San Francisco Planning

49 South Van Ness Avenue, Suite 1400
San Francisco, CA 94103
628.652.7600
www.sfplanning.org

PUBLIC NOTICE

AVAILABILITY OF NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT

PROJECT INFORMATION

Date:	***May 31, 2023***
Project Title:	***Islais Creek Bridge Project***
Project Address:	N/A
Case No.:	**2022-000112ENV**
Block/Lot No.:	N/A
Zoning District(s):	Production, Distribution, Repair (PDR-2)/Heavy Industrial (M-2)
Neighborhood:	Bayview
Project Sponsor:	San Francisco Public Works, Thomas Roitman, 628.271.2404, thomas.roitman@sfdpw.org
EIR Coordinator:	Elizabeth White, 628.652.7557, CPC.IslaisCreekBridgeProject@sfgov.org

The San Francisco Planning Department has issued a notice of preparation (NOP) of an environmental impact report (EIR) in connection with this project. Next, the department will begin the preparation of an EIR as required by the California Environmental Quality Act. The department welcomes your comments regarding the scope of the EIR. Refer to the Project Description and Purpose of Notice sections below for more information.

Project Description

San Francisco Public Works (Public Works) is proposing to replace the existing Islais Creek Bridge (officially named the Levon Hagop Nishkian Bridge) along Third Street in the City and County of San Francisco (City). The existing Islais Creek Bridge is structurally deteriorated and seismically deficient, and the existing drawbridge has not been used for large ships for approximately 50 years. The proposed replacement bridge would meet current structural and seismic standards, and would be resilient to predicted sea-level-rise impacts.

Construction of the proposed project would result in replacement of the existing drawbridge with a fixed bridge and large ships would no longer be able access the Islais Creek channel west of the new bridge. With the exception of a new pedestrian/bike path, the project would not change the existing lane configuration of the bridge. The new bridge would accommodate a center 26-foot-wide dedicated light-rail transit (light rail) tracks, two 11-foot travel lanes in each direction, a 12-foot-wide shared pedestrian/bicycle path on the eastern side of the bridge, and a 16-foot-wide shared pedestrian/bicycle path on the western side of the bridge.

Construction is estimated to be approximately 24 months and would begin no sooner than spring 2025. Throughout the construction duration, there would be no access for vehicles, the T-Third Street light rail service,

or pedestrians to the bridge or Third Street between Marin Street to the north and Cargo Way to the south. Vehicles would be detoured around the site to other routes, including the Illinois Street Bridge. During construction, T-Third Street passengers would use bus shuttles in lieu of light rail service south of Islais Creek Bridge and transfer to light rail service north of Islais Creek Bridge. The 15 Bayview Hunters Point Express bus would be detoured around the project site. Public Works is coordinating with the San Francisco Municipal Transportation Agency to develop alternative transportation options to minimize the transportation impacts of the project.

Purpose of Notice

The Planning Department has determined that an EIR must be prepared for the proposed project prior to any final decision regarding whether to approve the project. The purpose of the EIR is to provide information about potential significant physical environmental effects of the proposed project, to identify possible ways to minimize the significant effects, and to describe and analyze possible alternatives to the proposed project. Preparation of an NOP or EIR does not indicate a decision by the city to approve or to disapprove the project. However, prior to making any such decision, the decision makers must review and consider the information contained in the EIR.

You are not required to take any action. If you wish to provide comments on the scope of the EIR, you may do so in either or both of the following ways:

WRITTEN COMMENTS

Planner:	**Elizabeth White, Senior Environmental Planner**
Via Mail:	**49 South Van Ness Ave, Suite 1400**
	San Francisco, CA 94103
Via Email:	CPC.IslaisCreekBridgeProject@sfgov.org

From May 31, 2023 to 5 p.m. on June 30, 2023

If you work for an agency that is a Responsible or a Trustee Agency, we need to know the views of your agency as to the scope and content of the environmental information that is relevant to your agency's statutory responsibilities in connection with the proposed project. Your agency may need to use the EIR when considering a permit or other approval for this project. We will also need the name of the contact person for your agency. If you have questions concerning environmental review of the proposed project, please contact the environmental planner listed above. Environmental review focuses on the *physical environmental effects* of the project. Comments regarding your like or dislike of the project or if you think officials should approve or disapprove the project will not be addressed in the environmental review document. Instead, we encourage you to provide these comments to the project sponsor, Thomas Roitman (628.271.2404, thomas.roitman@sfdpw.org).

This notice is available for public review on the San Francisco Planning Department's website at sfplanning.org/sfceqadocs and at the San Francisco Permit Center, 49 South Van Ness Avenue, 2nd Floor Viewing Room, San Francisco, CA 94103. Referenced materials are available through the following Planning Department's web pages: sfplanning.org/sfceqadocs and sfplanning.org/resource/permits-my-neighborhood.

General Information about Procedures

Members of the public are not required to provide personal identifying information when they communicate with the Commission or the Department. All written or verbal communications, including submitted personal contact information, may be made available to the public for inspection and copying upon request and may appear on the department's website or in other public documents.

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Project Title:	**Islais Creek Bridge Project**
Case No.:	2022-000112ENV
Zoning District(s):	Production, Distribution, Repair (PDR-2)/Heavy Industrial (M-2)
Block/Lot No.:	N/A
Neighborhood:	Bayview
Project Sponsor:	San Francisco Public Works Thomas Roitman - 628.271.2404
Lead Agency:	San Francisco Planning Department
Staff Contact:	Elizabeth White - 628.652.7557 CPC.IslaisCreekBridgeProject@sfgov.org

Introduction

The San Francisco Planning Department has prepared this notice of preparation (NOP) of an environmental impact report (EIR) in connection with the Islais Creek Bridge Project. The purpose of the EIR is to provide information about the potential significant physical environmental effects of the proposed project, to identify ways to minimize the project's significant adverse effects, and to describe and analyze possible alternatives to the proposed project. The planning department is issuing this NOP to inform the public, and responsible and interested agencies about the proposed project and the intent to prepare an EIR; and to solicit comments on the scope of the EIR. This notice also identifies environmental issues anticipated to be analyzed in the EIR. The comments received during the public scoping process will be considered during preparation of the EIR for this project.

This notice is available for public review on the San Francisco Planning Department's website at sfplanning.org/sfceqadocs, and at the San Francisco Permit Center's document viewing room on the second floor of 49 South Van Ness Avenue, San Francisco, CA 94103.

Project Overview and Location

The City and County of San Francisco is proposing to replace the Islais Creek Bridge (officially named the Levon Hagop Nishkian Bridge) along Third Street in San Francisco; San Francisco Public Works (public works) will construct the project. The existing Islais Creek Bridge is structurally deteriorated and seismically deficient. The proposed replacement bridge would meet current structural and seismic standards, and would be resilient to predicted sea-level-rise impacts up to the year 2100. The existing drawbridge would be replaced with a fixed bridge, and passage under the bridge to Islais Creek channel west of the new bridge would be limited to small personal craft such as canoes, kayaks, and rowboats. The existing drawbridge has not been used for large ships for approximately 50 years (since 1974). With the exception of a new pedestrian/bicycle path, the project would not change the existing lane configuration of the bridge. The new bridge would accommodate a center 26-foot-wide dedicated light-rail transit (light rail) tracks, two 11-foot travel lanes in each direction, a 12-foot-wide Class I shared pedestrian/bicycle path on the eastern side of the bridge, and a 16-foot-wide Class I shared pedestrian/bicycle path on the western side of the bridge. Future projects (not associated with the Islais Creek Bridge Project) may connect the bicycle/pedestrian path on the western side of the bridge to planned access along the Islais Creek shoreline, and more directly to the citywide bicycle network.

Land uses in the project area are a mix of commercial and industrial. There is a San Francisco Municipal Transportation Agency (SFMTA, or Muni) bus facility northwest of the bridge, San Francisco Fire Department – Station No. 25 to the southeast of the bridge, and a concrete batch plant and Port of San Francisco uses east of the bridge. There are light industrial and additional Port of San Francisco uses northeast of the bridge. Several wastewater treatment system assets are situated along Islais Creek Channel (the channel). The San Francisco Public Utilities Commission (SFPUC) outfall from the Southeast Treatment Plant and the Booster Pump Station are southwest of the bridge. The outfall pipes run below the creek adjacent to the bridge (below the channel) and along the northern side of the channel to the bay.

The Islais Creek Bridge is on Third Street over the Islais Creek channel in San Francisco's Bayview neighborhood (Figure 1). The bridge is approximately 1,700 feet east of Interstate 280, and approximately 3,300 feet west of San Francisco Bay (the bay). Various parks and open spaces are within a quarter mile of the project site, including the Bayview Gateway (which includes the Rosa Parks Skate Plaza), Tulare Park, and the Islais Creek Park. Third Street is a major arterial,[1] connecting the downtown area to the industrial area of the southern San Francisco waterfront. The channel is a dredged, channelized, tidal body of water with predominantly armored shorelines. The channel extends from the bay to the site of the former outfall of the culverted and buried Islais Creek. The project area is underlain by artificial fill over Young Bay Mud deposits to a depth of 60 feet. The channel is a navigable waterway regulated by the United States Coast Guard (Coast Guard). The channel receives relatively little freshwater input and is essentially an extension of the bay.

[1] The San Francisco General Plan designates Third Street as a Major Arterial in the Congestion Management Program Network, and as part of the Metropolitan Transportation System Network. Third Street is also designated as a Transit Preferential Street (Transit Important) Street, a Citywide Pedestrian Network Street, a Neighborhood Commercial Pedestrian Street, and a designated Freight Traffic Route.

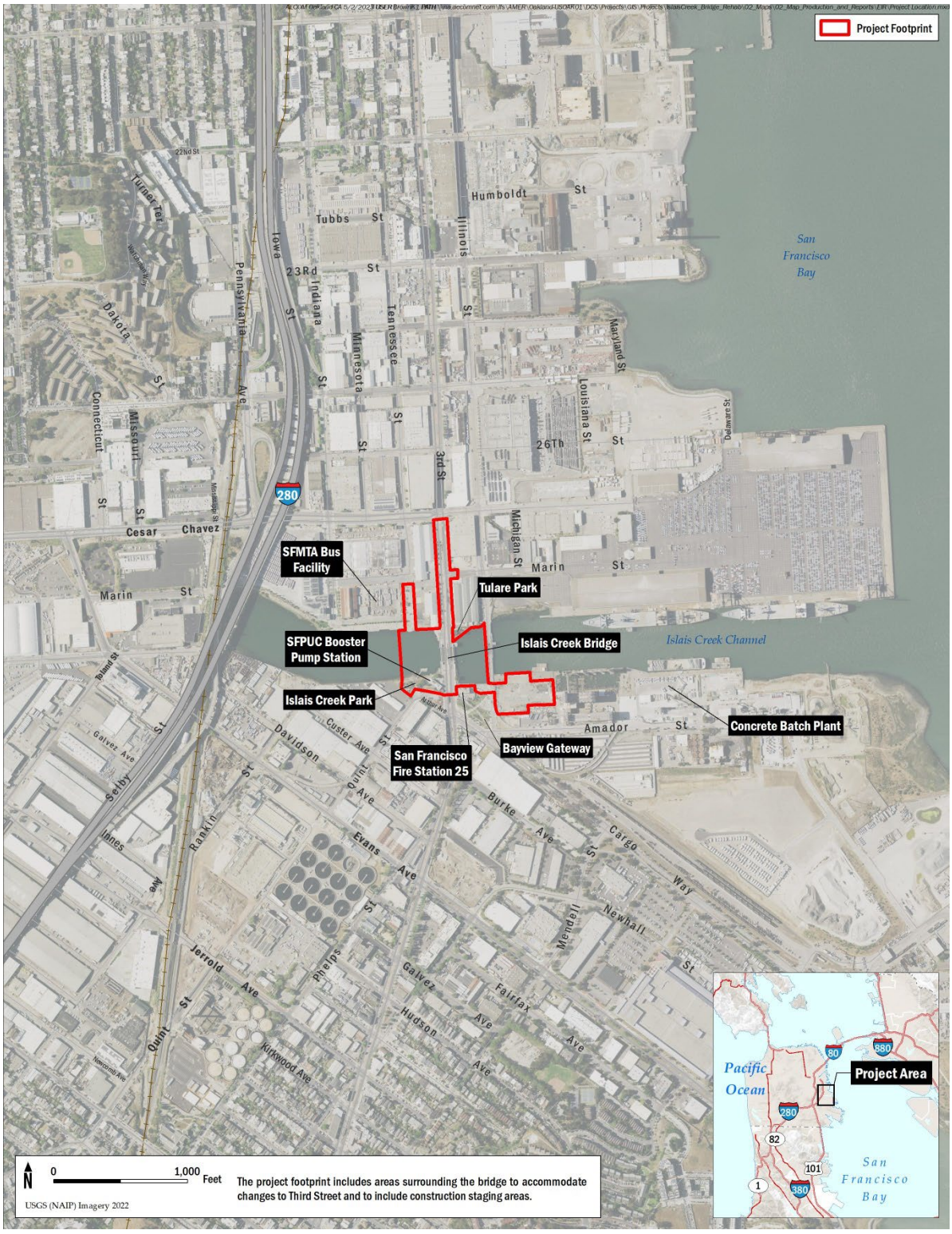

Figure 1 Project Location

Existing Bridge

Constructed in 1949, the existing drawbridge (Figure 2) is made up of two separate sections that open in the middle, allowing boats access to the upper approximately 1,500 feet segment of the Islais Creek channel to the west of the bridge. Both bridge sections sit on separate concrete foundations called abutments with one abutment on each side of the channel. Each of the two bridge sections consists of three through-girders. A girder is a horizontal, steel support beam that acts as the primary support for a bridge. The through-girders protrude both above and below the open-grid steel decking. An open-steel grating extends between the girders, supporting Third Street. The existing bridge deck is approximately 114 feet long and approximately 100 feet wide.

