francisco-Oakland Bay Bridge, West Approach Replacement: Archaeological Research Design and Treatment Plan" (Ziesing, 2000); • "Revised Historical Archaeology Research Design for the Central Freeway Replacement Project" (Thad M. Van Bueren, Mary Praetzellis, Adrian Praetzellis, Frank Lortie, Brian Ramos, Meg Scantlebury and Judy D. Tordoff).		engineering phase		how archaeological properties will be identified, whether and how the NRHP eligibility of such properties may be addressed, and whether and how the Project's effects, if any, on those archaeological properties that may be considered historic properties may be taken into account. Invite Caltrans to participate in this consultation. The consultation will take into account the designated documents.
CH 16 – If the consulting parties agree that a treatment plan for archaeological properties should be prepared, prepare a Treatment Plan for archeological resources that provides for the identification, evaluation, and treatment of archaeological properties that may be affected by the Project and that conform to the requirements above of item CH13 1) and take into account the information contained in items CH13 2) and CH13 3) and conform to any other standards, documentation, or guidance that the consulting parties may specify.	TJPA	During preliminary engineering	TJPA	TJPA will assure completion of comprehensive treatment plan consistent with the content required in the MOA, if the consulting parties agree that a treatment plan for

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				archaeological properties is to be prepared.
If the consulting parties agree that the Treatment Plan will address historic archaeological properties as well as prehistoric archaeological properties, ensure that appropriately qualified historians prepare a historic context(s) that will be used by an interdisciplinary team consisting at a minimum of historians and historic archaeologist.				TJPA shall transmit this plan to the signatories of the MOA.
The historic context will, at a minimum: • identify significant research themes and topics that relate to the historic period(s) addressed by the historic context(s) • determine what types of historic archaeological properties, if any, that may usefully and significantly contribute to research themes and topics deemed by the historic context(s) study to be important • identify the specific components and constituents (features, artifacts, etc., if any, of historic archaeological property types that can factually and directly, contribute data important to our understanding of significant historic research themes and topics • determine the amount (sample size, etc.) of archaeological excavation and related activity that is needed to provide the range and type of factual data that will contribute to our understanding of significant historic research themes and topics				TJPA will ensure that appropriately qualified historians prepare a historic context(s) that includes the specified information for use by an interdisciplinary team consisting at a minimum of historians and historic archaeologist, if the consulting parties agree that the Treatment Plan will address historic archaeological properties as well as prehistoric archaeological properties.
Submit the draft Treatment Plan to the other consulting for review and comment. The consulting parties have 45 days from receipt of the draft Treatment Plan to comment in writing to FTA and TJPA. Failure of the consulting parties to respond within this time frame shall not preclude FTA and TJPA from finalizing the draft Treatment Plan to their satisfaction. Before finalizing the draft Treatment Plan, FTA and TJPA to provide the consulting parties with written documentation	TJPA	During preliminary engineering phase	TJPA and FTA	TJPA will submit the draft Treatment Plan to the consulting parties for review and comment.

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indicating whether and how the draft Treatment Plan will be modified. Unless any consulting party objects to this documentation in writing to FTA and TJPA within 15 days following receipt, finalize the draft Treatment Plan as deemed appropriate by FTA and TJPA, and proceed to implement the final Treatment Plan.				Before finalizing the draft Treatment Plan, FTA and TJPA will provide the consulting parties whether and how the draft Treatment Plan will be modified.
If FTA and TJPA propose to modify the final Treatment Plan, they will notify the consulting parties concurrently in writing about the proposed modifications. The consulting parties will have 15 days from receipt of notification to comment in writing to FTA and TJPA. Failure of the consulting parties to respond within this time frame shall not preclude FTA and TJPA from modifying the final Treatment Plan to their satisfaction.				TJPA will ensure that the consulting parties have 15 days following receipt of notification of the modifications to comment in writing about the proposed modifications. Unless consulting party objects, FTA and TJPA will finalize the draft Treatment Plan as they deem appropriate, and TJPA and FTA will implement the final Treatment Plan.
Before modifying the final Treatment Plan, FTA and TJPA will provide the consulting parties with written documentation indicating whether and how the final Treatment Plan will be modified. Unless any consulting party objects to this documentation in writing to FTA and TJPA within 15 days following receipt, modify the final Treatment Plan as appropriate, and proceed to implement the modified final Treatment Plan.	TJPA	During preliminary engineering phase	TJPA and FTA	FTA and TJPA will provide the consulting parties whether and how the final Treatment Plan will be modified. TJPA will ensure that the consulting parties have 15 days following receipt of notification of

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				the modifications to comment in writing about the proposed modifications. Unless consulting party objects, FTA and TJPA will modify the final Treatment Plan as they deem appropriate, and TJPA and FTA will proceed to implement the modified final Treatment Plan.
CH 17 – Within two years after FTA, in consultation with TJPA, has determined that all fieldwork required by the Treatment Plan has been completed, prepare a draft technical report that documents the results of implementing the Treatment Plan and distributes this draft technical report to the other MOA signatories for review. The reviewing parties will be afforded 60 days following receipt of the draft technical report to submit any written comments to FTA and TJPA. Failure of the reviewing parties to respond within this time frame shall not preclude FTA from authorizing TJPA to revise the draft technical report as FTA and TJPA deem appropriate. FTA will provide the reviewing parties with a written documentation indicating modifications in accordance with any reviewing party comments. Unless the reviewing parties object to this documentation in writing to FTA and TJPA within 30 days following receipt, modify the draft technical report as FTA and TJPA deem appropriate. Thereafter, issue the technical report in final form and distribute this document in accordance with paragraph CH15 2).	TJPA	Within two years of completed fieldwork	TJPA and FTA	TJPA will prepare a draft technical report that documents the results of implementing the Treatment Plan and distribute this draft technical report to the other MOA signatories for review. FTA to authorize TJPA to revise draft as deemed appropriate by FTA and TJPA. FTA will provide the reviewing parties with a written documentation indicating modifications in accordance with any

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				reviewing party comments. Unless any reviewing party objects, FTA and TJA to issue technical report in final form and distribute in accordance with paragraph CH15 2).
Distribute copies of the final technical report documenting the results of the Treatment Plan implementation to the other signatory parties, to any consulting Native American Tribe if prehistoric, protohistoric or ethnographic period archaeological properties were located and addressed under the Treatment Plan, and to the appropriate California Historical Resources Information Survey (CHRIS) Regional Information Center, subject to the terms of Stipulation IV. E (CH19).				TJPA will distribute copies of the final technical report documenting the results of Treatment Plan implementation to other signatory parties, to any consulting Native American Tribe, as applicable, and to the appropriate CHRIS Regional Information Center.
Prepare a written draft document that communicates in lay terms the results of Treatment Plan implementation to members of the interested public. Distribute this written draft document for review and comment concurrently with and in the same manner as that prescribed for the draft written technical report prescribed by paragraph C.1. of this stipulation. If the draft document prescribed hereunder is a publication such as a report or brochure, then distribute such publication to the other signatory parties, to any consulting Native American Tribe as applicable, and to any other entity that the signatory parties and, as applicable, any consulting Native American Tribe, through consultation as appropriate, subject to the terms of Stipulation IV.E (CH 19).				TJPA will prepare a written draft document that communicates in lay terms the results of Treatment Plan implementation to members of interested public.

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Prepare a written annual report describing the status of its efforts to comply with the terms of Stipulations II – IV, inclusive, of this MOA. Prepare the annual report following the end of each fiscal year (July 1 to June 30) that this MOA is in effect and distributed it to all MOA signatories by July 30 of each year until FTA and the SHPO through consultation determine that the requirements of stipulations II – IV, inclusive of this MOA have been satisfactorily completed.	TJPA	During preliminary engineering, final design, and construction	TJPA	TJPA will prepare an annual report describing its efforts to comply with the terms of stipulations II-IV.
CH 18 – If the consulting parties agree that a plan for treatment of archaeological properties will not be prepared, then address any archaeological properties discovered during implementation of any aspect of the Project pursuant to 36 CFR 800.13(b)(3).	TJPA	During construction phase	TJPA	If treatment plan not prepared, TJPA will address any archaeological properties discovered during implementation of any aspect of the Project pursuant to 36 CFR 800.13(b)(3).
CH 19 – The signatories to the MOA acknowledge that historic properties covered by this MOA are subject to the provisions of Section 304 of the National Historic Preservation Act of 1966, as amended, and Section 6254.10 of the California Government Code (Public Records Act), relating to the disclosure of archaeological site information and, having so acknowledged, will ensure that all actions and documentation prescribed by this Agreement are consistent with Section 304 of the National Historic Preservation Act of 1966, as amended, and Section 6254.10 of the California Government Code.	TJPA	During preliminary engineering phase	TJPA	TJPA will acknowledge that historic properties covered by the MOA are subject to the provisions specified in the MOA, relating to the disclosure of archaeological site information. TJPA will ensure that actions and documentation are consistent with same.
CH 20 – The parties to the MOA agree that Native American burials and related items discovered during implementation of the terms of the MOA and of the Project will be treated in accordance with the requirements of Section 7050.5(b) of the California Health and Safety Code. If, pursuant to Section 7050.5(c) of the California Health and Safety Code, the county coroner/medical examiner	TJPA	Prior to, during, and following construction	TJPA	TJPA agree that Native American burials and related items discovered during implementation of the terms of the MOA

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determines that the human remains are, or may be of Native American origin, then the discovery shall be treated in accordance with the provisions of Section 5097.98(a)-(d) of the California Public Resources Code. TJPA will ensure that to the extent permitted by applicable law and regulation, the views of any consulting Native American Tribe and the Most Likely Descendant(s) are taken into consideration when decisions are made about the disposition of other Native American archaeological materials and records.				and of the Project will be treated in accordance with the requirements specified. If, pursuant to Section 7050.5(c) of the California Health and Safety Code, the county coroner/medical examiner determines that the human remains are, or may be of Native American origin, then the discovery shall be treated in accordance with the provisions specified. TJPA will ensure that to the extent permitted by applicable law and regulation, the views of any consulting Native American Tribe and the Most Likely Descendant(s) are taken into consideration when decisions are made about the disposition of other Native American archaeological materials and records.