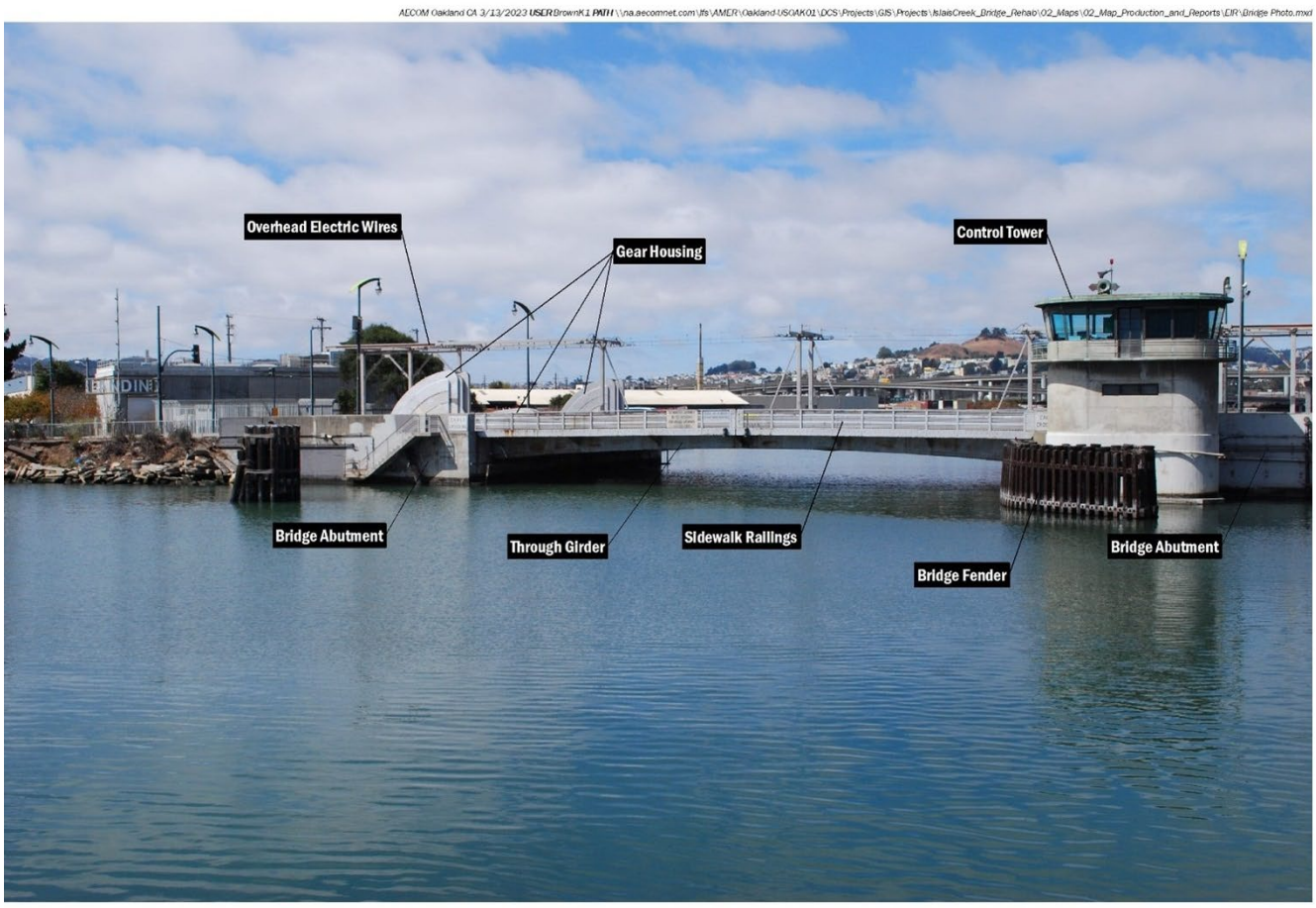

Figure 2 Islais Creek Bridge East Elevation

As originally designed in 1949, the bridge carried only vehicular traffic and pedestrians. In 2007, SFMTA retrofitted the bridge to carry two light rail tracks, with overhead electric wires and poles to provide power to light rail vehicles. The retrofit added five 48-inch cast-in-steel-shell piles at each abutment. The existing bridge now carries four lanes of vehicle traffic, two Muni light rail tracks, and two sidewalks. Light rail vehicles must slow to pass through the horizontal alignment reverse curve[2] at the bridge approaches, and as vehicles cross the gaps in the rails where the two bridge halves meet. The deteriorated condition of the bridge makes the bridge deck

[2] The Islais Bridge Creek reverse curve is Muni's light rail track curving to move the track alignment to avoid the bridge's center girder.

susceptible to vibration, which is created by heavy vehicles, trucks, and light rail vehicles crossing the bridge. The sidewalks and bridge deck are open-steel grates that discharge stormwater directly to the channel. Because it is a drawbridge, the bridge carries no utility connections across the channel.

The bridge control tower that houses the operator's controls is on the northeastern side and immediately adjacent to the bridge. The tower consists of two elevated concrete floors, a basement level, and a steel-and-wood roof supported by steel pipe columns.

In 2004, the California Department of Transportation (Caltrans) conducted an evaluation of the bridge's historic significance. It was determined that the bridge was significant as an example of Art Moderne-style applied to a bridge.[3] These features make the bridge eligible for the National Register of Historic Places for its distinctive design qualities.

Project Sponsor's Objectives

Project objectives define the project's intent, explain the project's underlying purpose, and facilitate the formation of project alternatives evaluated in the draft EIR. As the project sponsor, public works seeks to achieve the following objectives:

- Increase distance between the bridge's lowest point and existing channel's water elevation to the maximum extent practicable. This will extend the useful life of the bridge by improving the bridge's resilience to the impacts of sea-level rise, avoiding the current recurring submersion of the bridge underdeck and flooding of the machine rooms, and reducing the bridge's exposure to seawater and sustained moisture.
- Address the existing bridge's seismic deficiencies by replacing it with a new bridge that is seismically adequate.
- Minimize the project's construction times to the maximum practicable to reduce impacts to Bayview Hunters Point residents. The Bayview Hunters point neighborhood has substantially larger percentage of Black/ African American and Latinx residents when compared to the San Francisco as a whole and the per capita income is less than half of the City average.[4] The road and trackway over the bridge provides a vital connection between the San Francisco's downtown and Mission Bay areas and Bayview Hunters Point, who would disproportionately experience transit delays and detours during project construction.
- Increase the serviceability of the bridge to improve multi-modal transportation safety and increase operational utility to Muni light rail operations.
- Maintain current geometric, construction, and structural standards required for the types and volume of projected traffic on the bridge over its design life[5] to ensure continued access from the Bayview Hunters

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[3] Caltrans, Department of Parks and Recreation Primary Record. Third Street Bridge over Islais Creek, June 2004.

[4] San Francisco Neighborhoods Socio-Economic Profiles: American Community Survey 2012–2016. San Francisco Planning Department, September 2018.

[5] Structural engineers estimate the loads the bridge needs to carry over its "service life", which is the length of time the bridge is expected to be in service without rehabilitation, or significant repair, and with only routine maintenance. The engineers then design the bridge structure to be robust enough to be able to meet that projected load-bearing requirement over that time period, which sets the bridge's "design life". A national design-life standard of 75 years for a bridge is based on the *AASHTO* (The American Association of State Highway and Transportation Officials) *Load and Resistance Factor Design Bridge Design Specifications*. In this way, the bridge is designed so that the design life meets the expected service life.

point neighborhood to the rest of the City and the region. This is intended to ensure that the bridge is operationally and structurally adequate for its entire design life.

- Provide a bicycle facility as part of the proposed project that could eventually be incorporated into City bicycle route planning.

Project Description

Bridge

The proposed project would involve the demolition and removal of the existing bridge deck, including all electrical equipment and drive machinery needed to open the drawbridge. These features would be replaced with a new 115-foot-long, 114-foot-wide, single-span precast/prestressed concrete through-girder bridge featuring a concrete deck with a cast-in-place, reinforced-concrete topping. The bottom and top of deck elevation for the existing bridge is approximately 10 feet and 15.6 feet, respectively. The Islais Creek Bridge Project would increase this elevation and achieve a bottom of bridge minimum elevation of 15.2 feet and a top of deck minimum elevation of 18.6 feet (see Figure 3). The new bridge would accommodate a center 26-foot-wide dedicated light rail trackway, two 11-foot-wide travel lanes in each direction, a 12-foot-wide Class I pedestrian path on the eastern side of the bridge, and a 16-foot-wide Class I shared pedestrian/bicycle path on the western side of the bridge (Figure 4 and Figure 5). The pedestrian/bicycle paths would be cantilevered off the exterior girders and would include a steel pedestrian/bicycle railing.

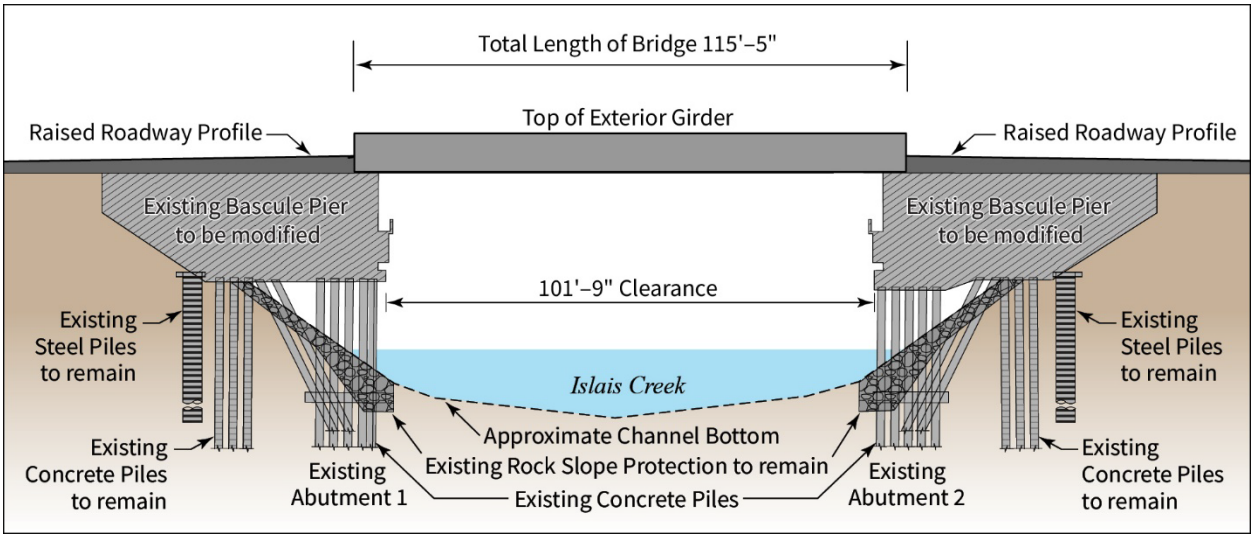

Figure 3 Proposed Bridge Longitudinal Section

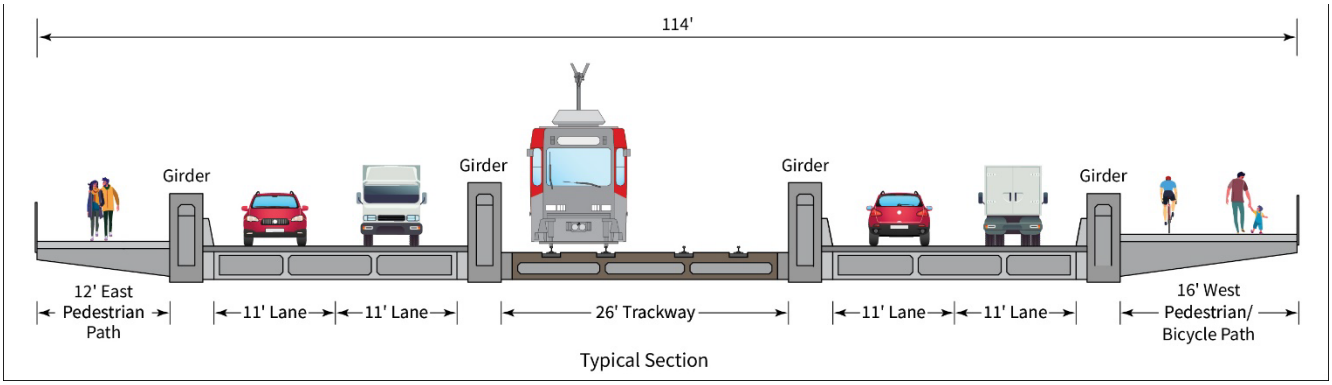

Figure 4 Proposed Bridge Cross Section

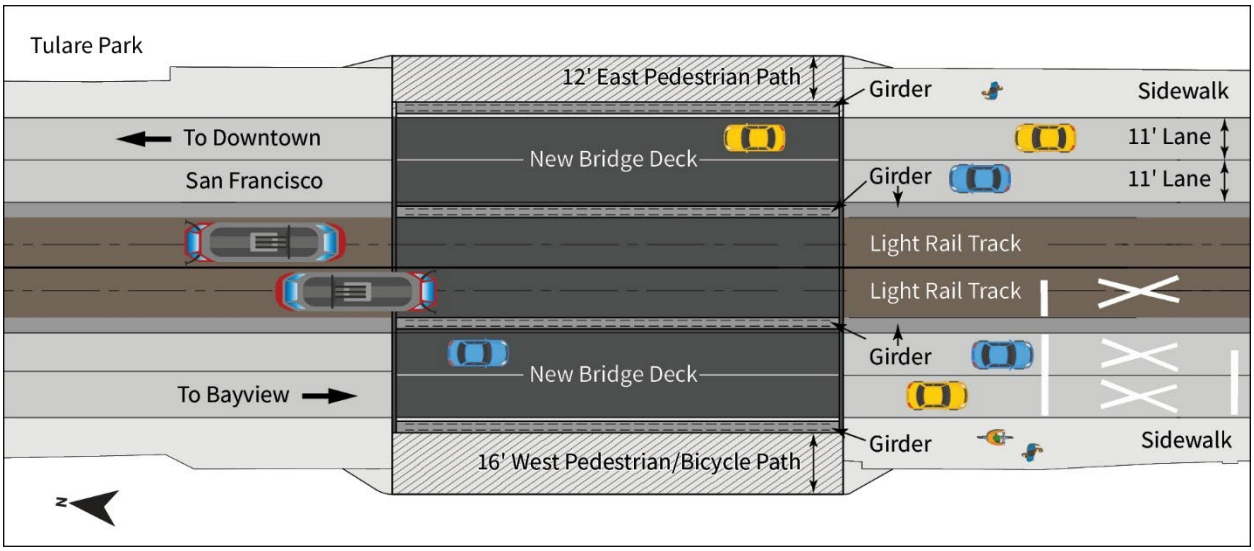

Figure 5 Proposed Bridge Plan View

The structure would consist of four through-girders. As shown in Figure 4, "through-girder" refers to a bridge type in which girders protrude above the deck and traffic passes between them. The two exterior girders would support the combined pedestrian/bicycle path and half of the vehicle lanes, and the interior girders would support the other half of the vehicle lanes and the light rail trackway. Approximately 4 feet of the overall girder depth would be below the deck surface, with approximately 5 feet (exterior, facing the sidewalks) and approximately 6 feet (interior, facing the roadway) above the deck surface. The portions of the girders above the deck surface would serve as barriers between the trackway, Third Street, and the pedestrian/bicycle paths.

The configuration of the bridge, Third Street, and the sidewalk would be maintained; however, the light rail alignment would be modified to eliminate the existing reverse curves required to accommodate the center girder of the existing bridge. As described above, the new bridge's bottom and top of deck would be approximately 5.2 feet and 3 feet higher, respectively, than the existing bridge, thus accommodating future sea-level rise within the city's existing right of way constraints. Replacing the bridge at its current location would not require the acquisition of new right-of-way from adjacent parcels. Third Street and the pedestrian/bicycle paths would be raised to match the profile of the reconstructed light rail tracks. The reconstruction would extend approximately 200 feet to the north of the existing bridge superstructure and 250 feet to the south of the existing

bridge superstructure. Sidewalks would be constructed 6 inches above Third Street. Minor adjustments would be made to the elevation of existing driveways and drainage catch basins in the changed approach grades along Third Street.

Trackway

The light rail trackway would be constructed in the median of Third Street between the existing light rail station (Marin Street) north of the bridge and the freight rail crossing near Cargo Way south of the bridge. Once the rails have been installed, they would be embedded in concrete up to the top of the rails. The track centerline spacing would vary from 12 feet at the northern end to 12.5 feet at the southern end. A 6-inch-high concrete curb would be placed along the edges of the trackway to prevent motor vehicles from entering the trackway. The curb would be discontinued near the existing fire station to allow emergency vehicles to cross the tracks. On the bridge, the through-girders would provide separation between the driving lanes and the rail tracks.

Bridge Abutments

The movable components of the existing drawbridge structure would be removed as part of the proposed project. Once the demolition of the bridge deck and supporting mechanical components is complete, the existing abutments would be modified to create the space necessary to support the new concrete girders and deck elements. An additional reinforced-concrete structure would be added to the existing abutments to support the new bridge at a higher elevation.

New pilings may be added to the existing abutments to support any increase in the weight of the bridge structure. If needed, pilings would be installed through the bottom of the existing abutments. The pilings would be constructed so as not to encroach into the channel. No impact-pile driving is proposed as part of the Islais Creek Bridge Project; piles to support the existing abutments would consist of either cast-in-drilled-hole reinforced-concrete or pipe piling, drilled to the appropriate foundation depth.

Lighting and Electrical

The existing streetlights would be removed and reinstalled on new foundations that would be placed in the new sidewalks as part of the project. The streetlight poles would also support the new overhead electric wires, which would supply electrical power to the light rail vehicles. On the bridge structure, new streetlight poles may be affixed to the through-girders. Any new or replacement lighting would comply with existing regulations and citywide policies to ensure that spillover light would be minimized.

Drainage

In comparison to the existing bridge, the new bridge would increase the area that drains to the combined sewer-and-storm-drain system within the project limits by approximately 0.25 acre. The project would not convert any permeable surface to impermeable surface. The reconstructed trackway and Third Street would be designed to convey stormwater runoff to the curb and gutters along the edge of Third Street, and then to new stormwater collection drains at the bridge approaches. These would be constructed to accommodate the raised Third Street profile. These drains would be connected to the existing combined sewer/stormwater system by new lines to the nearest manholes, which in turn connect to lines of adequate capacity to the north and south of the bridge. The closest manhole to the south is within the footprint of project construction. To the north, the nearest appropriate manhole is in the intersection with Marin Street. Currently, there is a sewer line running approximately 415 feet under Third Street from Arthur Avenue to Marin Street. The project would either replace the clay pipe with a new

larger-diameter line, or provide a second supplemental line. Construction would also include connecting laterals to the existing sewer line. Final design would depend on a hydraulic analysis that would be conducted as part of the project's detailed engineering design phase.

Fender Pile System

The existing bridge fender system on both sides of the navigable waterway beneath the bridge is in poor condition; in some areas, it exhibits extensive deterioration, with extensive loss of material in the tidal zone (Figure 6).[6] Most of the timber in the fender system is degraded to such an extent that it is nonfunctional. The project would remove the remaining existing fender piles, which would be cut just below the mudline. No new fenders would be installed.

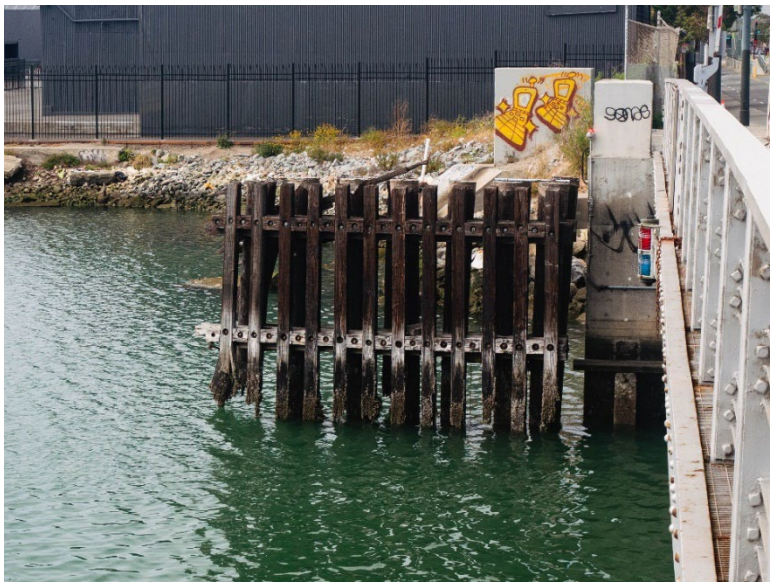

Figure 6 Existing Damaged Fender Piles

Control Tower

The upper portion of the control tower would be demolished down to the sidewalk level. The remaining portion would then be rehabilitated to create a public observation platform, with access from the reconstructed sidewalk adjacent to the bridge abutment. The existing concrete piling supporting the remaining tower would be rehabilitated in place to restore the structural integrity of the piles and to add corrosion protection. The pile rehabilitation work would be completed by a team of divers, and no new pilings are anticipated.

Project Construction

Construction is estimated to last approximately 24 months and is assumed to begin no sooner than spring 2025. Construction is anticipated to use typical 8-hour work shifts during daylight hours. Nighttime and weekend construction is not anticipated. The project involves the demolition and removal of the existing bridge deck, including all electrical equipment and drive machinery needed to open the drawbridge. Because Third Street, the sidewalks, and track profiles are being raised above the existing road, project-related soil excavation would

[6] A bridge fender is a group of connected piles in the channel that acts to cushion the impact to the bridge if struck by a ship.

be limited to the ends of the bridge, where the raised area tapers down to the existing Third Street. There would also be localized trenching for new catch basin connections to the existing combined sewer/stormwater system, and trenching for electrical conduits. Excavation depths would range from 15 feet to tie into the combined sewer/stormwater system; 5 feet behind the existing abutments; and up to 80 feet below the floor of the existing abutment if cast-in-drilled-hole or cast-in-steel-shell piles are necessary.

Temporary Traffic and Transit Rerouting Plan

Bridge closure is expected for approximately 24-months. Throughout the construction duration, there would be no access for vehicles, light rail, or pedestrians to the project area. Detours would be established to reroute traffic around the construction site. In addition, as a temporary measure during construction, buses would be used to replace existing light rail service in the project area along Third Street south of the bridge. The temporary bus substitute would be planned in close coordination with SFMTA and emergency service providers. A traffic management plan would be established, which would include a temporary detour plan. The plan would prescribe detour routes for vehicles as well as bicyclists and pedestrians. Local driveway access would be provided to owners within the detour envelope on Third Street. All construction activity and staging in the waterway would be coordinated with the Coast Guard to minimize potential impacts to marine traffic.

During construction, access to the adjacent parks and recreational resources described above would be temporarily limited from Third Street. Throughout the construction period, access to these parks would be available from other access points along Illinois Street, Cargo Way, and Quint Street. Signs would be posted directing park users to these access points. Existing access points from Third Street would be fully restored after project completion.

Construction Access and Staging

The through-girders for the new bridge would be constructed off site, barged to the project site, and placed into position with the use of both barge-mounted cranes and cranes on the Third Street approach, adjacent to the modified abutments. Temporary supports would be installed on the girders prior to setting them in place. The new bridge deck would be made up of precast/prestressed concrete modules placed between the through-girders. Third Street and the shared use path would be topped with a cast-in-place, reinforced-concrete deck; the rail in the trackway would be supported on cast-in-place, reinforced-concrete supports. Debris containment systems would be used for work over water to prevent airborne or falling debris from entering the Islais Creek channel.