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Mitigation Measure	Responsibility for Implementation	Mitigation Schedule	Monitoring Responsibility	Monitoring Actions/Schedule
New-MM-C-CR-4.1 – *Minimize Potential Impacts to Paleontological Resources*. To minimize potential adverse impacts on previously unknown, potentially unique, scientifically important paleontological resources, the TJPA shall do the following: • Before the start of any earthmoving activities, the TJPA shall retain a qualified paleontologist to train all construction personnel involved with earthmoving activities, including the project superintendent, regarding the possibility of encountering fossils, the appearance and types of fossils likely to be seen during construction, and the proper notification procedures should be followed if fossils are encountered. • The construction crew shall immediately cease ground-disturbing work in the vicinity of the find and notify the TJPA. • The TJPA shall retain a qualified paleontologist to evaluate the resource and prepare a recovery plan, in accordance with Society of Vertebrate Paleontology guidelines (SVP 1996). The recovery plan may include a field survey, construction monitoring, sampling and data recovery procedures, museum storage coordination for any specimen recovered, and a report of findings. Necessary and feasible recommendations in the recovery plan shall be implemented before construction activities are resumed at the site where the paleontological resource was discovered.	TJPA	Before and during construction	TJPA	Include provisions in contract documents requiring construction personnel to be trained prior to construction on procedures for notification if resources are detected. Implement measures during construction. Monitor construction activities to ensure compliance.
Hazardous Materials/Waste – Operations				
HWO 1 – Construct and operate any Caltrain fueling facility in compliance with local, state and Federal regulations regarding handling and storage of hazardous materials. (Caltrain Joint Powers Board (JPB)/TJPA).	Caltrain Joint Powers Board (JPB)	During construction and operations	TJPA	Review design and contract documents to ensure compliance with all applicable regulations. Obtain all applicable permits. Inspect construction to ensure compliance with contract documents and regulations. Inspect operations, and comply

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				with all permitting and reporting requirements.
HWO 2 – Equip diesel fuel pumps with emergency shut-off valves and, in compliance with U.S. EPA requirements, fuel Underground Storage Tanks (USTs) would be equipped with leak detection and monitoring systems.	JPB	During operations	TJPA	Review design and contract documents to ensure compliance with all applicable regulations. Obtain all applicable permits. Inspect construction to ensure compliance with contract documents and regulations. Inspect operations, and comply with all permitting and reporting requirements.
HWO 3 – Employ the use of secondary containment systems for any aboveground storage tanks.	JPB	During operations	TJPA	Secondary containment to be included in facility design and construction and maintained during operations.
HWO 4 – Store cleaning solvents in 55-gallon drums, or other appropriate containers, within a bermed area to provide secondary containment.	JPB	During operations	TJPA	Inspect operations, and comply with all permitting and reporting requirements.
HWO 5 – Slope paved surfaces within the fueling facility and the solvent storage area to a sump where any spilled liquids could be recovered for proper disposal.	JPB	During construction and operations	TJPA	Sloped paved surfaces and sump to be included in facility design.
HWO 6 – Follow California OSHA and local standards for fire protection and prevention for the handling and storage of fuels and solvents.	JPB	During operations	TJPA	Review design and contract documents to ensure compliance with

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Mitigation Measure	Responsibility for Implementation	Mitigation Schedule	Monitoring Responsibility	Monitoring Actions/Schedule
				all applicable regulations. Obtain all applicable permits. Inspect construction to ensure compliance with contract documents and regulations. Inspect operations, and comply with all permitting and reporting requirements.
HWO 7 – Prepare a Hazardous Materials Management/Business Plan and file with the CCSF Department of Public Health.	JPB	During final design	TJPA	JPB to prepare and TJPA to file Hazardous Materials Management/Business Plan with CCSF Department of Public Health (DPH).
Hazardous Materials/Waste – Construction				
HMC 1 – Follow California OSHA and local standards for fire protection and prevention. Handling and storage of fuels and other flammable materials during construction will conform to these requirements, which include appropriate storage of flammable liquids and prohibition of open flames within 50 feet of flammable storage areas.	TJPA	During construction	TJPA	Review design and contract documents to ensure compliance with all applicable regulations. Obtain all applicable permits. Inspect construction to ensure compliance with contract documents and regulations.

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Mitigation Measure	Responsibility for Implementation	Mitigation Schedule	Monitoring Responsibility	Monitoring Actions/Schedule
HMC 2 – Perform detailed investigations of the potential presence of contaminants in soil and groundwater prior to construction, using conventional drilling, sampling, and chemical testing methods. Based on the chemical test results, a mitigation plan will be developed to establish guidelines for the disposal of contaminated soil and discharge of contaminated dewatering effluent, and to generate data to address potential human health and safety issues that may arise as a result of contact with contaminated soil or groundwater during construction. The investigation and mitigation plan will follow the requirements of the City and County of San Francisco's Article 22A in the appropriate areas along the alignment. With construction projects of this nature and magnitude, there are typically two different management strategies that can be employed to address contaminated soil handling and disposal issues. Contaminated soil can be excavated and stockpiled at a centralized location and subsequently sampled and analyzed for disposal profiling purposes in accordance with the requirements of the candidate disposal landfill. Alternatively, soil profiling for disposal purposes can be done in-situ so when soil is excavated it is loaded directly on to trucks and hauled to the appropriate landfill facility for disposal based on the in-situ profiling results. A project of this nature could also combine both strategies.	TJPA	During construction	TJPA	Review design and contract documents to ensure compliance with all applicable regulations. Obtain all applicable permits. Inspect construction to ensure compliance with contract documents and regulations. Where applicable, coordinate with CCSF departments with jurisdiction over activities, such as DPH and DPW.
HMC 3 – Cover with plastic sheeting soils removed during excavation and grading activities that remain at a centralized location for an extended period of time to prevent the generation of fugitive dust emissions that migrate offsite.	TJPA	During construction	TJPA	Review design and contract documents to ensure compliance. Obtain all applicable permits. Inspect construction to ensure compliance with contract documents and regulations.
HMC 4 – Use a licensed waste hauler, applying appropriate manifests or bill of lading procedures, as required to haul soil for disposal at a landfill or recycling facility.	TJPA	During construction	TJPA	Review design and contract documents to ensure compliance. Obtain all applicable

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				permits. Inspect construction to ensure compliance with contract documents and regulations.
HMC 5 – Use chemical test results for groundwater samples along the alignment to obtain a Batch Discharge Permit under Article 4.1 of the San Francisco Department of Public Works as well as to evaluate requirements for pretreatment prior to discharge to the sanitary sewer. Effluent produced during the dewatering of excavations will be collected in onsite storage tanks and periodically tested, as required under discharge permit requirements, for potential contamination to confirm the need for any treatment prior to discharge. If required, treatment may include: • Settling to allow particulate matter (total suspended solids) to settle out of the effluent in order to reduce the sediment load as well as reduce elevated metal and other contaminant concentrations that may be associated with suspended sediments; and/or • Construction of a small-scale batch waste water treatment system to remove dissolved contaminants (mainly organic constituents such as petroleum hydrocarbons [gas, diesel, and oils], BTEX, and VOCs) from the dewatering effluent prior to discharge to the sanitary sewer. A treatment system would also likely employ the use of filtration to remove suspended solids.	TJPA	During construction	TJPA	Review design and contract documents to ensure compliance. Obtain all applicable permits. Inspect construction to ensure compliance with contract documents and regulations. Where applicable, coordinate with CCSF departments with jurisdiction over activities, such as DPH and DPW.
HMC 6 – Develop a detailed mitigation plan for the handling of potentially contaminated soil and groundwater prior to starting project construction.	TJPA	During final design	TJPA	Review detailed mitigation plan, include provisions in contract documents and inspect construction to ensure compliance. Where applicable, coordinate with CCSF departments with jurisdiction over activities, such as DPH

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Mitigation Measure	Responsibility for Implementation	Mitigation Schedule	Monitoring Responsibility	Monitoring Actions/Schedule
				and DPW. Obtain all applicable permits.
HMC 7 – Design dewatering systems to minimize downward migration of contaminants that can result from lowering the water table if necessary based on environmental conditions. As necessary, shallow soils with detected contamination would be dewatered first using wells screened only in those soils. Dewatering of deeper soils would then be performed using wells screened only in the zone to be dewatered. Dewatering wells would be installed using drilling methods that prohibit shallow contaminated soils from being carried deeper into the boreholes.	TJPA	During final design and construction	TJPA	Include requirements in contract documents and monitor construction activities to ensure compliance. Where applicable, coordinate with CCSF departments with jurisdiction over activities, such as DPH and DPW.
HMC 8 – Require that workers performing activities on site that may involve contact with contaminated soil or groundwater have appropriate health and safety training in accordance with 29 CFR 1910.120. A Worker Health and Safety Plan (HSP) will be developed for the project and monitored for the implementation of the plan on a day-to-day basis by a Certified Industrial Hygienist (CIH). The HSP will include provisions for: • Conducting preliminary site investigations and analysis of potential job hazards; • Personnel protective equipment; • Safe work practices; • Site control; • Exposure monitoring; • Decontamination procedures; and • Emergency response actions. The HSP will specify mitigation of potential worker and public exposure to airborne contaminant migration by incorporating dust suppression techniques in construction procedures. The plan will also specify mitigation of worker and environmental exposure to contaminant migration via surface water runoff	TJPA	During construction	TJPA	Provide health-and-safety training prior to start of and at timely intervals during construction. Include requirements in contract documents and monitor construction activities to ensure compliance.

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Mitigation Measure	Responsibility for Implementation	Mitigation Schedule	Monitoring Responsibility	Monitoring Actions/Schedule
pathways by implementation of comprehensive measures to control drainage from excavations and saturated materials excavated during construction.				
HMC 9 – Review existing asbestos surveys, abatement reports, and supplemental asbestos surveys, as warranted. Perform an asbestos survey for buildings to be demolished, as required. Asbestos-containing building materials (ACM) will require abatement prior to building demolition. Removal and disposal of ACM will be performed in accordance with applicable local, state, and federal regulations.	TJPA	During preliminary engineering, final design and construction phases	TJPA	Determine extent of ACM throughout project site. Perform abatement work prior to demolition. Include all regulatory requirements in contract documents and inspect construction to ensure compliance. Where applicable, coordinate with CCSF departments with jurisdiction over activities, such as DPH. Obtain all applicable permits.

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Mitigation Measure	Responsibility for Implementation	Mitigation Schedule	Monitoring Responsibility	Monitoring Actions/Schedule
HMC 10 – Perform a lead-based paint survey for buildings to be demolished to determine areas where lead-based paint is present and the possible need for abatement prior to demolition.	TJPA	During preliminary engineering prior to building demolitions	TJPA	Determine extent of lead contamination throughout project site. Perform abatement work prior to demolition if necessary. Include all regulatory requirements in contract documents and inspect construction to insure compliance. Where applicable, coordinate with CCSF departments with jurisdiction over activities, such as DPH. Obtain all applicable permits.
Pedestrians				
Ped 1 – Use future construction or redevelopment as opportunities to increase building set-backs thereby increasing sidewalk widths. Particular areas where such widening is most needed include: • The southeast corner of Fremont and Mission streets, • The northeast corner of First and Mission streets, • The north side of Mission Street between First and Fremont, and • Sidewalks south of Howard Street along Folsom, First, Fremont and Beale that are less than 10 feet wide.	Agency and CCSF	During future project reviews in Transbay Terminal area	Agency and CCSF	TJPA will forward guidance to Agency, CCSF Planning Department and DPW.
Ped 2 – Eliminate or reduce sidewalk street furniture such as newspaper boxes and magazine racks in the immediate Transbay Terminal area on corners.	Agency and CCSF	Prior to opening of new Transbay Terminal	Agency and CCSF	TJPA will forward guidance to Agency, CCSF Planning Department and DPW.

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Mitigation Measure	Responsibility for Implementation	Mitigation Schedule	Monitoring Responsibility	Monitoring Actions/Schedule
Ped 3 – Retime traffic light signalization. This could improve pedestrian levels of service at each of the intersections studies that fall into LOS F.	CCSF	Prior to opening of new Transbay Terminal	CCSF	TJPA will forward guidance to CCSF DPT.
Ped 4 – Provide crosswalk signalization at intersections where they do not exist already, such as Folsom and Beale streets.	CCSF	Prior to opening of new Transbay Terminal	CCSF	TJPA will forward guidance to CCSF DPT.
Ped 5 – Provide cross-walk count-down signals at intersections and cross-walks immediately surrounding the new Transbay Terminal.	CCSF	Prior to opening of new Transbay Terminal	CCSF	TJPA will forward guidance to CCSF DPT.
Ped 6 – Ensure that Transbay Terminal design increases corner and sidewalk widths at the four intersections immediately surrounding the Transbay Terminal.	TJPA and CCSF, DPW	During Transbay Terminal design phase	TJPA	TJPA and CCSF DPW, where applicable, to include sidewalk width expansion during preliminary and final design of new Transbay Terminal.
Ped 7 – Provide lights within crosswalks to warn when pedestrians are present in the crosswalk, such as at the cross-walk associated with the mid-block bus loading area.	TJPA	Prior to opening of new Transbay Terminal	TJPA	TJPA to work with CCSF DPT to install cross-walk warnings.
Pre-Construction Activities				
PC 1 – Complete a pre-construction building structural survey to determine the integrity of existing buildings adjacent to and over the proposed Caltrain Downtown Extension. Use this survey to finalize detailed construction techniques along the alignment and as the baseline for monitoring construction impacts during and following construction.	TJPA	Prior to preliminary engineering, final design and construction	TJPA	TJPA to perform building surveys during preliminary engineering. TJPA to include measures to protect existing buildings in final

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Mitigation Measure	Responsibility for Implementation	Mitigation Schedule	Monitoring Responsibility	Monitoring Actions/Schedule
				design and construction documents. TJPA to review design submittals, contract documents and construction activities to ensure implementation.
PC 2 – Contact and interview individual businesses along the Caltrain Downtown Extension alignment to gather information and develop an understanding of how these businesses carry out their work. This survey will identify business usage, delivery/shipping patterns, and critical times of the day or year for business activities. Use this information to assist in: (a) the identification of possible techniques during construction to maintain critical business activities, (b) analyze alternative access routes for customers and deliveries to businesses, (c) develop traffic control and detour plans, and (d) finalize construction practices. (TJPA)	TJPA	During preliminary engineering, final design and construction	TJPA	TJPA to perform business activity survey during preliminary engineering. TJPA to include measures to maintain business activities and access in final design and construction documents. TJPA to review design submittals, contract documents and construction activities to ensure implementation.
PC 3 – Complete detailed geotechnical investigation, including additional sampling (drilling and core samples) and analyses of subsurface soil/rock conditions. Use this information to design the excavation and its support system to be used in the retained cut, cut-and-cover, and tunnel portions of the Caltrain Downtown Extension.	TJPA	During preliminary engineering and final design	TJPA	TJPA to obtain necessary permits from CCSF prior to performing drilling. TJPA to perform detailed geotechnical investigation during preliminary engineering. TJPA to review design submittals, contract

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Mitigation Measure	Responsibility for Implementation	Mitigation Schedule	Monitoring Responsibility	Monitoring Actions/Schedule
				documents and construction activities to ensure proper utilization of information obtained during investigation.
PC 4 – Establish community construction information/outreach program to provide on-going dialogue between the TJPA and the affected community regarding construction impacts and possible mitigation/solutions. Include dedicated personnel for an outreach office in the construction area to deal with construction coordination.	TJPA	During construction	TJPA	TJPA to establish program during final design prior to construction.
PC 5 – Establish site and field offices located along the Caltrain Downtown Extension alignment. Field office staff, in conjunction with other staff, will: • Provide the community and businesses with a physical location where information pertaining to construction can be exchanged, • Enable TJPA and JPB to better understand community/business needs during the construction period, • Allow TJPA and JPB to participate in local events in an effort to promote public awareness of the project, • Manage construction-related matters pertaining to the public, • Notify property owners, residences, and businesses of major construction activities (e.g., utility relocation/disruption and milestones, re-routing of delivery trucks), • Provide literature to the public and press, • Promote and provide presentations on the project via a Speakers Bureau, • Respond to phone inquiries, • Coordinate business outreach programs, • Schedule promotional displays, and • Participate in community committees.	TJPA and JPB	During construction	TJPA	TJPA to establish program during final design and continue during construction.

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PC 6 – Implement an information phone line to provide community members and businesses the opportunity to express their views regarding construction. Review calls received and, as appropriate, forward the message to the necessary party for action (e.g., utility company, fire department, the Resident Engineer in charge of construction operations). Information available from the telephone line will include current project schedule, dates for upcoming community meetings, notice of construction impacts, individual problem solving, construction complaints and general information. Phone service would be provided in English, Cantonese, and Spanish and would be operated on a 24-hour basis.	TJPA	During construction	TJPA	TJPA to establish informational "Hot Line" during final design and continue during construction.
PC 7 – Develop traffic management plans. Traffic management plans to maintain access to all businesses will be prepared for areas affected by surface or cut-and-cover construction. In addition, daily cleaning of work areas would be performed by contractors for the duration of the construction period. Provisions would be contained in construction contracts to require the maintenance of driveway access to businesses to the extent feasible.	TJPA	During preliminary engineering, final design and construction	TJPA	TJPA to forward traffic management plans to CCSF DPT for review and approval. Include all requirements in construction documents and inspect implementation during construction.
New-MM-C-BR-1.1 – *Require Pre-Construction Bird Surveys*. Pre-construction bird surveys shall be required when trees or buildings and/or structures with potential nesting habitat would be disturbed as part of an individual project component. Pre-construction bird surveys shall be conducted on affected potential nesting habitat by a qualified biologist during the nesting season (February 1 through August 15) if construction activities are scheduled to take place during that period. Surveys shall be performed not more than 2 weeks prior to construction in an affected area. If special-status bird or migratory bird species are not found, work may proceed and no further mitigation action is required. If special-status bird or migratory bird species are found to be nesting in or near any work area (at a distance to be determined by a qualified biologist) or, for compliance with federal and state law concerning migratory birds, if birds protected under the federal MBTA or the California Fish and Game Code are found to be nesting in or near any work area, an appropriate no-work buffer zone	TJPA	Before construction	TJPA	Include provisions in contract documents to perform surveys and to comply with requirements for consultation and measures to protect nesting birds.

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(e.g., 100 feet for songbirds, 250 feet for raptors) shall be designated by the biologist. Depending on the species involved, the qualified biologist may require input from CDFW and/or the USFWS Division of Migratory Bird Management regarding the most appropriate ways to avoid disturbance to nesting birds. As recommended by the biologist, no activities shall be conducted within the no-work buffer zone that could harass birds or disrupt bird nesting. Outside of the nesting season (August 16 through January 31), or after young birds have fledged, as determined by the biologist, work activities may proceed. Birds that establish nests during the construction period are considered habituated to such activity, and no buffer shall be required, except as needed to avoid direct destruction of the nest, which shall be prohibited.				
General Construction Measures				
GC 1 – Disseminate information to community in a timely manner regarding anticipated construction activities.	TJPA	During construction	TJPA	TJPA to initiate program during final design and continue during construction.
GC 2 – Provide signage. Work with establishments affected by construction activities to develop appropriate signage for display that directs both pedestrian and vehicular traffic to businesses via alternate routes.	TJPA	Prior to and during construction	TJPA	TJPA to initiate signage program during final design and monitor contractors' installation during construction.
GC 3 – Install level deck. Install decking at the cut-and-cover sections to be flush with the existing street or sidewalk levels.	TJPA	During construction	TJPA	TJPA to design flush decking during preliminary and final design, include in construction documents and ensure installation during construction.

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Mitigation Measure	Responsibility for Implementation	Mitigation Schedule	Monitoring Responsibility	Monitoring Actions/Schedule
GC 4 – Provide for efficient sidewalk design and maintenance. Wherever feasible, maintain sidewalks at the existing width during construction. Where a sidewalk must be temporarily narrowed during construction (e.g., deck installation), restore it to its original width during the majority of construction period. (In some places, this may require placing the temporary sidewalk on the deck.) Each sidewalk design should be of good quality and approved by the Resident Engineer prior to construction. Handicapped access will be maintained during construction where feasible.	TJPA	During preliminary engineering and construction	TJPA	TJPA to work with CCSF DPW on design of sidewalk plans during preliminary and final design and ensure installation during construction.
GC 5 – Provide construction site fencing of good quality, capable of supporting the accidental application of the weight of an adult without collapse or major deformation. Where covered walkways or other solid surface fencing is installed, establish a program to allow for art work (e.g., by local students) on the surface(s).	TJPA	During design and construction	TJPA	TJPA to work with CCSF DPW, incorporate requirements in construction documents and inspect installation during construction.
Air Emissions – Construction				
AC 1 – Assure that, as part of the contract provisions, the project contractor is required to implement the measures below at all project construction sites.	TJPA	During development of contract documents	TJPA	Include requirement in contract documents.
AC 2 – Water all active construction areas at least twice daily. Ordinance 175-91, passed by the San Francisco Board of Supervisors on May 6, 1991, requires that non-potable water be used for dust control activities; therefore, the project contractor would be required to obtain reclaimed water from the City's Clean Water Program or other appropriate sources.	TJPA	During construction	TJPA	Include requirements in contract documents and monitor construction activities to ensure compliance.
AC 3 – Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard.	TJPA	During construction	TJPA	Include requirements in contract documents and monitor construction activities to ensure compliance.

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Mitigation Measure	Responsibility for Implementation	Mitigation Schedule	Monitoring Responsibility	Monitoring Actions/Schedule
AC 4 – Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites.	TJPA	During construction	TJPA	Include requirements in contract documents and monitor construction activities to ensure compliance.
AC 5 – Sweep daily (with water sweepers) all paved access roads, parking areas and staging areas at construction sites.	TJPA	During construction	TJPA	Include requirements in contract documents and monitor construction activities to ensure compliance.
AC 6 – Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.	TJPA	During construction	TJPA	Include requirements in contract documents and monitor construction activities to ensure compliance.
AC 7 – Install sandbags or other erosion control measures to prevent silt runoff to public roadways.	TJPA	During construction	TJPA	Include requirements in contract documents and monitor construction activities to ensure compliance.
AC 8 – Replant vegetation in disturbed areas as quickly as possible.	TJPA	During construction	TJPA	Include requirements in contract documents and monitor construction activities to ensure compliance.
AC 9 – Minimize use of on-site diesel construction equipment, particularly unnecessary idling.	TJPA	During construction	TJPA	Include requirements in contract documents and monitor construction activities to ensure compliance.

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Mitigation Measure	Responsibility for Implementation	Mitigation Schedule	Monitoring Responsibility	Monitoring Actions/Schedule
AC 10 – Shut off construction equipment to reduce idling when not in direct use.	TJPA	During construction	TJPA	Include requirements in contract documents and monitor construction activities to ensure compliance.
AC 11 – Where feasible, replace diesel equipment with electrically powered machinery.	TJPA	During construction	TJPA	Include requirements in contract documents and monitor construction activities to ensure compliance.
AC 12 – Locate diesel engines, motors, or equipment as far away as possible from existing residential areas.	TJPA	During construction	TJPA	Include requirements in contract documents and monitor construction activities to ensure compliance.
AC 13 – Properly tune and maintain all diesel power equipment.	TJPA	During construction	TJPA	Include requirements in contract documents and monitor construction activities to ensure compliance.
AC 14 – Suspend grading operations during first and second stage smog alerts, and during high winds, i.e., greater than 25 miles per hour.	TJPA	During and following construction	TJPA	Include requirements in contract documents and monitor construction activities to ensure compliance.
AC 15 – Upon completion of the construction phase, buildings with visible signs of dirt and debris from the construction site shall be power washed and/or painted (given that permission is obtained from the property owner to gain access to and wash the property with no fee charged by the owner).	TJPA	During construction	TJPA	Include requirements in contract documents and monitor construction activities to ensure compliance.