Construction access to the project site would be via Third Street and the channel. As shown in Figure 1, the project limits include areas along Third Street north and south of the bridge. This accommodates the connection of the new light rail track to the existing track, and to the connections to the combined sewer/stormwater system at the Third Street/Marin Street intersection north of the bridge and 250 feet south of the bridge. It is anticipated that the contractor would use this area for staging equipment and materials during the demolition of the existing bridge components and the construction of the replacement bridge. Although temporary construction easements may be required immediately adjacent to the bridge, no new permanent right-of-way would be required for the project. No vegetation would be removed during or after construction.

In addition to staging areas on the bridge approaches and anchored barges, three potential offsite construction staging area options have been identified (Figure 7). Site 1 has an area of approximately 2.5 acres and is east of the project site along Illinois Street on the southern side of the channel (500 feet east of the project site). The

other two sites (Site 2, approximately 20 acres; and Site 3, approximately 22 acres) are 0.75 mile southeast of the project site to the east in the Hunters Point area along Amador Street near Piers 94 and 96. These three sites are owned by the Port of San Francisco; they are currently used for Port-related storage, transport, and other industrial purposes. One of these staging areas may be selected by the construction contractor and could be used to stage and store materials, equipment, and construction vehicles. All construction staging areas would be on existing asphalt or concrete surfaces.

Figure 7 Potential Staging Area Options for Islais Creek Bridge Project

Construction Work Crew

It is anticipated that the total number of workers active on the site at a given time would vary from 10 to 40 individuals, with an average of 20 workers over the 24-month construction duration.

Anticipated Construction Work in the Islais Creek Channel

No additional abutment elements would be constructed in the channel. The existing abutments would be modified to support the new bridge girders and deck, and to accommodate all modes of traffic without requiring construction in the channel. If the weight of the new bridge is significantly greater than the weight of the components of the existing bridge, additional pilings would be added beneath the abutments.

Removal of the existing bridge deck and mechanical and electrical equipment would be performed from behind the abutments and from barges in the channel. Once the existing bridge is removed, the existing fenders and piling would be cut off just below the mudline, removed from the site, and disposed of in a manner consistent with regulatory requirements.

Barges would also be used during the construction of the new bridge. However, the construction would not result in the placement of permanent fill in the channel, except for minor navigational aids that would be occupy less space than the existing navigational aids that would be removed.[7]

Four new navigational dolphins would be installed in the channel (two west of the bridge and two east of the bridge) to designate the passageway for vessels traveling under the new bridge.[8] Each dolphin would consist of four 12-inch-diameter fiber-reinforced polymer or high-density polyethylene piles lashed together above the water line. Each of the 16 piles would be driven using vibratory methods to minimize disturbance to the channel and potential impacts to aquatic resources.

Project Site Restoration and Cleanup

All construction-related materials would be removed after completion of construction activities. Temporary staging areas would be cleaned up, and any remaining concrete or asphalt would be removed and hauled to an appropriate waste disposal facility.

Required Project Approvals

The proposed project is subject to review and approval by several local, regional, state, and federal agencies. Certification of the Final EIR by the planning commission is required before any discretionary approval or permits may be issued for the proposed project. The proposed project would require the project approvals and other actions listed in the following paragraphs.

Federal Agencies

- USCG: Rivers and Harbors Act Section 9 approval
- United States Army Corps of Engineers: Clean Water Act Section 404 permit for filling or dredging of waters of the United States
- National Marine Fisheries Service: informal consultation pursuant to Section 7 of the Endangered Species Act and Section 305(b) of the Magnuson–Stevens Fishery Conservation and Management Act; authorization to incidentally harass marine mammals pursuant to the Marine Mammal Protection Act
- Federal Highway Administration delegated to California State Department of Transportation: National Environmental Protection Act – Finding of No Significant Impact

State Agencies

- State of California, San Francisco Bay Regional Water Quality Control Board: Clean Water Act Section 401
- San Francisco Bay Conservation and Development Commission (BCDC): BCDC permit

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[7] The Bay Conservation and Development Commission (BCDC), a California state entity whose jurisdictional area includes the project area, defines bay fill as including pile-supported and cantilevered structures. For BCDC purposes, the project would introduce 1,710 square feet of fill due to the increase in shadow caused by the widening to accommodate the 16-foot-wide Class I shared pedestrian/bicycle path on the western side of the bridge.

[8] A "navigational dolphin" is a group of pilings placed together that will serve as aides to guide navigation for boats and other vessels.

- Caltrans: type selection review

Local Agencies

- SFMTA: encroachment permit or memorandum of understanding
- Port of San Francisco: encroachment permit or memorandum of understanding
- SFPUC: Facility permit for new stormwater tie-in
- San Francisco Planning Commission: certification of the EIR

Summary of Potential Environmental Issues

The proposed project could result in potentially significant environmental effects. Therefore, the planning department will prepare an initial study (IS) and EIR to evaluate the physical environmental effects of the proposed project. As required by the California Environmental Quality Act (CEQA), the EIR will further examine those issues identified in the IS as having potentially significant effects, identify mitigation measures, analyze whether the proposed mitigation measures would reduce the environmental effects to less-than-significant levels, and identify alternatives to the proposed project that would reduce those impacts. The IS will be published as an appendix to the draft EIR and will be considered part of the EIR.

The EIR (including the IS) will be prepared in compliance with CEQA (California Public Resources Code, sections 21000 et seq.), the CEQA Guidelines, and Chapter 31 of the San Francisco Administrative Code. The EIR is an informational document for use by governmental agencies and the public to aid in the planning and decision-making process. The EIR will disclose any physical environmental effects of the proposed Islais Creek Bridge Project and identify possible ways of reducing or avoiding potentially significant impacts.

The EIR will evaluate the environmental impacts of the proposed project resulting from construction and operational activities, and will propose mitigation measures to reduce or avoid impacts determined to be significant. The EIR will also identify potential cumulative impacts that consider impacts of the proposed project in combination with impacts of other past, present, and reasonably foreseeable future projects. The EIR (including the IS) will address all environmental topics in the planning department's CEQA environmental checklist:

- Land Use and Planning
- Aesthetics
- Population and Housing
- Cultural Resources
- Tribal Cultural Resources
- Transportation and Circulation
- Noise
- Air Quality
- Greenhouse Gas Emissions
- Wind
- Shadow
- Recreation
- Utilities and Service Systems
- Public Services
- Biological Resources
- Geology and Soils
- Hydrology and Water Quality
- Hazards and Hazardous Materials
- Mineral Resources
- Energy
- Agriculture and Forestry Resources
- Wildfire

Finding

This project may have a significant effect on the environment, and an EIR will be prepared. This determination is based on the criteria of the state CEQA Guidelines, sections 15063 (Initial Study), 15064 (Determining Significant

Effect), and 15065 (Mandatory Findings of Significance). The purpose of the EIR is to provide information about potential significant physical environmental impacts of the proposed project, and identify possible ways to minimize the significant impacts. The EIR also describes and analyzes possible alternatives to the proposed project. The EIR will also discuss topics required by CEQA, including significant unavoidable impacts and significant irreversible impacts, any known controversy associated with the project and its environmental effects, and issues to be resolved by decision-makers.

Preparation of an NOP or EIR does not indicate a decision by the City and County of San Francisco to approve or to disapprove a proposed project. However, prior to making any such decision, the decision-makers must review and consider the information contained in the EIR.

Public Scoping Comments

The department welcomes your comments concerning the potential environmental effects of this project. Written comments will be accepted until 5 p.m. on June 30, 2023. Written comments should be sent to Elizabeth White, San Francisco Planning Department, 49 South Van Ness Avenue, Suite 1400, San Francisco, CA 94103, or emailed to CPC.IslaisCreekBridgeProject@sfgov.org and should reference the project title and case number on the front of this notice.

State Agencies: If you work for a responsible state agency, we need to know the views of your agency regarding the scope and content of the environmental information that are germane to your agency's statutory responsibilities in connection with the proposed project. Your agency may need to use the EIR when considering a permit or other approval for this project. Please include the name of a contact person in your agency. If you have questions concerning the environmental review of the proposed project, please contact Elizabeth White at 628.652.7557 or CPC.IslaisCreekBridgeProject@sfgov.org.

Members of the public are not required to provide personal identifying information when they communicate with the planning commission or the planning department. All written or verbal communications, including submitted personal contact information, may be made available to the public for inspection and copying on request, and may appear on the department's website or in other public documents.

Recipients of this notice are encouraged to pass on this information to others who may have an interest in the project.

Lisa Gibson _____ May 30, 2023 _____

By Lisa Gibson — Date

Environmental Review Officer

cc: Thomas Roitman, San Francisco Public Works
Boris Deunert, San Francisco Public Works
Oliver Iberien, San Francisco Public Works
Shamann Walton, District 10 Supervisor

APPENDIX B

INITIAL STUDY

ISLAIS CREEK BRIDGE PROJECT

PLANNING DEPARTMENT CASE NO. 2022-000112ENV

Table of Contents

Figures

Tables

Acronyms and Abbreviations

Acronym/Abbreviation	Definition
ABAG	Association of Bay Area Governments
ADL	aerially deposited lead
air board	California Air Resources Board
air district	Bay Area Air Quality Management District
APEZ	Air Pollutant Exposure Zone
AQI	Air Quality Index
AWSS	Auxiliary Water Supply System
BMP	best management practice
CalEEMod	California Emissions Estimator Model
California Register	California Register of Historical Resources
Cal/OSHA	California Division of Occupational Safety and Health
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CNDDB	California Natural Diversity Database
CO	carbon monoxide
dB	decibel
dBA	A-weighted decibels
DPM	diesel particulate matter
DPS	distinct population segment
DTSC	California Department of Toxic Substances Control
EFH	essential fish habitat
EIR	environmental impact report
ERO	environmental review officer
FESA	federal Endangered Species Act
FMP	Fisheries Management Plan
g	acceleration of gravity
GHG	greenhouse gas
HAPC	Habitat Area of Particular Concern
HI	hazard index
HRA	health risk assessment
HREC	historic Recognized Environmental Condition
1–280	Interstate 280

Acronym/Abbreviation	Definition
in/sec	inches per second
ISA	Initial Site Assessment
lbs/day	pounds per day
L_{dn}	day-night average noise level
L_{eq}	noise-level equivalent
L_{max}	maximum noise level
LUST	leaking underground storage tank
M-2	Heavy Industry zoning district
MBTA	Migratory Bird Treaty Act
MMPA	Marine Mammal Protection Act
MTC	Metropolitan Transportation Commission
Muni	San Francisco Municipal Railway
NAVD88	North American Vertical Datum of 1988
NMFS	National Marine Fisheries Service
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
NRHP	National Register of Historic Places
OPR	Office of Planning and Research
OSHA	Occupational Safety and Health Administration
PDR	Production, Distribution, and Repairs
planning department	San Francisco Planning Department
PM	particulate matter
$PM_{2.5}$	particulate matter 2.5 microns in diameter or less
PM_{10}	particulate matter 10 microns in diameter or less
ppm	parts per million
PPV	peak particle velocity
PRC	California Public Resources Code
Public Works	San Francisco Public Works
REC	Recognized Environmental Condition
ROG	reactive organic gases
RCP	Representative Concentration Pathway
RCRA	Resource Conservation and Recovery Act
RWQCB	Regional Water Quality Control Board
SFMTA	San Francisco Municipal Transportation Agency
SFPUC	San Francisco Public Utilities Commission
SFUSD	San Francisco Unified School District
SO_2	sulfur dioxide

Acronym/Abbreviation	Definition
SWPPP	stormwater pollution prevention plan
TACs	toxic air contaminants
TCR	tribal cultural resources
TMDL	total maximum daily load
TPH–d	total petroleum hydrocarbons as diesel
TPH–g	total petroleum hydrocarbons as gasoline
TPH–mo	total petroleum hydrocarbons as motor oil
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
UST	underground storage tank
VdB	vibration decibel
VMT	vehicle miles traveled
WEAP	Worker Environmental Awareness Program

A. Project Description

The project description for the Islais Creek Bridge Project is included as Chapter 2, Project Description, in the draft environmental impact report (EIR) to which this initial study is appended.

B. Project Setting

The project setting for the proposed project is included as Chapter 2, Project Description, in the draft EIR to which this initial study is appended.