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Mitigation Measure	Responsibility for Implementation	Mitigation Schedule	Monitoring Responsibility	Monitoring Actions/Schedule
New-MM-C-AQ-5.1 – *Prepare and Implement an Emissions Plan*. The TJPA shall comply with the following measures to reduce construction emissions: A. *Construction Emissions Minimization Plan*. Prior to issuance of a construction permit, the TJPA shall prepare a Construction Emissions Minimization Plan (Emissions Plan) detailing project compliance with the following requirements: 1. All off-road equipment greater than 25 horsepower and operating for more than 20 total hours over the entire duration of construction activities shall meet the following requirements: a. Where alternative sources of power are available, portable diesel engines shall be prohibited. b. All off-road equipment shall have the following: i. engines that meet or exceed either EPA or CARB Tier 2 off-road emissions standards, and ii. engines that are retrofitted with a CARB Level 3 Verified Diesel Emissions Control Strategy (VDECS). c. Exceptions: i. Exceptions to A(1)(a) may be granted if the TJPA has evidence that an alternative source of power is limited or infeasible at the project site, and that the requirements of this exception provision apply. Under this circumstance, the TJPA shall prepare the documentation indicating compliance with A(1)(b) for on-site power generation. ii. Exceptions to A(1)(b)(ii) may be granted if the TJPA has evidence that a particular piece of off-road equipment with an CARB Level 3 VDECS is (1) technically not feasible, (2) would not produce desired emissions reductions due to expected operating modes, (3) installing the control device would create a safety hazard or impaired visibility for the operator, or (4) there is a compelling emergency need to use off-road equipment that are not retrofitted with a CARB Level 3 VDECS.	TJPA	Before and during construction	TJPA	Prepare Construction Emissions Minimization Plan. Prior to construction, include provisions in contract documents requiring preparation of emissions plan, reporting requirements, and certification that measures from the emissions plan have been incorporated. Monitor construction activities to ensure compliance and prepare monthly reports and final report within 6 months of completion of construction.

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iii. If an exception is made pursuant to (A)(1)(c)(ii), the TJPA shall provide the next cleanest piece of off-road equipment, as provided by the step-down schedule below).

If the requirements of (A)(1)(b) cannot be met, then the TJPA shall meet Compliance Alternative 1. If the TJPA is not able to supply off-road equipment meeting Compliance Alternative 1, then Compliance Alternative 2 shall be met. If the TJPA is not able to supply off-road equipment meeting Compliance Alternative 2, then Compliance Alternative 3 shall be met.

Off-Road Equipment Compliance Step-Down Schedule

Compliance Alternative	Engine Emissions Standard	Emissions Control
1	Tier 2	CARB Level 2 VDECS
2	Tier 2	CARB Level 1 VDECS
3	Tier 2	Alternative Fuel (Not a VDEC)

Notes:
CARB = California Air Resources Board; VDECS = Verified Diesel Emissions Control Strategy
Source: data compiled by AECOM in 2014

2. The TJPA shall require idling times for off-road and on-road equipment to be limited to no more than 2 minutes, except as provided in exceptions to the applicable state regulations regarding idling for off-road and on-road equipment. Legible and visible signs shall be posted in multiple languages (English, Spanish, Chinese) in designated queuing areas and at the construction site to remind operators of the 2-minute idling limit.
3. The TJPA shall require that construction operators properly maintain and tune equipment in accordance with manufacturer specifications.

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4. The Emissions Plan shall include estimates of the construction timeline by phase, with a description of each piece of off-road equipment required for every construction phase. Off-road equipment descriptions and information shall include equipment type, equipment manufacturer, equipment identification number, engine model year, engine certification (Tier rating), horsepower, engine serial number, expected fuel usage, and hours of operation. For VDECS-installed equipment, reporting shall indicate technology type, serial number, make, model, manufacturer, CARB verification number level, installation date, and hour meter reading on installation date. For off-road equipment using alternative fuels, reporting shall indicate the type of alternative fuel being used.				
5. The Emissions Plan shall be kept on-site and be available for review by any persons requesting it. A legible sign shall be posted at the perimeter of the construction site indicating to the public the basic requirements of the Emissions Plan and a way to request a copy of the plan. The TJPA shall provide copies of the Emissions Plan to members of the public as requested.				
B. *Reporting*. Monthly reports shall be prepared to indicate the construction phase and off-road equipment information used during each phase, including the information required in A(4). In addition, for off-road equipment using alternative fuels, reporting shall include the actual amount of alternative fuel used.				
1. Within 6 months of completion of construction activities, the TJPA shall prepare a final report summarizing construction activities. The final report shall indicate the start and end dates and duration of each construction phase. For each phase, the report shall include detailed information required in A(4). In addition, for off-road equipment using alternative fuels, reporting shall include the actual amount of alternative fuel used.				
C. *Certification Statement and On-Site Requirements.* Prior to the commencement of construction activities, the TJPA shall certify (1) compliance with the Emissions Plan and (2) all that applicable requirements of the Emissions Plan have been incorporated into contract specifications.				

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Mitigation Measure	Responsibility for Implementation	Mitigation Schedule	Monitoring Responsibility	Monitoring Actions/Schedule
Air Emissions – Operations				
New-MM-AQ-3.1 – *Equip Diesel Generators with Applicable Tiered Emissions Standards.* All diesel generators shall have engines that meet Tier 4 Final or Tier 4 Interim emissions standards or meet Tier 2 emissions standards and are equipped with a CARB Level 3 Verified Diesel Emissions Control Strategy.	TJPA	During development of contract documents and during construction	TJPA	Prior to construction, include provisions in contract documents regarding diesel generator air emissions specifications. Monitor construction activities to ensure compliance.
New-MM-AQ-3.2 – *Require and Implement Ventilation Plans for Proposed Residential Land Development*. For residential development on the intercity bus facility or ventilation structure sites, the project sponsor shall comply with the following measures: A. *Air Filtration and Ventilation Requirements.* Prior to receipt of any residential building permit, the project sponsor shall submit a ventilation plan for the proposed building(s). The ventilation plan shall show that the building ventilation system removes at least 80 percent of the outdoor PM2.5 concentrations from habitable areas and be designed by an engineer certified by the ASHRAE. The engineer shall provide a written report documenting that the system meets the 80 percent performance standard identified in this measure and offers the best available technology to minimize outdoor-to-indoor transmission of air pollution. B. *Maintenance Plan.* Prior to receipt of any building permit, the project sponsor shall present a plan that ensures ongoing maintenance for the ventilation and filtration systems. C. *Disclosure to Buyers and Renters.* The project sponsor shall ensure disclosure to buyers and/or renters that the building is located in an area with existing sources of air pollution and that the building includes an air filtration and ventilation system designed to remove 80 percent of outdoor particulate matter. Occupants shall be informed of the proper use of the installed air filtration system.	TJPA	Prior to acquisition of building permits, prior to renting or selling buildings	TJPA	Prior to sale or lease of surplus property, include provisions in sale or lease documents that any future residential development will need to prepare and implement ventilation and filtration plans and systems.

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Mitigation Measure	Responsibility for Implementation	Mitigation Schedule	Monitoring Responsibility	Monitoring Actions/Schedule
Visual/Aesthetics – Construction				
VA 1 – Assure that construction crews working at night direct any artificial lighting onto the work site in order to minimize "spill over" light or glare effects on adjacent areas.	TJPA	During construction	TJPA	Include requirements in contract documents and monitor construction activities to ensure compliance.
VA 2 – Assure that contractors make all efforts possible to minimize specific aesthetic and visual effects of construction identified by neighborhood businesses and residents.	TJPA	During construction	TJPA	Include requirements in contract documents and monitor construction activities to ensure compliance.
Transportation				
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 track~~s~~ to evaluate traffic operations along Mission Bay Drive at ~~16th Street at~~ Seventh~~/Mississippi~~ Street, the Caltrain MOW/turnback track, and Berry~~Owens~~ 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 analysis~~so the resulting v/c ratio is no greater than 10~~	TJPA and Caltrain	Proposal by Caltrain to change its service and operation plan to use the MOW or turnback track during the AM/PM peak hours	TJPA	TJPA and Caltrain to conduct traffic and train operations analysis to identify signal operations and feasible intersection design improvements, which shall be implemented if necessary to achieve the performance standard.

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Mitigation Measure	Responsibility for Implementation	Mitigation Schedule	Monitoring Responsibility	Monitoring Actions/Schedule
~~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 this~~ese~~ crossing~~s~~ 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~~	~~TJPA~~	~~During final design~~	~~TJPA~~	~~TJPA to work with CCSF, Caltrain, and CPUC on signal operations and intersection design during final design and ensure installation during construction.~~

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Mitigation Measure	Responsibility for Implementation	Mitigation Schedule	Monitoring Responsibility	Monitoring Actions/Schedule
~~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.~~				
Water Resources and Water Quality				
New-MM-WQ-4.1 – *Modify DTX Design Criteria to Avoid Flood Hazards*. The TJPA shall modify the DTX Design Criteria to protect project elements from flood hazards. Specifically, the TJPA shall design and construct Transbay Program Phase 2 within the area delineated as being within a 100-year floodplain to prevent inundation of the project rail alignment and associated infrastructure and	TJPA	During final design	TJPA	Modify DTX design criteria and ensure measures to avoid flood hazards are

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Mitigation Measure	Responsibility for Implementation	Mitigation Schedule	Monitoring Responsibility	Monitoring Actions/Schedule
to remain operational for the predicted flood level. Changes to the current DTX Design Criteria will include designing station entrances and other points of access to below-ground portions of the DTX system to maintain sufficient freeboard above the 100-year base flood elevation to protect the rail facilities and the public from 100-year storm water entering the stations and the tunnel. Changes to the design criteria will be completed prior to the next phase of design so that these standards can be incorporated into the 30 percent Preliminary Engineering design for DTX. In updating project designs to meet the modified DTX Design Criteria, the TJPA shall consider the cost-benefit of flood-proofing measures and designs which do not preclude other measures that may be more practicable and effective when the future flood risks become more evident. Because implementation of the proposed project would occur at a future date, the TJPA shall amend and update the DTX Design Criteria to incorporate new information related to San Francisco's FEMA FIRM or climate-informed science predictions and mapping of sea-level rise.				incorporated into construction documents.
New-MM-CU-WQ-9.1 – *Prepare a Sea-Level Rise Adaptation Plan.* Based on the vulnerabilities identified from inundation maps of year 2100 sea-level rise, the TJPA will prepare a Sea-Level Rise Adaptation Plan identifying measures that will be taken to protect the new project facilities as well as the existing TJPA facilities from potential damage due to future flooding from sea-level rise. The TJPA will coordinate with other entities with facilities close to the San Francisco Bay with an equal or greater sea-level rise vulnerability, such as the City and County of San Francisco, San Francisco Bay Conservation and Development Commission, the Port of San Francisco, BART, the California Department of Transportation, and the San Francisco Municipal Transportation Agency.	TJPA	During final design	TJPA	Prepare Sea-Level Rise Adaptation Plan, and discuss results and potential actions with other agencies that have facilities in the City that may be similarly affected.

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Specifically, the TJPA shall design its infrastructure system and buildings so that they remain resilient and adaptable over time. The strategies to implement such protection will evolve from the ongoing sessions with other local jurisdictions and agencies, and the performance standard to be achieved will protect the proposed project from the sea-level rise depths projected by the City for the year 2100. It is recognized that the projected flood depths may be refined over time and that new regional and citywide strategies to address sea-level rise will be identified. To the extent feasible, the TJPA shall amend and update its Adaptation Plan and the performance standard to incorporate this new information. The TJPA shall complete the first Sea-Level Rise Adaptation Plan as part of DTX final design. The Plan shall include the following: • Review of available scientific information on sea-level rise data and projections for the subsequent 50 years. Where data and projections indicate different rates of sea-level rise than previously applied, the TJPA will adjust the proposed project's vulnerability assessment and flood design criteria to reflect a median-point of then-current projections. • Improvements will meet the flood design criteria as feasible and unconstrained by surrounding development not owned by the TJPA. • The plan may also rely on flood improvements implemented separately by agencies other than the TJPA, but that will also provide flood risk protection benefits for Transbay Program Phase 2 facilities. • Opportunities for partnership with other local and regional parties for sea-level rise adaptation or where regional efforts will address flooding risks to TJPA facilities. Consideration of the cost-benefit of flood-proofing measures and designs that do not preclude other measures that may be more practicable and effective when the future flood risks become more evident. • Where the TJPA's adaptation options are constrained because of adjacent infrastructure (such as adjacent roadways and structures not owned by the TJPA), the TJPA will work with adjacent landowners and infrastructure				

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Mitigation Measure	Responsibility for Implementation	Mitigation Schedule	Monitoring Responsibility	Monitoring Actions/Schedule
managers to identify opportunities to improve rail system protection in cooperation with other local or regional parties.				
Electromagnetic Fields				
New-MM-EF-1.1 – *Evaluate EMI Effects on Nearby Medical Facilities during Final Design of the Additional Trackwork South of the Caltrain Railyard*. During final design, the TJPA shall conduct a site-specific electromagnetic interference (EMI) analysis, based on the OCS alignment, to determine the extent, if any, of disturbance to sensitive electric equipment from the addition of the turnback track, which would be aligned closer to medical and research facilities, such as the University of California San Francisco campus on the east side of the Caltrain right-of-way. If EMI levels result in disturbance to sensitive electric equipment, the TJPA will be responsible for costs related to evaluate, design, monitor, and remediate project-related EMI disruption. More specifically, the following steps will be followed as part of this mitigation measure: • During final design, the TJPA shall evaluate the specific EMI levels associated with the turnback track at the identified sensitive facilities and determine the appropriate controls necessary to avoid disruption of sensitive equipment prior to testing and commissioning of the proposed project. • During the testing and commissioning period for the proposed project, EMI levels shall be measured and the TJPA shall coordinate with the identified sensitive facilities to evaluate whether substantial EMI effects are occurring due to system operations. Where substantial EMI effects are detected that disrupt operations of the sensitive electric equipment, the TJPA shall remedy the disruption prior to commissioning of electrified operations through EMF controls and/or shall provide shielding of the sensitive equipment. • After commissioning of the proposed project, EMI levels shall be monitored during the first year of project operation and reporting of the results shall be shared with any identified sensitive facilities. Identified disruption of sensitive electric equipment during this period shall be immediately remedied through additional modifications to EMF-generating equipment along the turnback track and/or additional shielding of the sensitive electric equipment.	TJPA	During final design, during the testing and commissioning period, after commissioning through first year of operation	TJPA	Conduct EMI analysis to determine appropriate design modifications if necessary. Measure EMI levels during testing and commissioning period and for the first year of project operation. Include provisions in contract documents to comply with requirements for consultation and measures to avoid electromagnetic effects.

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EMI can be reduced at the project level through designs that minimize arcing and radiation of radiofrequency energy. Additional mitigation by shielding of sources is not always practical, but susceptibility to EMI can be reduced by choosing devices designed for a high degree of electromagnetic compatibility. The following strategies will be considered, as appropriate by the TJPA, in identifying feasible and effective mitigation for nearby medical electronic equipment: • passive engineering controls (e.g., shielding with metallic materials at the medical facility where excessive EMI levels are projected); • partial cancellation of magnetic field with a wire loop, in which an induced current creates a magnetic field of opposite direction; • active shielding, that requires a power supply and feedback loop to control the induced current and magnetic field direction and magnitude; and • design modifications to place EMF from the OCS further away or higher up.				
Environmental Commitments Included as Part of the Project (Avoidance Measures)				
1. Modify as necessary the overhead catenary system of the Electronic Trolley Bus and Caltrain at the 16th Street crossing.	TJPA	During final design	TJPA	In cooperation with the Peninsula Corridor Joint Powers Board and SFMTA, identify the necessary technical changes to the overhead catenary system and provide the appropriate funding to implement the necessary changes.
2. Mitigate construction-related effects to the Caltrain station at Fourth and King and on the existing Caltrain support facilities, including administration and storage buildings, bike storage, employee parking, and crew facilities.	TJPA	During final design	TJPA	Identify necessary mitigation actions with Caltrain and provide funding to implement identified actions.

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Mitigation Measure	Responsibility for Implementation	Mitigation Schedule	Monitoring Responsibility	Monitoring Actions/Schedule
3. Coordinate with SFMTA and enter into a Memorandum of Understanding (MOU), or similar agreement, to avoid impacts to the Muni T-Line (including the Central Subway project) during DTX construction. The MOU would identify construction phasing, sequencing, and timing that work for both agencies and minimize both delays to construction of the DTX, including the underground station at Fourth and Townsend, and disruption to T-Line operations.	TJPA	During final design	TJPA	Identify the phasing, sequencing, and timing for construction that works for both TJPA and SFMTA, and minimizes both delays to construction of the underground station and disruption to T-Line operations.
4. Design the ventilation structures with City input and in accordance with context sensitive design guidelines, which seek to preserve and enhance, to the extent feasible, scenic, aesthetic, historic, community, and environmental resources, while improving or maintaining safety, mobility, and infrastructure.	TJPA	During final design	TJPA	Coordinate with the San Francisco Planning Department to design the appearance of the vent structures to be visually compatible with the surrounding built environment and, where appropriate, to follow accepted preservation guidelines for context-sensitive infill development in historic districts.

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Mitigation Measure	Responsibility for Implementation	Mitigation Schedule	Monitoring Responsibility	Monitoring Actions/Schedule
5. 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~~.	TJPA	After construction	TJPA	The monitoring events and their timing are specified in the improvement measure. A report will be submitted to the city after each monitoring event, per the schedule identified in the improvement measure.

Appendix B
New Potentially Occurring Listed Species in the Project Vicinity since 2014

Scientific Name	Common Name	Federal Status	State Status	Habitats	Reason for Absence in Project Area
Insects					
Bombus caliginosus	obscure bumble bee	None	None	Reclusive, ground nesting bees that are found from California to British Columbia on the Pacific coast. Range is restricted to the coastal fog belt.	No suitable habitat
Bombus occidentalis	western bumble bee	None	None	Western bumble bees are a generalist forger with a formerly diverse range of habitat. The western bumble bee's historic range was from Northern California up the west coast through Canada and into Alaska and as far east as southern Saskatchewan. It's current range has been declining since 1998, and may be restricted to Alaska and east of the Cascades in the Canadian and US Rocky Mountains.	No suitable habitat
Icaricia icarioides missionensis	Mission blue butterfly	Endangered	None	Coastal chaparral and grasslands. Host plants include *Lupinus albifrons, L. variicolor,* and *L. formosus* , of which *L. albifrons* is favored.	No suitable habitat (no host plants)
Icaricia icarioides pheres	Pheres blue butterfly	None	None	Subspecies of Boisduval butterfly, specific to West Coast. Generalist habitat, but specialized feeder and host plant on *Lupinus* plants only.	No suitable habitat (no host plants)
Reptiles					
Phrynosoma blainvillii	coast horned lizard	None	None	Sandy loam areas and on alkali flats. Areas with an exposed gravelly-sandy substrate containing scattered shrubs, clearings in riparian woodlands, dry uniform chamise chaparral, and annual grassland with scattered perennial seepweed or saltbush.	No suitable habitat
Amphibians					
Dicamptodon ensatus	California giant salamander	None	None	Found in wet coastal forests in and near cold, clear permanent streams and seepages. Reproduction is aquatic; larvae and young stay in water for 18-24 months. Adults found in or within 50 meters of a stream.	No suitable habitat
Birds					
Accipiter cooperii	Cooper's hawk	None	None	Male establishes a territory of 1-2 miles in patchy deciduous and coniferous woods. White pine stands are preferred. Nest sites are found on forest edges, near agricultural lands, fields, and forest clearings. They feed in open areas and woodlots away from the nest site. Also found around amongst cities.	Low potential to fly through project area
Accipiter gentilis	northern goshawk	None	None	Inhabits forested regions of the Northern Hemisphere. This goshawk prefers coniferous forests, but will also inhabit deciduous and mixed forests from sea level to subalpine areas. This bird may also be found in urban forested parks.	Low potential to fly through project area
Accipiter striatus	sharp-shinned hawk	None	None	Found in dense forests, hunting in the canopy, but will hunt in rural or suburban areas at bird feeders. Nest in dense canopy of forest, and re-use nests from year to year.	No suitable habitat