C. Compatibility with Existing Zoning and Plans

	Applicable	Not Applicable
Discuss any variances, special authorizations, or changes proposed to the planning code or zoning map, if applicable.	☐	☒
Discuss any conflicts with any adopted plans and goals of the city or region, if applicable.	☒	☐
Discuss any approvals and/or permits from city departments other than the planning department or the Department of Building Inspection, or from regional, state, or federal agencies.	☒	☐

See draft EIR Chapter 3, Plans and Policies, for a detailed discussion of land use plans applicable to the proposed project, and identification of the project's potential to be inconsistent with any of those plans or policies. The project does not propose changes to the Planning Code or Zoning Map or require a variance to the general plan. Chapter 2, Project Description, discusses approvals and permits from city, regional, state, and federal agencies.

D. Summary of Environmental Effects

The proposed project could potentially result in adverse physical effects on the environmental resources checked below, and where those impacts are significant or potentially significant, the California Environmental Quality Act (CEQA) requires identification of mitigation measures to reduce the severity of the impacts to a less-than-significant level to the extent feasible. This initial study presents a more-detailed checklist and discussion of each environmental resource, unless otherwise noted below.

- ☐ Land Use and Planning
- ☐ Aesthetics
- ☐ Population and Housing
- ☒ Cultural Resources
- ☒ Tribal Cultural Resources
- ☒ Transportation and Circulation
- ☐ Noise
- ☒ Air Quality
- ☐ Greenhouse Gas Emissions
- ☐ Wind
- ☐ Shadow
- ☐ Recreation
- ☐ Utilities and Service Systems
- ☐ Public Services
- ☒ Biological Resources
- ☐ Geology and Soils
- ☐ Hydrology and Water Quality
- ☐ Hazards and Hazardous Materials
- ☐ Mineral Resources
- ☐ Energy
- ☐ Agriculture and Forestry Resources
- ☐ Wildfire
- ☒ Mandatory Findings of Significance

This initial study evaluates the potential for the project to result in significant environmental impacts, and identifies which environmental resource topics are appropriately analyzed in the initial study and those that

warrant more detailed analysis in the EIR. On the basis of this initial study, the resource topics for which there is a potential for impacts to be significant, or for which the analysis requires additional detail, are analyzed in the draft EIR and are as follows:

- Cultural Resources (historic architectural resources)
- Transportation and Circulation (construction-related transit impacts)

E. Evaluation of Environmental Effects

Topics:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
1. LAND USE AND PLANNING. Would the project:					
a) Physically divide an established community?	☐	☐	☒	☐	☐
b) Cause a significant physical environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐	☐

Impact LU-1: The proposed project would not physically divide an established community. ***(Less than Significant)***

The division of an established community would typically involve the construction of a physical barrier to neighborhood access (such as a new freeway segment) or the removal of a means of access (such as a bridge or roadway). The proposed project would not create a barrier or obstruction (such as a new freeway segment) that would physically divide an established community.

The Islais Creek Bridge, along with the associated sidewalks and light rail service, would be closed for up to 24 months during the project's construction; access for automobiles, trucks, light rail vehicles, pedestrians, and bicyclists would be restricted across the bridge during this time. The San Francisco Municipal Transportation Agency (SFMTA), in coordination with San Francisco Public Works (Public Works), is developing a traffic management plan that would include a temporary detour plan around the construction site. The plan would identify detour routes for vehicles during the full closure of the bridge and provide signage directing people bicycling and walking to use the Illinois Street Bridge (approximately 500 feet to the east of the Islais Creek Bridge). During project construction, periodic disruptions in access to businesses along Third Street between Cesar Chavez and the Islais Creek Bridge may occur. Public Works would coordinate with impacted businesses on any temporary disruptions in access, but, in general, access to businesses on Third Street between Cesar Chavez and the bridge would be maintained for the duration of the project's construction. Tulare Park and Islais Creek Park are recreational areas immediately adjacent to the bridge (see Figure 7 in Section E.11, Shadow), and access would be prohibited from Third Street; however, signs would redirect the public toward other access points from Illinois Street, Cargo Way, and Quint Street.

The T-Third Street light rail service traverses Islais Creek using the bridge; during the project's 24-month construction period, the SFMTA would implement a combination of light rail and bus service for continued transit service. See Section 4.C, Transportation and Circulation, in the draft EIR for more information.

The proposed bridge would replace the existing bridge and would not create a new barrier to the surrounding community. When completed, the new bridge would continue the direct connection from areas north of Islais Creek channel to areas south of the bridge. The configuration of the bridge would be similar to the current configuration, and the project would occur entirely in existing public right-of-way. Therefore, the project would not physically divide an established community, and the impact would be ***less than significant***. No mitigation is required.

Impact LU-2: The proposed project would not cause a significant physical environmental impact due to a conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. ***(Less than Significant)***

Land use plans and policies adopted for the purpose of avoiding or mitigating an environmental effect are those that directly address physical environmental issues and/or contain targets or standards that must be met to preserve or improve characteristics of San Francisco's physical environment. Conflicts with existing plans and policies do not, in themselves, indicate a significant environmental effect related to the topic of Land Use and Planning. A significant impact could occur if the project substantially conflicts with a land use plan/policy that was adopted for the purpose of avoiding or mitigating an environmental effect and would result in a substantial adverse physical change in the environment.

The proposed project would replace an existing bridge with a new bridge of similar configuration, including two traffic lanes in each direction; one pedestrian path on each side, with the path to the west being wide enough for people bicycling and walking; and two light rail tracks. The new bridge would not change the existing land uses in the project area, nor would it conflict with existing or future designated land uses. The proposed project would be consistent with applicable state, regional, and local plans, because it would replace a structurally deficient bridge with a bridge that meets the city's climate resiliency goals. Therefore, the proposed project would have a ***less-than-significant*** impact with regard to conflicts with existing land use plans, policies, or regulations adopted for the purpose, or avoiding or mitigating an environmental effect, and no mitigation measures would be required.

Impact C-LU-1: The proposed project, in combination with cumulative projects, would not result in a significant cumulative land use impact. ***(Less than Significant)***

Cumulative projects are identified in Draft EIR Section 4.A.6. They include the Biosolids Digester Facilities, San Francisco Public Utilities Commission City Distribution Division Campus, Amador Street Sewer Replacement, Carpenters Union Hall Project, Pier 94 Grassland Meadow Enhancement Project, and the installation of wall-mounted electric vehicle charging stations at 2101 Jerrold Avenue.

The proposed project, in combination with these projects, would not result in a significant cumulative impact related to land use and planning because none of these projects would result in incompatible uses that are inconsistent with zoning regulations in the city and would not adversely impact the existing character or uses in the project vicinity. Additionally, the proposed project, in combination with cumulative projects, would not result in a significant cumulative impact related to a conflict with a land use plan, policy, or regulations adopted for the purpose of mitigating an environmental impact. Therefore, cumulative impacts would be ***less than significant***.

Topics:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
2. AESTHETICS. Would the project:					
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒	☐
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage points.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐	☐
d) Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area?	☐	☐	☒	☐	☐

Impact AE-1: The proposed project would not have a substantial adverse effect on a scenic vista. (*Less than Significant*)

For the purpose of this analysis, scenic vistas generally encompass a wide area with long-range, high-quality views to surrounding elements in the landscape. In San Francisco, "high-quality" views are distinctive views that highlight scenic resources representing the city's unique characteristics, such as the Golden Gate and Bay bridges, the Painted Ladies, and Sutro Tower. The urban design element of the general plan identifies the importance of protecting major views in the city, with attention to views of open space and water.[1]

The Islais Creek Bridge is in an urban, built-up area of San Francisco with surrounding commercial, industrial, and transportation infrastructure. The bridge traverses and overlooks the Islais Creek channel, which flows into San Francisco Bay to the east. The Islais Creek Bridge provides expansive views of surrounding areas: to the east are foreground views of the Islais Creek channel, the Illinois Street Bridge, shipping cranes at the Port of San Francisco, and abandoned grain silos containing a mural at Pier 92 (see Figure 1). Additionally, background views to the east of the bridge include those of the bay and Oakland hills. To the west of the bridge are foreground views of the Islais Creek channel, Islais Creek Park and shoreline access, and the Interstate 280 (I-280) bridge crossing the channel (see Figure 2). Background views to the west of the bridge include Bernal Heights Park, Sutro Tower, and residential areas in Bernal Heights and Twin Peaks. To the north and south, foreground views from the bridge include low-rise warehouse development to the north (see Figure 3), and the hills of Bayview Hunters Point to the south (see Figure 4).

[1] San Francisco Planning Department, Urban Design Element, new plan adopted by Planning Commission Motion No. 20226 on June 28, 2018, and Board of Supervisors Ordinance No. 274-18 on November 13, 2018, https://generalplan.sfplanning.org/I5_Urban_Design.htm, accessed May 18, 2023.

Figure 1 **Existing View from Islais Creek Bridge Facing East**

Figure 2 **Existing View from Islais Creek Bridge Facing West**

Figure 3 **Existing View from Islais Creek Bridge Facing North**

Figure 4 **Existing View from Islais Creek Bridge Facing South**

The proposed project would replace the existing bridge with a similarly configured bridge over an approximately 24-month construction period. During the project's construction, public access to the bridge would not be available as the existing bridge would be closed, demolished, and replaced with a new bridge (see Draft EIR Figure 2.F-1, Figure 2.F-2, and Figure 2.F-4). Although there would be temporary changes to existing views/conditions during project construction, there would be no change to the existing views/ conditions following the completion of the new Islais Creek Bridge because the new bridge would be in the same location as, of the same width as, and of a height similar to that of the existing bridge. The proposed project would not result in substantial adverse impacts to existing scenic vistas and the impact would be ***less than significant***. Therefore, no mitigation measures are required.

Impact AE-2: The proposed project would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings on a state scenic highway. (*No Impact*)

As previously mentioned, the Islais Creek Bridge is in an urban, built-up area of San Francisco, with surrounding commercial, industrial, and transportation infrastructure. The bridge traverses and overlooks the Islais Creek channel, which flows into San Francisco Bay to the east. There are no official scenic resources on the project site, and there are no designated scenic highways in the project vicinity. Therefore, the Islais Creek Bridge Project would have ***no impact*** on scenic resources, and no mitigation measures are required.

Impact AE-3: The proposed project would not conflict with applicable zoning and other regulations governing scenic quality. (*Less than Significant*)

The project site is surrounded by parcels zoned for Production, Distribution, and Repair 2 (PDR-2) or Heavy Industrial Use (M-2) that contain commercial and industrial buildings, roadways, bridges, and other manmade structures. The existing Third Street corridor is marked by diverse views of the natural and urban environment, including the Islais Creek channel, San Francisco Bay, open-space areas, low-rise warehouse and industrial development, and distant views of low-rise residential areas on the hillsides to the west of the project area.

The proposed project would have temporary impacts on visual quality during the demolition and construction of the replacement bridge. Staging areas for storing construction equipment and materials may occur at areas adjacent to the bridge on Third Street and in the Islais Creek channel on barges anchored in the channel. Additionally, three potential offsite construction staging area options have been identified southwest of the bridge on Port of San Francisco jurisdiction. These staging areas, in addition to the demolition and construction activities of the new bridge, may be visible from publicly accessible vantage points. However, these potential visual impacts would be temporary and short term, and would not result in substantial impacts to the visual character or quality of the surrounding area. Once constructed, project features visible to the public would represent only minor changes in the existing character of the bridge and bridge approaches. Surrounding views to and from the bridge would not change as a result of the project.

Therefore, the project would not conflict with applicable zoning and other regulations governing scenic quality and the impact would be ***less than significant***. No mitigation would be required.

Impact AE-4: The proposed project would not create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area. (*Less than Significant*)

The project area is an urban and built environment with existing sources of light and glare from commercial and industrial lighting, pedestrian lighting, vehicle headlights traveling along nearby roadways, street lights, light rail vehicles, and traffic signal lights. Construction activities would only occur during the daytime, so nighttime lighting would not be needed. However, nighttime lighting may be needed at staging areas for site security purposes during the construction period. This lighting would be shielded to reduce spillover onto adjacent properties.

During the operation of the project, conditions related to light and glare would be similar to existing conditions as the proposed project would not create additional light or glare sources. The proposed project would include new pedestrian lighting along the sidewalks; such lighting would be designed to incorporate down-cast, low glare, shields, or equivalent designs to minimize light and glare. Levels and types of light and glare would be consistent with the area, would not have an adverse impact on daytime or nighttime views in the area, and would not result in adverse effects to people or properties. The proposed lighting would be consistent with the city's Better Street Plan 10.5: Ensure adequate light levels for pedestrians and other sidewalk users and minimize light trespass and glare to adjacent buildings[2] and San Francisco Public Utilities Commission (SFPUC) guidelines for street lights.[3] Therefore, the project would not result in a substantial source of light and glare, and impacts would be ***less than significant***. No mitigation measures would be required.

Impact C-AE-1: The proposed project, in combination with cumulative projects, would not result in a significant cumulative aesthetic impact. *(Less than Significant)*

Cumulative projects are identified in Draft EIR Section 4.A.6 and include routine infrastructure projects, public projects, and land use developments; these projects would not result in the construction of new features that would change the existing visual setting. Therefore, the proposed project would not combine with cumulative projects to result in a significant cumulative impact related to aesthetics. This impact would be ***less than significant***, and no mitigation measures are required.

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[2] City and County of San Francisco 2010. Better Streets Plan, https://sfplanning.org/resource/better-streets-plan.
[3] San Francisco Water Power Sewer 2021. Streetlight Guidelines, https://sfpuc.org/sites/default/files/documents/StreetlightGuidelines_20210701.pdf.

Topics:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
3. POPULATION AND HOUSING. Would the project:					
a) Induce substantial unplanned 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)?	☐	☐	☐	☒	☐
b) Displace substantial numbers of existing people or housing units, necessitating the construction of replacement housing?	☐	☐	☐	☒	☐

Impact PH-1: The proposed project would not induce substantial unplanned population growth, either directly or indirectly. ***(No Impact)***

In general, a project would be considered growth-inducing if its implementation would result in substantial population increases, either through the development of new homes and businesses or through the construction of infrastructure, such as the extension of roads, that could lead to substantial new development. The proposed project includes the replacement of an existing bridge with a new bridge at the same location and of similar configuration. The proposed project would not change the existing capacity of the bridge and would not increase the number of employees required to support the maintenance and/or operational functions of the Islais Creek Bridge. Therefore, the proposed project would not result in indirect or direct population growth.

The proposed project would result in a temporary increase of employment at the site due to project construction activities. It is anticipated that the total number of workers active on the site at a given time would vary from 10 to 40 individuals, with an average of 20 workers over the approximately 24-month duration. The demand for construction employment would likely be met by the existing and future labor market in the Bay Area. If construction workers live outside of the Bay Area, these workers would likely commute to the project site during the approximately 24-month construction period. Therefore, the project would not induce substantial unplanned population growth either directly or indirectly in the project area; therefore, the proposed project would have ***no impact*** with respect to growth inducement, and no mitigation measures are required.

Impact PH-2: The proposed project would not displace substantial numbers of existing people or housing units, necessitating the construction of replacement housing. ***(No Impact)***

No residents or housing units would be displaced as none are currently located on the project site. Therefore, the project would have ***no impact*** related to the displacement of housing units or people and would not necessitate the construction of replacement housing. No mitigation measures are required.

Impact C-PH-1: The proposed project, in combination with cumulative projects, would not result in a significant cumulative impact related to population and housing. ***(No Impact)***

The proposed project would have ***no impact*** with respect to population and housing as the project proposes the replacement of the existing Islais Creek Bridge in similar configuration. Therefore, the proposed project would not combine with the effects of other cumulative projects to create a significant cumulative impact related to population and housing.

Topics:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
4. CULTURAL RESOURCES. Would the project:					
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5, including those resources listed in article 10 or article 11 of the San Francisco Planning Code?	☒	☐	☐	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐	☐
c) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐	☐

Impacts CR-1 and CR-2: The proposed project could cause a substantial adverse change in the significance of a historical resource pursuant to CEQA guidelines section 15064.5. ***(Potentially Significant)***

The proposed project would demolish the existing Islais Creek Bridge, which is a historical resource. Therefore, this project has the potential to result in a significant impact related to historical resources and this topic is addressed in draft EIR, Section 4.B, Historic Architectural Resources.

Impact CR-3: The proposed project could cause a substantial adverse change in the significance of an archeological resources pursuant to CEQA guidelines section 15064.5 and could disturb human remains, including those interred outside of formal cemeteries. ***(Less than Significant with Mitigation)***

Cultural resources can be classified as historic architectural resources, archeological resources, or human remains. Historic architectural resources—which are sometimes also called architectural resources, built resources, or other similar terms—include buildings, structures, objects, and districts, and are addressed in the draft EIR in Section 4.B, Historic Architectural Resources. Archeological resources generally refer to deposits, structural features, and objects below ground. Some archeological sites may also be considered Tribal Cultural Resources and are addressed in Section E.5, Tribal Cultural Resources, of this initial study.

As defined in the CEQA Guidelines section 15064.5, the term historical resource refers to culturally and/or historically significant buildings, structures, objects, sites, and districts that have historical, Native American,

architectural, archeological, cultural, or scientific importance. According to CEQA Guidelines section 15064.5(a), resources are considered to be historical resources under the following conditions:

- A resource listed in or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (California register) (California Public Resources Code [PRC] section 5024.1) is considered a historical resource.

- A resource included in a local register of historical resources, as defined in PRC section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC section 5024.1(g), will be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.

- Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record.

- The fact that a resource is not listed in or determined to be eligible for listing in the California register, not included in a local register of historical resources (pursuant to PRC section 5020.1(k)), or identified in a historical resources survey (meeting the criteria in PRC section 5024.1(g)) does not preclude a lead agency from determining that the resource may be a historical resource as defined in PRC sections 5020.1(j) or 5024.1.

To be eligible for the California register, a resource must be significant at the local, state, and/or federal level under one or more of the following evaluative criteria, as defined in PRC section 5024.1(c):

- Criterion 1 (Event): The resource is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

- Criterion 2 (Person): The resource is associated with the lives of persons important in our past;

- Criterion 3 (Design/Construction): The resource embodies the distinctive characteristics of a type, period, region, or method of construction; represents the work of an important creative individual; or possesses high artistic values; and

- Criterion 4 (Information Potential): The resource has yielded, or may be likely to yield, information important in prehistory or history.

Archeological resources are primarily evaluated under criterion 4, based on their ability to or likely ability to add to our understanding of history or Native America lifeways; although they can be significant under any of the above criteria.

NONUNIQUE ARCHEOLOGICAL RESOURCES

Under CEQA, for archeological resources that do not meet the criteria of historical resources, archeological resources are presumed to be nonunique unless they meet the definition of "unique archeological

resources" (CEQA section 21083.2[g]), as outlined below. Under CEQA, an impact on a nonunique archeological resource is not considered to be a significant environmental impact.

UNIQUE ARCHEOLOGICAL RESOURCES

Archeological resources can sometimes qualify as "unique archeological resources" that are not "historical resources" (CEQA guidelines section 15064.5(c)(3)). PRC section 21083.2(g) defines a unique archeological resource as an artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information; or
- Has a special and particular quality such as being the oldest of its type or the best available example of its type; or
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

California Office of Historic Preservation provides the following guidance on the evaluation of archeological resources: "Lead agencies should first evaluate an archeological site to determine if it meets the criteria for listing in the California register. If an archeological site is an historical resource (i.e., listed or eligible for listing in the California register), potential adverse impacts to it must be considered, just as for any other historical resource (PRC sections 21084.1 and 21083.2(l)). If an archeological site is not an historical resource, but meets the definition of a 'unique archeological resource' as defined in PRC section 21083.2, then it should be treated in accordance with the provisions of that section."

Based on this direction, the San Francisco Planning Department (planning department) firsts determines whether a known or potential archeological resource may be a historical resource based on the above-listed criteria before determining whether the resource meets the criteria of a unique archeological resource. If an archeological resource is not a historical resource according to CEQA, then the analysis moves to determining whether the resource is unique or nonunique.

CEQA Guidelines section 15064.5(b) prescribes that project effects that would "cause a substantial adverse change in the significance of an historical resource" are significant effects on the environment. Substantial adverse changes include physical changes to both the historical resource and its immediate surroundings.

A substantial adverse change in the significance of a resource means the physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings that would materially impair the significance of the historical resource. Actions that would materially impair the significance of a historical resource, in turn, are any actions that would demolish or adversely alter the physical characteristics that convey the property's historical significance and qualify it for inclusion in the California register, the national register, or in a local register or survey that meets the requirements of PRC sections 5020.1(k) and 5024.1(g).

If a project can be demonstrated to cause damage to an archeological resource that meets the criteria of a historical resource or a unique archeological resource, the lead agency may require reasonable efforts for such resources to be preserved in place or left in an undisturbed state. To the extent that resources cannot be left undisturbed and preserved in place, mitigation measures are required (section 21083.2[a], [b], and [c] and CEQA Guidelines section 15126.4(b)(3)). If an impact on a historical or archeological resource is significant, CEQA requires feasible measures to minimize the impact (CEQA Guidelines section 15126.4(a)(1)). Mitigation of

significant impacts must lessen or eliminate the physical impact that the project would have on the resource. CEQA requires that all feasible mitigation be undertaken even if it does not mitigate impacts to less-than-significant levels. CEQA Guidelines section 15126.4(a)(1) states that an EIR shall describe feasible measures that could minimize significant adverse impacts.

Based on the Islais Creek Bridge Project's preliminary archeological review memorandum,[4] the project has the potential to impact significant archeological resources. As stated in preliminary archeological review memorandum, based on sea-level rise modeling, the location of the current channel and northern bank of Islais Creek at the project location was inundated by the growth of San Francisco Bay more than 8,000 years ago, and the location of the southern bank was inundated approximately 8,000 years ago. On this basis, it appears that the potential for submerged Native American resources is low because the Native American population in the region around 8,000 years ago is believed to have been very small and widely distributed. Therefore, Native American archeological resources are not anticipated to be impacted by project activities.

However, significant historic-period archeological features that could be encountered by soil-disturbing activities include historic-period infrastructure, such as the Long Bridge (constructed in the 1860s) and bulkhead wall infrastructure constructed along the creek channel dating to the late 19th or early 20th centuries. The Long Bridge was built between 1865 and 1867 along approximately the same alignment as the existing Islais Creek Bridge. The Long Bridge provided much-needed connection from the foot of Fourth Street, across Potrero Hill, to Hunters Point, and is associated with spurring industrial development across the southeastern portion of the city during the late 19th century.[5] If encountered during project activities, the Long Bridge and associated materials may provide historical information concerning the construction of this significant structure built in the 1860s, which is also associated with significant trends in the development of the southern waterfront. Additionally, redwood bulkhead retaining wall infrastructural remains were previously identified along Islais Creek channel and identified to be significant under the California register criteria 1 and 4.[6] Therefore, the proposed project impacts to archeological resources would be ***less than significant*** with implementation of **Mitigation Measure M-CR-3: Accidental Discovery**, which includes provisions for the discovery of archeological features during soil-disturbing activities.

Mitigation Measure M-CR-3: Accidental Discovery

> ***Construction Crew Archeological Awareness.*** Prior to any soils-disturbing activities being undertaken, a qualified archeologist shall conduct a brief on-site archeological awareness training that describes the types of resources that might be encountered and how they might be recognized, and requirements and procedures for work stoppage, resource protection and notification in the event of a potential archeological discovery. The archeologist or the project sponsor also shall distribute the department's "Alert" wallet card and the department's "ALERT" sheet, that summarizes stop work requirements and provides necessary contact information for the planning department's archeological staff and project sponsor to all field personnel involved in soil disturbing activities, including machine operators, field crew, pile drivers, supervisory personnel, etc., have received. The qualified archeologist shall repeat the training at intervals during construction, as determined necessary by the environmental review officer (ERO), including when new construction

[4] San Francisco Planning, Environmental Planning Preliminary Archeological Review (PAR) Memorandum, prepared February 22, 2023 for Islais Bridge Project (Case No. 2022-000112ENV).

[5] San Francisco Bayside, Historical Cultural Resource Survey, Roger Olmsted, Nancy Olmsted, David Fredrickson, Vance Bente, Allen Pastron, and Jack Prichett, April 1982. On file at San Francisco Planning Department.

[6] Bay Corridor Transmission and Distribution Project – Archaeological Discovery Results for UAD-8 (SF Planning Case. No. 2016-007915ENV), memorandum, Melissa Cascella, J. Tait Elder, Jennifer Wildt, ICF, April 19, 2023. On file at the San Francisco Planning Department.

personnel start work and prior to periods of soil disturbing work when the project archeologist will not be on site.

Tribal Cultural Resources Sensitivity Training. In addition to and concurrently with the archeological awareness training, the project sponsor shall ensure that a local Native American representative is afforded the opportunity to provide a Native American cultural resources sensitivity training to all construction personnel.