Aquila chrysaetos	golden eagle	None	None	Nests primarily on cliffs or tall trees. Forages in open country (e.g., annual grasslands).	Low potential to fly through project area
Ardea alba	great egret	None	None	Found in wooded swamps and wetlands, streams, lakes, ponds, and marshes. Nest in colonies in large trees.	No suitable habitat
Ardea herodias	great blue heron	None	None	Marsh, swamp, wetlands, and open fields. Commonly found on shore near shallow water.	No suitable habitat
Athene cunicularia	burrowing owl	None	None	Subterranean nester dependent upon burrowing mammals, specifically California ground squirrel. Open, dry annual or perennial grassland, deserts and scrublands characterized by low-growing vegetation for burrow sites.	No suitable habitat
Buteo regalis	ferruginous hawk	None	None	Inhabits open grasslands, low foothills and desert scrub; nests in trees, low cliffs, and other elevated structures. Eats mainly lagomorphs, and other small mammals; also birds, amphibians, and reptiles. No nesting records in California.	No suitable habitat
Buteo swainsoni	Swainson's hawk	None	Threatened	Breeds in riparian areas, juniper sage flats and oak savannah adjacent to foraging areas such as grasslands, alfalfa, and grain fields that support rodent populations. Migrates south during winter months.	No suitable habitat
Circus hudsonius	northern harrier	None	None	Nests in freshwater and saltwater marshes and grasslands; forages in grasslands, agricultural fields, and marshes.	No suitable habitat
Egretta thula	snowy egret	None	None	Found in coastal and inland wetlands, prefers shallow water inlets for feeding. Require 30 foot or taller trees for nesting. Nest in colonies or in colonies of other herons and egrets.	No suitable habitat
Elanus leucurus	white-tailed kite	None	None	Nests in dense oak, willow, or other tree stands near open grassland meadows, farmlands, and emergent wetlands.	No suitable habitat
Eremophila alpestris actia	California horned lark	None	None	Open grassland habitats of the Central Valley.	No suitable habitat (outside species normal range)
Falco columbarius	merlin	None	None	Widespread raptor, found at forest edges with open areas-wetlands, grasslands for hunting. Have adapted to urban areas, and hunt house sparrows.	Low potential to fly through project area
Falco mexicanus	prairie falcon	None	None	Nests on cliff ledges. Forages in open grasslands, dry plains, and other uplands.	No suitable habitat
Falco peregrinus anatum	American peregrine falcon	Delisted	Delisted	Forages in marshes and grasslands. Nesting habitat includes high, protected cliffs and ledges near water. Known to use roofs, ledges, or outcroppings of very tall buildings in cities.	Low potential to fly through project area
Haliaeetus leucocephalus	bald eagle	Delisted	Endangered	Large water bodies or rivers with abundant fish with adjacent snags or other perches.	Low potential to fly through project area
Hydroprogne caspia	Caspian tern	None	None	Found near large bodies of water-large lakes, coastal waters, and lagoons. Prefers protected waters to open sea. Nests on open ground on coast or on islands.	No suitable habitat

Melospiza melodia pusillula	Alameda song sparrow	None	None	Tidal marshes of the south and central San Francisco Bay. Nests in tall salt marsh vegetation and forages on exposed ground nearby.	No suitable habitat
Melospiza melodia samuelis	San Pablo song sparrow	None	None	Tidal marshes of San Pablo Bay. Nests in salt marsh vegetation and forages on exposed ground nearby.	No suitable habitat
Nycticorax nycticorax	black-crowned night heron	None	None	Found in wetlands across North America, require water and adjacent shrub/foliage cover to hide in.	No suitable habitat
Pandion haliaetus	osprey	None	None	Raptor with a diet of live fish, require open water with an abundant supply of fish. Nest on tall poles or tree snags out in the open.	Low potential to fly through project area
Pelecanus occidentalis californicus	California brown pelican	Delisted	Delisted	Nests on coastal islands lacking ground predators; roost on piers, buoys, and other structures on waterbodies near the coast.	No suitable habitat
Ptychoramphus aleuticus	Cassin's auklet	None	None	Marine waters, usually out of site of land. Breeds in colonies on Pacific islands.	No suitable habitat
Rallus obsoletus obsoletus	California Ridgway's rail	Endangered	Endangered	Salt-water and brackish water marshes traversed by tidal sloughs in the vicinity of San Francisco Bay. Associated with abundant growths of pickleweed (*Salicornia virginica*), but feeds away from cover on invertebrates from mud-bottomed sloughs.	No suitable habitat
Mollusks					
Anodonta californiensis	California floater	None	None	Mussel species found in fine sediment in lakes, reservoirs, and low gradient streams with still waters.	No suitable habitat
Anodonta oregonensis	Oregon floater	None	None	Mussel species typically found in Oregon and far Northern California. Found in fine sediment in lakes, reservoirs, and low gradient streams with still waters.	No suitable habitat (outside species normal range)
Gonidea angulata	western ridged mussel	None	None	Mussel species preferring constant water flow and clear water, streams with wide floodplains and sand and gravel bottoms.	No suitable habitat
Vespericola marinensis	Marin hesperian (snail)	None	None	Found in moist spots in coastal brush fields and chaparral vegetation in Marin County. Found under leaves of cow-parsnip, around spring seeps, in leaf mold along streams and in alder woods and mixed evergreen forest.	No suitable habitat
Fish					
Acipenser medirostris pop. 1	green sturgeon - southern DPS	Threatened	None	Rivers and estuaries. Spawning is believed to occur in the upper portions of the Sacramento River.	No suitable habitat
Eucyclogobius newberryi	tidewater goby	Endangered	None	Found primarily in waters of coastal lagoons, estuaries, and marshes. Brackish water in shallow lagoons and in lower stream reaches where the water is fairly still but not stagnant and has high oxygen levels.	No suitable habitat
Hypomesus transpacificus	Delta smelt	Threatened	Endangered	Euryhaline species, but for a large part of its life span, it is associated with the freshwater edge of the mixing zone (saltwater-freshwater interface). Spawning habitats are side channels and sloughs in the middle reaches of the Delta.	No suitable habitat

Oncorhynchus tshawytscha pop. 11	chinook salmon - Central Valley spring-run ESU	Threatened	Threatened	Spawning and juvenile rearing occurs in the Sacramento and San Joaquin Rivers and their tributaries. Also found in San Francisco Bay and coastal waters of California.	No suitable habitat
Oncorhynchus tshawytscha pop. 13	chinook salmon - Central Valley fall / late fall-run ESU	None	None	Populations occur in the Sacramento River and its tributaries, up to the Livingston Stone National Fish Hatchery (Shasta Dam). Also found in San Francisco Bay and coastal waters of California.	No suitable habitat
Mammals					
Corynorhinus townsendii	Townsend's big-eared bat	None	None	Mesic habitats, roosting in caves, mines, tunnels, and buildings.	No suitable habitat
Enhydra lutris nereis	southern sea otter	Threatened	None	Coastal waters within 1.2 miles of shore, especially shallows with kelp beds and abundant shellfish.	No suitable habitat
Erethizon dorsatum	North American porcupine	None	None	Native to the coniferous and mixed-forest habitats of Canada, the northeastern and western regions of the United States and northern Mexico. Besides forests, can also be found in grasslands, desert shrub communities and even tundra.	No suitable habitat
Eumetopias jubatus	Steller sea lion	Delisted	None	Forage near and off shore, and in both benthic and pelagic zones, may forage well off the continental shelf. Steller sea lions need undisturbed land habitat to rest, molt, socialize, mate, give birth, and nurse small pups during the breeding season.	No suitable habitat
Myotis yumanensis	Yuma myotis	None	None	Roosts in trees, buildings, caves, and rock crevices. Forages over open water and streams.	No suitable habitat
Sorex vagrans paludivagus	Monterey vagrant shrew	None	None	Optimal habitats are valley foothill and montane riparian, aspen, wet meadow, annual and perennial grasslands, and fresh and saline emergent wetlands. Also occurs in a variety of chaparral and wooded habitats.	No suitable habitat
Plants					
Arabis blepharophylla	coast rockcress	None	None	Endemic perennial herb found on rocky outcrops, bluffs and grassy slopes on the Pacific Coast at 55 to 300 meters elevation.	No suitable habitat
Aspidotis carlotta-halliae	Carlotta Hall's lace fern	None	None	Endemic fern found on serpentine slopes, crevices, and outcrops in foothill woodland or chaparral from 100 to 1,400 meters elevation.	No suitable habitat
Astragalus nuttal lii var. *nuttallii*	ocean bluff milk-vetch	None	None	Endemic herb found on rocky, sandy coastal areas, and bluffs along the Pacific Coast above 250 meters elevation.	No suitable habitat
Carex praticola	northern meadow sedge	None	None	Small sedge found in moist to wet meadows, riparian edges, and open forest from 500 to 3,200 meters elevation.	No suitable habitat
Castilleja ambigua var. *ambigua*	johnny-nip	None	None	Herb found in wetlands, wet coastal bluffs, and wet meadows above 500 meters elevation.	No suitable habitat
Cirsium hydrophilum var. *vaseyi*	Mt. Tamalpais thistle	None	None	Serpentinite seeps, broad-leafed upland forest, chaparral, and meadows and seeps from 792 to 2,046 feet elevation.	No suitable habitat
Equisetum palustre	marsh horsetail	None	None	Found in freshwater wetlands above 300 meters elevation.	No suitable habitat

Erysimum franciscanum	San Francisco wallflower	None	None	Coastal strand, northern coastal scrub; valley grassland; coastal dunes; affinity for serpentine soils.	No suitable habitat
Hosackia gracilis	harlequin lotus	None	None	Perennial herb found in wetlands, shores, meadows, and roadside ditches along the Pacific Coast above 700 meters elevation.	No suitable habitat
Hypogymnia schizidiata	island tube lichen	None	None	Requires old growth shrubs within four miles of the ocean.	No suitable habitat
Iris longipetala	coast iris	None	None	Perennial herb endemic to the California coast. Found in wetlands, moist coastal prairie or open coastal forest above 600 meters elevation.	No suitable habitat
Leptosiphon grandiflorus	large-flowered leptosiphon	None	None	Annual herb endemic to the Bay Area. Found near the coast in open grassy flats with sandy soil above 1200 meters elevation.	No suitable habitat
Leptosiphon latisectus	broad-lobed leptosiphon	None	None	Annual herb found in Northern California foothills, in open or partially shaded grassy slopes above 1500 meters elevation.	No suitable habitat
Micropus amphibolus	Mt. Diablo cottonweed	None	None	Annual herb endemic to California coast. Found in openings on slopes and ridges with shallow soils, or volcanic rock at 40 to 900 meters elevation.	No suitable habitat
Pentachaeta bellidiflora	white-rayed pentachaeta	Endangered	Endangered	Cismontane woodland, valley and foothill grassland (often serpentinite) from 115 to 2,045 feet elevation.	No suitable habitat
Plagiobothrys glaber	hairless popcornflower	None	None	Coastal salt marsh, wetland-riparian; salt marsh meadows.	No suitable habitat

San Francisco Peninsula Rail Program: Downtown Rail Extension (DTX)

Consider Recommending the Addendum to the Transbay Program 2018 Final Supplemental Environmental Impact Report and Revised Mitigation Monitoring and Reporting Program under the California Environmental Quality Act (CEQA), and Modifications to the Downtown Rail Extension Project Analyzed Therein

Executive Steering Committee
December 16, 2022

Caltrain

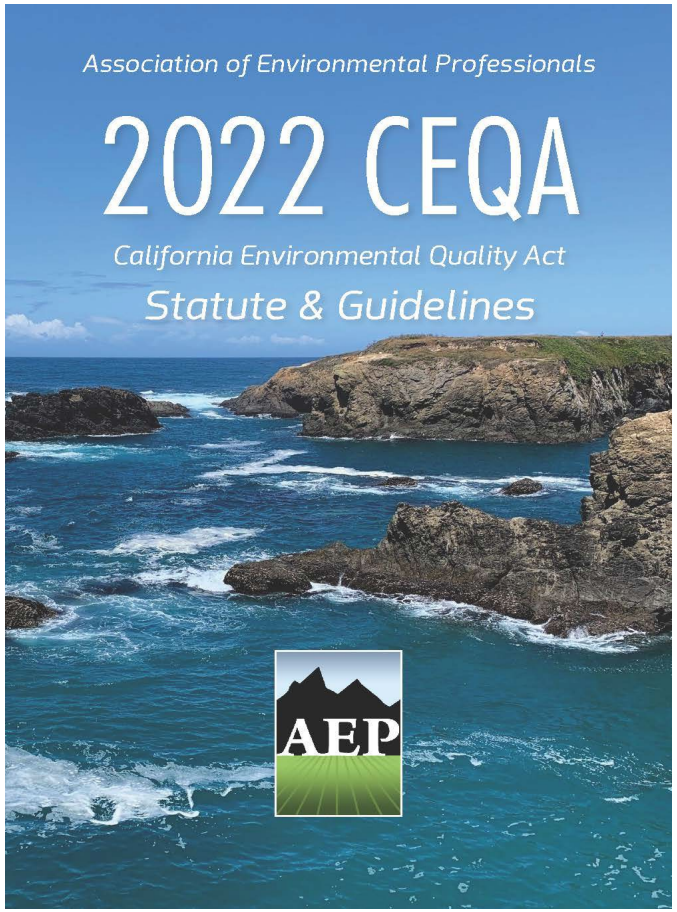
CALIFORNIA High-Speed Rail Authority

METROPOLITAN TRANSPORTATION COMMISSION

TJPA
TRANSBAY JOINT POWERS AUTHORITY

San Francisco County Transportation Authority

Basis for CEQA Addendum

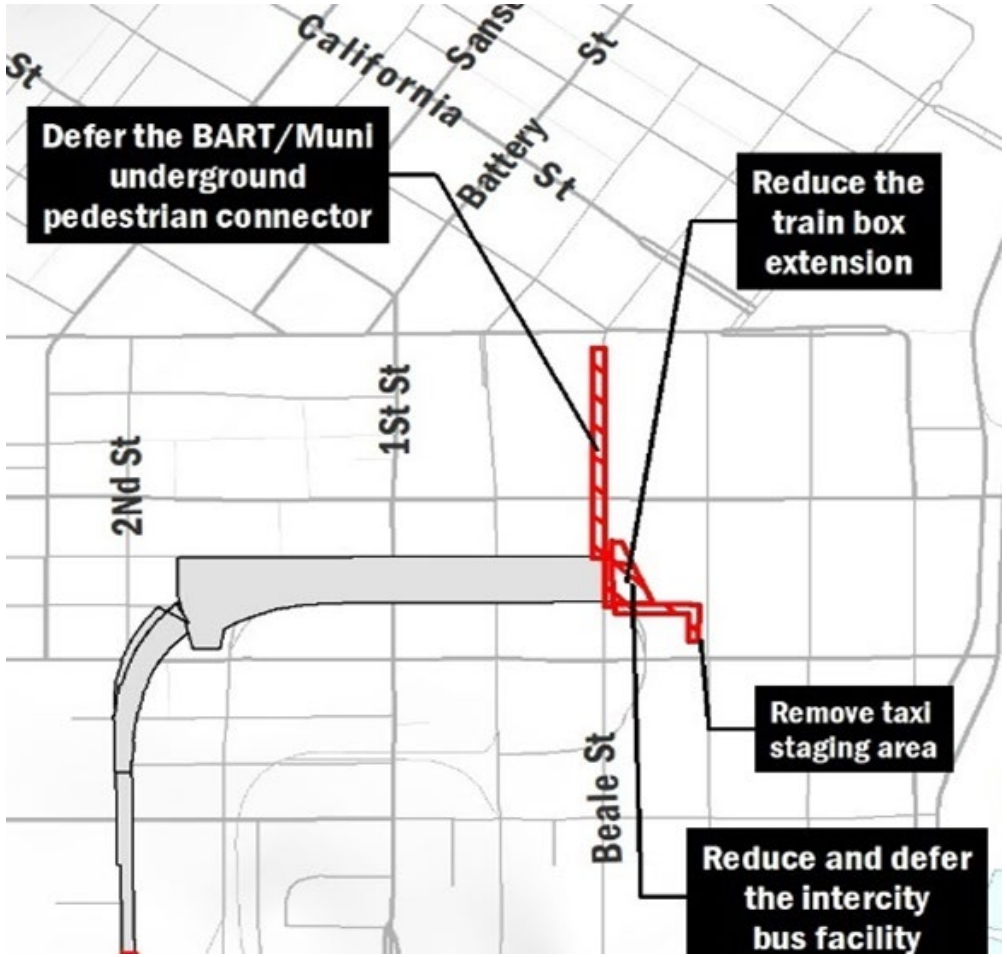


When is a CEQA Addendum appropriate?

Condition	Addendum fulfills CEQA if:
Project revisions	No new or substantially more severe significant impacts
New information or circumstances	No substantially important information or changes to circumstances under which the project is implemented that result in new or substantially more severe significant impacts
Mitigation measures or alternatives	No previously infeasible measure or alternative becomes feasible and substantially reduces significant impacts

Abstracted from State CEQA Guidelines Section 15162(a)

Revised Project Components – Area #1: Transit Center



- **DEFERRAL** of the implementation of the underground pedestrian connector and intercity bus facility
- **REMOVAL** of taxi staging area and “adjacent land development” at intercity bus facility
- **REDUCTION** of extended train box and relocation of vent structure and entry/exit

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Revised Project Components – Area #2: Mined Tunnel Segment

- **REDUCTION** in trackwork portion of tunnel from three to two tracks, enabling smaller tunnel and fewer underground easements for the rock dowels that extend from the tunnel

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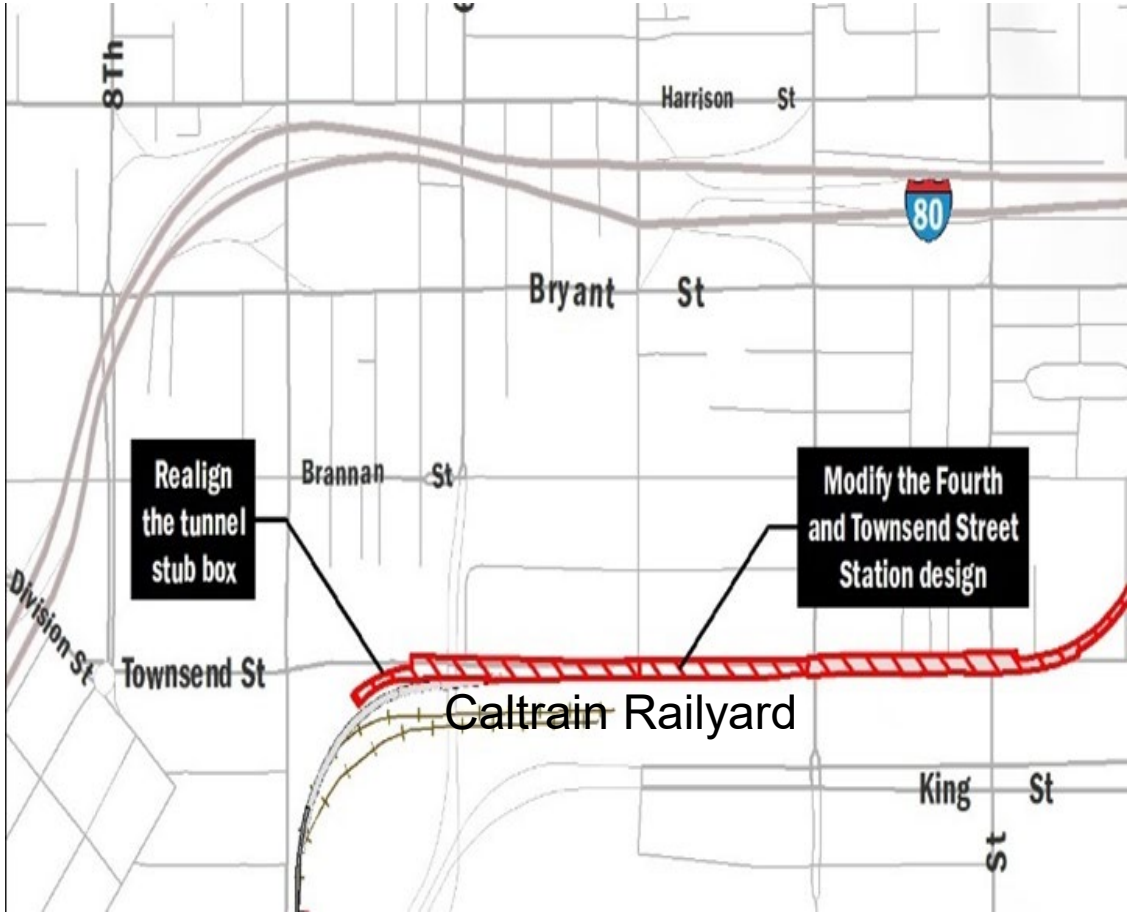
Revised Project Components – Area #3: Caltrain Railyard



- **EXPANDED** footprint of Fourth and Townsend Street Station
- **REDUCED** length and excavation for the tunnel stub box

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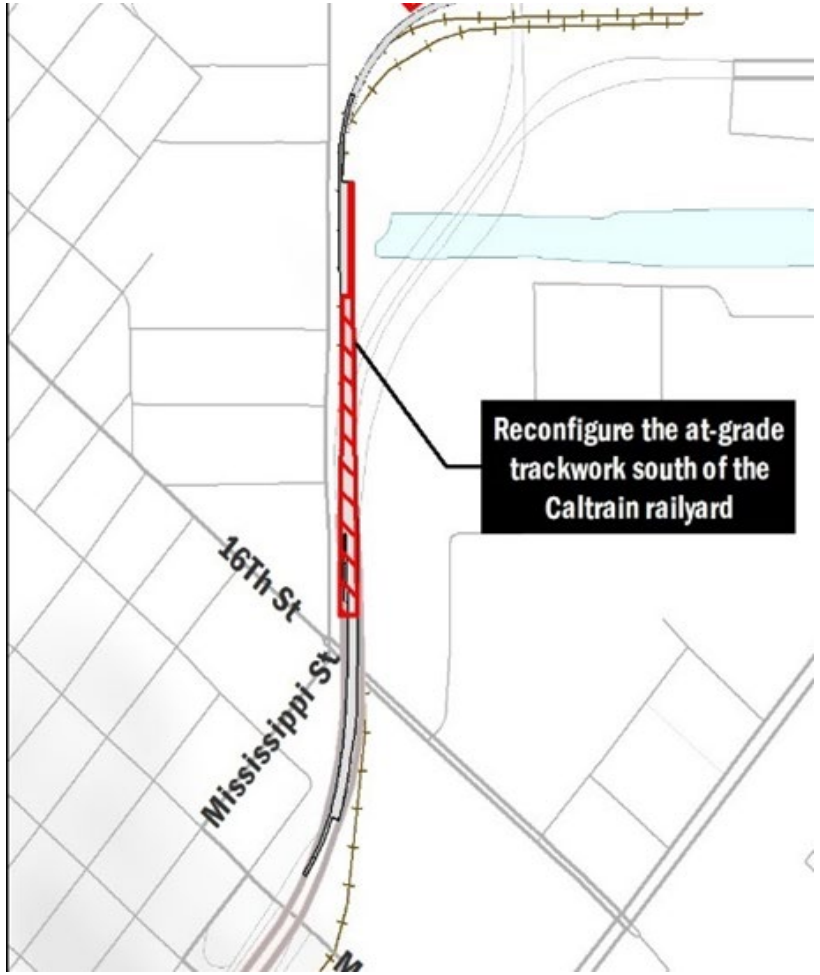
Revised Project Components – Area #4: South of Caltrain Railyard