Procedures Upon Discovery of a Suspected Archeological Resource. The following measures shall be implemented in the event of a suspected archeological discovery during project soil-disturbing activities:

Discovery Stop Work and Environmental Review Officer Notification. Should any indication of an archeological resource be encountered during any soils-disturbing activity of the project, the project sponsor shall immediately notify the ERO and shall immediately suspend any soils-disturbing activities in the vicinity of the discovery and protect the find in place until the significance of the find has been evaluated and the ERO has determined whether and what additional measures are warranted, and these measures have been implemented, as detailed below. The ERO may also require that the project sponsor immediately implement a site security program if the archeological resource is at risk from vandalism, looting, or other damaging actions.

Archeological Consultant Identification. If an archeological discovery during construction occurs and the ERO determines that the discovery may represent a significant archeological resource, the project sponsor shall retain the services of an archeological consultant (hereinafter "project archeologist") from a firm listed on the Qualified Archeological Consultant list maintained by the department to identify, document, and evaluate the resource, under the direction of the ERO. The project sponsor shall ensure that the project archeologist or designee is empowered, for the remainder of soil-disturbing project activity, to halt soil disturbing activity in the vicinity of potential archeological finds, and that work remains halted until the discovery has been assessed and a treatment determination made, as detailed below.

Resource Evaluation and Treatment Determination.

Initial documentation and assessment. The project archeologist shall document the find and make a reasonable effort to assess its identity, integrity, and significance of the encountered archeological deposit through sampling or testing, as needed. The project sponsor shall make provisions to ensure that the project archeologist can safely enter the excavation, if feasible. The project sponsor shall ensure that the find is protected until the ERO has been consulted and has determined appropriate subsequent treatment in consultation with the project archeologist, and the treatment has been implemented, as detailed below.

The project archeologist shall make a preliminary assessment of the significant and physical integrity of the archeological resource and shall present the findings to the ERO. If, based on this information, the ERO determines that construction would result in impacts to a significant resource, the ERO shall consult with the project sponsor and other parties regarding the feasibility and effectiveness of preservation-in-place of the resource, as detailed below.

Native American archeological deposits and tribal notification. All Native American archeological deposits shall be assumed to be significant unless determined otherwise in consultation with the ERO. If a Native American archeological deposit is encountered, soil disturbing work shall be halted as detailed above. In addition, the ERO shall notify any tribal representatives who, in response to the project tribal cultural resource notification, requested to be notified of discovery of Native American archeological resources in order to coordinate on the treatment of archeological and tribal cultural resources. Further the project archeologist shall offer a Native American representative the opportunity to monitor any subsequent soil disturbing activity that could affect the find.

Paleosols. Should a paleosol be identified, the project archeologist shall extract and process samples for dating, paleobotanical analysis, and other applicable special analyses pertinent to identification of possible cultural soils and for environmental reconstruction.

Archeological site records. After assessment of any discovered resources, the project archeologist shall prepare an archeological site record or primary record (DPR 523 series) for each documented resource. In addition, a primary record shall be prepared for any prehistoric isolate. Each such record shall be accompanied by a map and GIS location file. Records shall be submitted to the planning department for review as attachments to the archeological resources report (see below) and once approved by the ERO, to the Northwest Information Center.

Plans and reports. All archeological plans and reports identified herein and in the subsequent measures, shall be submitted by the project archeologist directly to the ERO for review and comment and shall be considered draft reports subject to revision until final approval by the ERO. The project archeologist may submit draft reports to the project sponsor simultaneously with submittal to ERO.

Limit on construction delays for archeological treatment. Archeological testing and as applicable data recovery programs required to address archeological discoveries, pursuant to this measure, could suspend construction of the project for up to a maximum of four weeks. At the direction of the ERO, the suspension of construction can be extended beyond four weeks only if such a suspension is the only feasible means to reduce to a less than significant level potential effects on a significant archeological resource as defined in the CEQA Guidelines.

Preservation-in-place consideration. Should an archeological resource that meets California register significance criteria be discovered during construction, archeological testing, or monitoring, preservation-in-place (i.e., permanently protect the resource from further disturbance and take actions, as needed, to preserve depositional and physical integrity) of the entire deposit or feature is the preferred treatment option. The ERO shall consult with the project sponsor—and, for Native American archeological resources, with tribal representatives, if requested—to consider the feasibility of permanently preserving the resource in place. If preservation in place is determined by the ERO to be feasible and effective, the project archeologist and project sponsor, in consultation with the ERO, shall prepare a Cultural Resources Preservation Plan. For Native American archeological resources, the project archeologist shall also consult with the tribal representatives, and the Cultural Resources Preservation Plan shall take into consideration the cultural significance of the tribal cultural resource to the tribes. Preservation options may include measures such as design of the project layout to place open space over the resource location; foundation design to avoid the use of pilings or deep excavations in the sensitive area; a plan to expose and conserve the

resource and include it in an on-site interpretive exhibit; tribal representatives for review and for ERO approval. The project sponsor shall ensure that the approved plan is implemented and shall coordinate with the department to ensure that disturbance of the resource will not occur in future, such as establishing a preservation easement.

If, based on this consultation, the ERO determines that preservation-in-place is infeasible or would be ineffective in preserving the significance of the resource, archeological data recovery and public interpretation of the resource shall be carried out, as detailed below. The ERO in consultation with the project archeologist shall also determine whether and what additional treatment is warranted, which may include additional testing, construction monitoring, and public interpretation of the resource, as detailed below.

Coordination with Descendant Communities. On discovery of an archeological site associated with descendant Native Americans, Chinese, or other identified descendant cultural group, the project archeologist shall contact an appropriate representative of the descendant group and the ERO. The representative of the descendant group shall be offered the opportunity to monitor archeological field investigations of the site and to offer recommendations to the ERO regarding appropriate archeological treatment of the site and data recovered from the site, and, if applicable, any interpretative treatment of the site. The project archeologist shall provide a copy of the Archeological Resources Report (ARR) to the representative of the descendant group.

Compensation. Following on the initial tribal consultation, the ERO, project sponsor and project archeologist, as appropriate, shall work with the tribal representative or other descendant or descendant community representatives to identify the scope of work for a representative to fulfill the requirements of this mitigation measure, which may include participation in archeological monitoring, preparation and review of deliverables (e.g., plans, interpretive materials, art work). Tribal representatives or other descendant community representatives for archeological resources or tribal cultural resources, who complete tasks in the agreed upon scope of work project, shall be compensated for their work as identified in the agreed upon scope of work.

Archeological Data Recovery Program. The project archeologist shall prepare an archeological data recovery plan if all three of the following apply: (1) a potentially significant resource is discovered, (2) preservation-in-place is not feasible, as determined by the ERO after implementation of the Preservation-in-Place Consideration procedures, and (3) the ERO determines that archeological data recovery is warranted. When the ERO makes such a determination, the project archeologist, project sponsor, ERO and, for tribal cultural archeological resources, the tribal representative, if requested by a tribe, shall consult on the scope of the data recovery program. The project archeologist shall prepare a draft archeological data recovery plan and submit it to the ERO for review and approval. If the time needed for preparation and review of a comprehensive archeological data recovery plan would result in a significant construction delay, the scope of data recovery may instead be agreed upon in consultation between the project archeologist and the ERO and documented by the project archeologist in a memorandum to the ERO. The archeological data recovery plan/memorandum shall identify how the proposed data recovery program will preserve the significant information the archeological resource is expected to contain. That is, the archeological data recovery plan/ memorandum will identify what scientific/historical research questions are applicable to the expected resource, what data classes the resource is expected to possess, and how the expected data classes would address the applicable research questions. Data recovery, in general, should be

limited to the portions of the property that could be adversely affected by the proposed project. Destructive data recovery methods shall not be applied to portions of the archeological resource that would not otherwise by disturbed by construction if nondestructive methods are practical.

The archeological data recovery plan shall include the following elements:

- Field Methods and Procedures: Descriptions of proposed field strategies, procedures, and operations
- Cataloguing and Laboratory Analysis: Description of selected cataloguing system and artifact analysis procedures
- Discard Policy: Description of and rationale for field and post-field discard and deaccession policies
- Security Measures: Recommended security measures to protect the archeological resource from vandalism, looting, and non-intentionally damaging activities
- Report of Data Recovery Results: Description of proposed report format and distribution of results
- Public Interpretation: Description of potential types of interpretive products and locations of interpretive exhibits based on consultation with project sponsor
- Curation: Description of the procedures and recommendations for the curation of any recovered data having potential research value, identification of appropriate curation facilities, and a summary of the accession policies of the curation facilities

The project archeologist shall implement the archeological data recovery program upon approval of the archeological data recovery plan/memorandum by the ERO.

Coordination of Archeological Data Recovery Investigations. In cases in which the same resource has been or is being affected by another project for which data recovery has been conducted, is in progress, or is planned, the following measures shall be implemented to maximize the scientific and interpretive value of the data recovered from both archeological investigations:

- In cases where an investigation has not yet begun, project archeologists for each project impacting the same resource and the ERO, as applicable, shall consult on coordinating and collaborating on archeological research design, data recovery methods, analytical methods, reporting, curation and interpretation to ensure consistent data recovery and treatment of the resource.
- In cases where archeological data recovery investigation is under way or has been completed for a project, the project archeologist for the subsequent project shall consult with the prior project archeologist, if available; review prior treatment plans, findings and reporting; and inspect and assess existing archeological collections/inventories from the site prior to preparation of the archeological treatment plan for the subsequent discovery, and shall incorporate prior findings in the final report for the subsequent investigation. The objectives of this coordination and review of prior methods and findings shall be to identify refined research questions; determine appropriate data recovery methods and analyses; assess new findings relative to prior research findings; and integrate prior findings into subsequent reporting and interpretation.

Treatment of Human Remains and Funerary Objects. If human remains or suspected human remains are encountered during construction, the contractor and project sponsor shall ensure that ground-disturbing work within 50 feet of the remains is halted immediately and shall arrange for the protection in place of the remains until appropriate treatment and disposition have been agreed upon and implemented in accordance with this measure. The treatment of any human remains and funerary objects discovered during any soil- disturbing activity shall comply with applicable state laws, including Health and Safety Code section 7050.5 and PRC section 5097.98. Upon determining that the remains are human, the project archeologist shall immediately notify the Medical Examiner of the City and County of San Francisco, the ERO, and the project sponsor of the find.

If the remains cannot be permanently preserved in place, the landowner or designee shall consult with the most likely descendant and may consult with the project archeologist, project sponsor and the ERO on recovery of the remains and any scientific treatment alternatives. The landowner shall then make all reasonable efforts to develop a burial agreement (agreement) with the most likely descendant, as expeditiously as possible, for the treatment and disposition, with appropriate dignity, of human remains and funerary objects (as detailed in CEQA Guidelines section 15064.5(d)). Per PRC section 5097.98(c)(1), the agreement shall address, as applicable and to the degree consistent with the wishes of the most likely descendant, the appropriate excavation, removal, recordation, scientific analysis, custodianship prior to reinternment or curation, and final disposition of the human remains and funerary objects. If the most likely descendant agrees to scientific analyses of the remains and/or funerary objects, the project archeologist shall retain possession of the remains and funerary objects until completion of any such analyses, after which the remains and funerary objects shall be reinterred or curated as specified in the agreement.

If the landowner or designee and the most likely descendant are unable to reach an agreement on scientific treatment of the remains and/or funerary objects, the ERO, in consultation with the project sponsor shall ensure that the remains and/or funerary objects are stored securely and respectfully until they can be reinterred on the project site, with appropriate dignity, in a location not subject to further or future subsurface disturbance, in accordance with the provisions of state law.

Treatment of historic-period human remains and/or funerary objects discovered during any soil-disturbing activity shall be in accordance with protocols laid out in the research design in the project archeological monitoring plan, archeological testing plan, archeological data recovery plan, and other relevant agreements established between the project sponsor, medical examiner, and the ERO. The project archeologist shall retain custody of the remains and associated materials while any scientific study scoped in the treatment document is conducted and the remains shall then be curated or respectfully reinterred by arrangement on a case-by case-basis.

Cultural Resources Public Interpretation Plan and Land Acknowledgement. If a significant archeological resource (i.e., a historical resource or unique archeological resources as defined by CEQA Guidelines section 15064.5) is identified and the ERO determines that public interpretation is warranted, the project archeologist shall prepare a Cultural Resources Public Interpretation Plan. The Cultural Resources Public Interpretation Plan shall describe the interpretive products, locations or distribution of interpretive materials or displays, the proposed content and materials, the producers or artists of the displays or installation, and a long-term maintenance program.