- **REDUCED** length and track work for turnback and maintenance-of-way tracks

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Trigger #1: Any new or substantially more severe significant impacts? NO

Project Component	Change in Impacts

Components that are DEFERRED, REDUCED, or ELIMINATED
• Underground pedestrian connector
• Intercity bus facility and associated taxi staging area
• Extended Transit Center train box
• Trackwork south of the Caltrain railyard
	• Eliminate or reduce impacts, particularly construction-related effects
	• Of particular note:
	  • Reduced Transit Center train box would result in less land acquisition and displacement
	  • Reduced extent of trackwork south of Caltrain railyard would eliminate significant impacts at-grade crossing of 16th Street and install a fourth track crossing at Mission Bay Drive that would have no significant impacts

Trigger #1: Any new or substantially more severe significant impacts? NO

Project Component	Change in Impacts

Components that EXPAND or ALTER THE FOOTPRINT
• Entrance/exit pavilion at the Transit Center
• Fourth and Townsend Street Station
• Tunnel stub box
	• No new or substantially more severe impacts than in 2018 SEIS/EIR
	• Of particular note:
	  • Fourth and Townsend Street Station would occupy an additional 0.29 acre of Caltrain railyard and result in less-than-significant (LTS) cumulative effects with HSR (during construction, and future operations)
	  • Tunnel stub box realignment would result in less excavation but shift construction impacts from Caltrain railyard to Townsend Street
	  • Mitigation measures previously adopted and incorporated into the Transbay Program reduce impacts to LTS

Trigger #2: New Information & Circumstances? YES, but no new or substantially more severe significant impacts

Change	Impact
• **Transportation** – revised circulation network; new/updated local policies and plans emphasizing transit, safety, sustainability, and equity	• Changes serve to improve circulation, mobility, and safety • Project supportive of these policies and plans and no change to impacts
• **Demographics** – increase in population, housing units, and non-residential floor area	• Changes direct growth toward transit corridors • Project supportive of residential and employment growth, especially around stations, and no change to impacts

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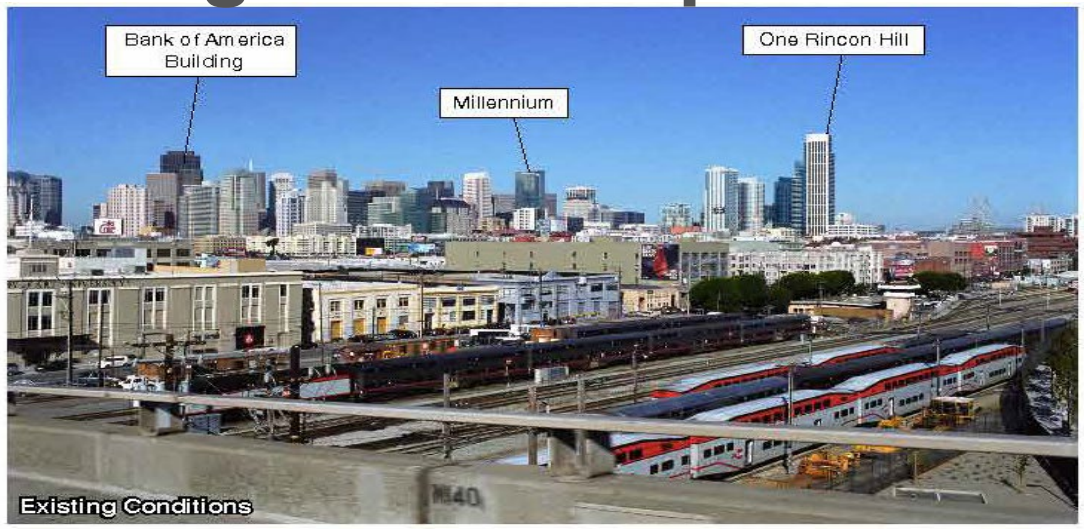
Trigger #2: New Information & Circumstances? YES, but no new or substantially more severe significant impacts

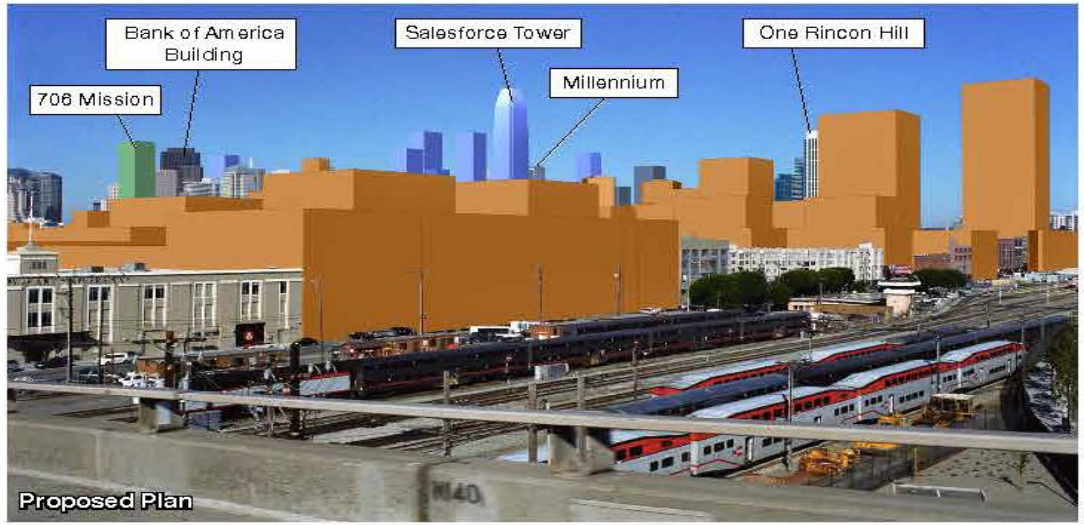
Change

- **Land Use/Aesthetics** – Greater intensification and height of existing and planned land uses with emphasis on mixed use including higher density residences

Impact

- New above-ground component (entrance pavilion at Transit Center) compatible with land use and visual character
- Changes concentrate higher-intensity, mixed uses along transit corridors
- Project supportive of changes and no change to impacts





Plan Building | Transit Center District Plan | Rincon Hill/Transbay Zone 1 | Other Cumulative Development

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Trigger #2: New Information & Circumstances? YES, but no new or substantially more severe significant impacts

Change

- **Noise/Vibration** – new noise-sensitive residential uses and vibration-sensitive land uses

Impact

- Mitigation measures previously adopted and incorporated into the Transbay Program reduce impacts to LTS
- Updated DTX Design Criteria include noise/vibration standards
- No change to impacts

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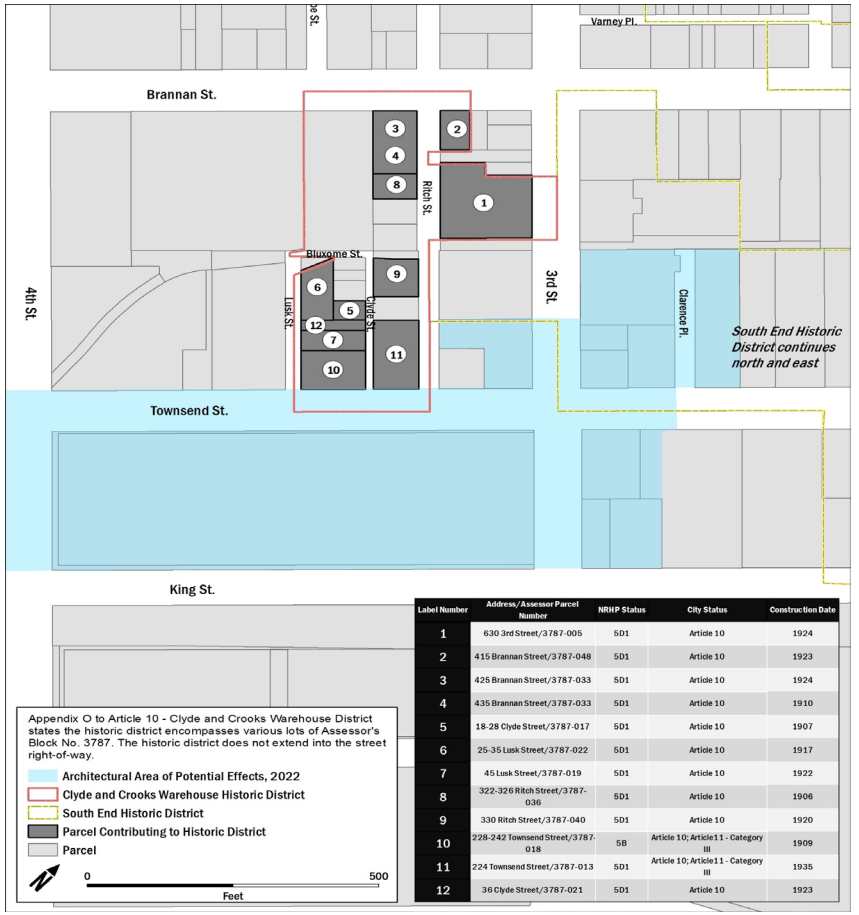
Trigger #2: New Information & Circumstances? YES, but no new or substantially more severe significant impacts

Change

Cultural Resources – new historic district along Townsend and Marine Firemen's Union headquarters now of historical age (>45 years)

Impact

- No direct effects
- Indirect impacts (from proximate tunnel construction and vent structure) – mitigation measures previously adopted and incorporated into the Transbay Program reduce impacts to LTS
- No change to impacts



Label Number	Address/Assessor Parcel Number	NRHP Status	City Status	Construction Date
1	630 3rd Street/3787-005	5D1	Article 10	1924
2	415 Brannan Street/3787-048	5D1	Article 10	1923
3	425 Brannan Street/3787-033	5D1	Article 10	1924
4	435 Brannan Street/3787-033	5D1	Article 10	1910
5	18-28 Clyde Street/3787-017	5D1	Article 10	1907
6	25-35 Lusk Street/3787-022	5D1	Article 10	1917
7	45 Lusk Street/3787-019	5D1	Article 10	1922
8	322-326 Ritch Street/3787-036	5D1	Article 10	1906
9	330 Ritch Street/3787-040	5D1	Article 10	1920
10	228-242 Townsend Street/3787-018	5B	Article 10; Article11 - Category III	1909
11	224 Townsend Street/3787-013	5D1	Article 10; Article11 - Category III	1935
12	36 Clyde Street/3787-021	5D1	Article 10	1923

Clyde and Crooks Warehouse District along Townsend between Third and Lusk Sts.

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Trigger #3: New Feasible Mitigation Measure or Alternative? NO

Change	Impact
• No new feasible mitigation measures; only wording revisions and elimination of one measure no longer needed • No new feasible alternatives	• Revised mitigation measures clarify intent and application

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Conclusions / Recommendations

- No triggers or basis to perform more extensive CEQA documentation
- Recommendation to TJPA Board:
  - Adopt Addendum to the 2018 SEIR
  - Adopt revised Mitigation Monitoring and Reporting Program
  - Approve Revised Project