If the resource to be interpreted is a tribal cultural resource, the department shall notify Native American tribal representatives that public interpretation is being planned. If requested by tribal representatives, the Cultural Resources Public Interpretation Plan shall be prepared in consultation with and developed with the participation of Native American tribal representatives. For public projects or projects that include dedicated public spaces, the interpretive materials may include an acknowledgement that the project is located upon traditional Ohlone lands. For interpretation of a tribal cultural resource, the interpretive program may include a combination of artwork, preferably by local Native American artists, educational panels or other informational displays, a plaque, or other interpretative elements including digital products that address Native American experience and the layers of history. As feasible, and where landscaping is proposed, the interpretive effort may include the use and the interpretation of native and traditional plants incorporated into the proposed landscaping.

The project archeologist shall submit the cultural resources public interpretation plan and drafts of any interpretive materials that are subsequently prepared to the ERO for review and approval. The project sponsor shall ensure that the cultural resources public interpretation plan is implemented prior to occupancy of the project.

Archeological Resources Report. If significant archeological resources, as defined by CEQA Guidelines section 15064.5, are encountered, the project archeologist shall submit a confidential draft Archeological Resources Report to the ERO. This report shall evaluate the significance of any discovered archeological resource, describe the archeological and historical research methods employed in the archeological programs undertaken, the results and interpretation of analyses, and discuss curation arrangements.

Once approved by the ERO, the project archeologist shall distribute the approved Archeological Resources Report as follows: copies that meet current information center requirements at the time the report is completed to the California Archeological Site Survey Northwest Information Center, and a copy of the transmittal of the approved Archeological Resources Report to the Northwest Information Center to the ERO; one bound hardcopy of the Archeological Resources Report, along with digital files that include an unlocked, searchable PDF version of the Archeological Resources Report, GIS shapefiles of the site and feature locations, any formal site recordation forms (CA DPR 523 series), and/or documentation for nomination to the National Register of Historic Places/ California register, via USB or other stable storage device, to the environmental planning division of the planning department; and, if a descendant group was consulted, a digital or hard copy of the Archeological Resources Report to the descendant group, depending on their preference

Curation. If archeological data recovery is undertaken, the project archeologist and the project sponsor shall ensure that any significant archeological collections and paleoenvironmental samples of future research value shall be permanently curated at an established curatorial facility. The facility shall be selected in consultation with the ERO. Upon submittal of the collection for curation, the project sponsor or archeologist shall provide a copy of the signed curatorial agreement to the ERO.

Impact C-CR-1: The proposed project, in combination with cumulative projects, could result in the demolition and/or alteration of historical resources, as defined in CEQA Guidelines section 15064.5. ***(Potentially Significant)***

This topic is analyzed in draft EIR Section 4.B, Historic Architectural Resources.

Impact C-CR-2: The proposed project, in combination with cumulative projects, would not result in significant cumulative impacts to cultural resources. ***(Less than Significant)***

The geographic context for cumulative cultural resources impacts (archeological resources and human remains) is generally confined to the project site and projects in the immediate vicinity of the project site that might affect resources that also could be affected by the project. Cumulative projects are identified in Section 4.A.6, Cumulative Impacts, of the draft EIR. There are no cumulative projects that would overlap with or are directly adjacent to the project site; therefore, cumulative projects would not impact the same cultural resources as the proposed project. Therefore, the proposed project would not combine with cumulative projects to result in a significant cumulative impact on cultural resources. Cumulative impacts on cultural resources would be ***less than significant***, and no mitigation measures are required.

Topics:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
5. TRIBAL CULTURAL RESOURCES. Would the project:					
a) 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, or 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:					
i) 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	☐	☒	☐	☐	☐
ii) 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.	☐	☒	☐	☐	☐

Impact TCR-1: The proposed project would result in a substantial adverse change in the significance of a tribal cultural resource that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources, or determined by the lead agency, in its discretion and supported by substantial evidence, to be significant. ***(Less than Significant with Mitigation)***

CEQA section 21074.2 requires the lead agency to consider the effects of a project on tribal cultural resources. As defined in section 21074, *tribal cultural resources* are sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are listed, or determined to be eligible for listing, on the national, state, or local register of historical resources.

Based on Native American consultation undertaken since 2015, with the passage of Assembly Bill 52 and the addition of tribal cultural resources (TCRs) to CEQA review, all Native American archeological resources are determined to be TCRs. Additionally, based on Native American consultation undertaken for the Housing Element 2022 Update EIR,[7] the following locations are identified as culturally important to local Ohlone and, therefore, determined to be potential tribal cultural resources:

- locations modeled as having high sensitivity for Native American archeological resources, confirming the previous Native American consultation;
- the shoreline and marsh zone associated with natural environmental change over the period between about 8,000 years ago and 170 years ago, including areas modeled as having high sensitivity for archeological resources that were submerged by the rising bay;
- known historical locations of creek channels, ponds, marshes, and other wetlands; and
- the modern San Francisco Bay and ocean shoreline, as well as the shores of remnant creek channels, lakes, and ponds that are characterized by above-ground water today.

Based on the Native American consultation, the Islais Creek channel, which is included in the proposed project area, would be considered culturally important to local Ohlone, and therefore is considered a tribal cultural resource for the purpose of this review.

Pursuant to CEQA section 21080.3.1(d), on February 23, 2023, the planning department contacted Native American tribal representatives and organizations for the City and County of San Francisco, providing a description of the project and notifying Native American tribal representatives of their ability to request consultation on the identification, presence, and significance of tribal cultural resources in the project vicinity. During the 30-day notification period, the planning department did receive requests for consultation. The planning department followed up with telephone calls on March 30, 2023, to all Native American tribal representatives and organization for San Francisco, and follow-up emails for those representatives not reached through telephone.

Responses were received from the Amah Mutsun Tribal Band of Mission San Juan Bautista and the Indian Canyon Mutsun Band of Costanoan, who recommended sensitivity training and an archeological monitor and Native American monitor if a resource is identified. The Indian Canyon Mutsun Band of Costanoan sent

[7] San Francisco Planning Department. Housing Element 2022 Update EIR. Planning Department Case No. 2019-016230ENV and State Clearinghouse No. 2021060358, *https://sfplanning.org/environmental-review-documents?title=Housing+Element&field_environmental_review_categ_target_id=212&items_per_page=10*.

an email on April 12, 2023, requesting consultation, and the planning department conducted consultation on May 5, 2023. The Indian Canyon Mutsun Band of Costanoan confirmed the cultural significance of both historical and modern waterways to the local Ohlone. The tribal representative did not find that the replacement of the existing bridge with a new bridge in the same location would result in a significant impact to the Islais Creek channel. The tribal representative did include a request for holistic public interpretation of the history of the area, and a request that the public be informed of the history and significance of the Islais Creek bridge, which is addressed in **Mitigation Measure M-CR-3: Accidental Discovery**. Additionally, the tribal representative discussed the importance of ecological diversity and native plants if the proposed project included new planting along the creek. These recommendations will be incorporated into the project.

As noted above, based on Native American consultation, Native American archeological resources are considered to be potential tribal cultural resources. A tribal cultural resource is adversely affected when a project impacts its significance, which would occur if such a resource were disturbed or destroyed. If a Native American archeological resource was found to be present in the project site, the resource would be considered a potential tribal cultural resource, and construction damage to the resource would be a significant impact. As discussed in Section E.4, Cultural Resources, of this initial study, the study area for the project is not considered sensitive for containing buried Native American archaeological resources. However, if the proposed project were to encounter buried Native American archeological resources that are also considered to be tribal cultural resources, impacts to these resources would be addressed with implementation of **Mitigation Measure M-CR-3: Accidental Discovery**, as described in Section E.4, Cultural Resources, above.

Implementation of **Mitigation Measure M-CR-3: Accidental Discovery** would require worker awareness training, which would include distribution of the planning department's "ALERT" sheet for appropriate personnel; training provided to workers by a qualified archeologist; as well as tribal cultural resources sensitivity training provided by a local Native American representative, as requested by tribal representatives for this project. Additionally, if a tribal cultural resource is identified during construction activities, **Mitigation Measure M-CR-3: Accidental Discovery** identifies appropriate treatment of the resources, including consultation with Native American representatives, Native American monitoring, and public interpretation of the resource in coordination with Native American representatives. Therefore, **Mitigation Measure M-CR-3: Accidental Discovery** would reduce impacts to ***less than significant***.

Impact C-TCR-1: The proposed project, in combination with cumulative projects, would not result in a significant cumulative impact on tribal cultural resources. ***(Less than Significant)***

The geographic context for cumulative tribal cultural resources impacts is generally confined to the project site and projects in the immediate vicinity of the project site that might affect resources that also could be affected by the project. Cumulative projects are identified in Section 4.A.6, Cumulative Impacts, of the draft EIR. There are no cumulative projects that would overlap with or are directly adjacent to the project site, because these projects are between approximately 3,600 feet and one mile from the project site. Therefore, cumulative projects would not impact the same tribal cultural resources as the proposed project. Therefore, the proposed project would not combine with cumulative projects to result in a significant cumulative impact on tribal cultural resources. Cumulative impacts on tribal cultural resources would be ***less than significant***, and no mitigation measures are required.

Topics:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
6. TRANSPORTATION AND CIRCULATION. Would the project:					
a) Involve construction that would require a substantially extended duration or intensive activity, and the effects would create potentially hazardous conditions for people walking, bicycling, or driving, or public transit operations; or interfere with emergency access or accessibility for people walking or bicycling; or substantially delay public transit?	☒	☐	☐	☐	☐
b) Create potentially hazardous conditions for people walking, bicycling, or driving or public transit operations?	☐	☐	☒	☐	☐
c) Interfere with accessibility of people walking or bicycling to and from the project site, and adjoining areas, or result in inadequate emergency access?	☐	☐	☒		☐
d) Substantially delay public transit?	☐	☐	☒	☐	☐
e) Cause substantial additional vehicle miles traveled or substantially induce additional automobile travel by increasing physical roadway capacity in congested areas (i.e., by adding new mixed-flow travel lanes) or by adding new roadways to the network?	☐	☐	☒	☐	☐
f) Result in a loading deficit, and the secondary effects would create potentially hazardous conditions for people walking, bicycling, or driving; or substantially delay public transit?	☐	☐	☒	☐	☐
g) Result in a substantial vehicular parking deficit, and the secondary effects would create potentially hazardous conditions for people walking, bicycling, or driving; or interfere with accessibility for people walking or bicycling or inadequate access for emergency vehicles; or substantially delay public transit?	☐	☐	☒	☐	☐

The proposed project could result in significant transportation and circulations impacts. See draft EIR Section 4.C, Transportation and Circulation.

Topics:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
7. NOISE. Would the project result in:					
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan area or, where such a plan has not been adopted, in an area within two miles of a public airport or public use airport, would the project expose people residing or working in the area to excessive noise levels?	☐	☐	☐	☐	☒

The project site is not in an airport land use plan area, within 2 miles of a public airport, or in the vicinity of a private airstrip. Therefore, topic 7(c) is not applicable to the proposed project.

NOISE OVERVIEW

Noise is generally defined as unwanted sound. Sound travels in the form of waves from its source, exerting a sound pressure level (referred to as "sound level") that is measured in decibels (dB). Decibels are measured on a logarithmic scale because sound pressure varies widely within the range of human hearing. Because the human ear is not equally sensitive to all sound levels, noise measurements are weighted more heavily for the frequencies that correspond to the human ear's decreased sensitivity to extremely low and high sound levels. This method of frequency weighting is referred to as A-weighting and the units of measure are A-weighted decibels, or dBA. Noise levels are measures of noise at a given instant in time. Environmental noise levels fluctuate over time, depending on the sources of sound that contribute to the community noise environment. Background noise levels change throughout a typical day, based on the changes in sources such as traffic, and on the addition of short-duration, single-event noise sources such as aircraft flyovers, emergency vehicle sirens, and nearby noisy motor vehicles. The time-varying characteristic of environmental noise is typically described using the following statistical noise descriptors:

- noise-level equivalent (L_{eq}), used to describe noise over a specified period of time in terms of a single value, also referred to as the "average" sound level
- maximum noise level (L_{max}), the maximum instantaneous noise level measured over a specified period of time
- day-night average noise level (L_{dn}), averaging the A-weighted noise level during a 24-hour day, after an addition of 10 dB to measured noise levels between the hours of 10 p.m. and 7 a.m. to account for greater nighttime noise sensitivity

- Community Noise Equivalent Level, which is similar to L_{dn} but also includes an addition of 5 dB to measured noise levels between 7 p.m. and 10 p.m. after the addition of 10 dB to the measured noise levels between 10 p.m. and 7 a.m. to account for greater noise sensitivity in the evening and nighttime

For a stationary point-source, sound typically attenuates (decreases) at a rate of 6 dB for each doubling of distance (e.g., a sound level of 80 dB at 50 feet would decrease to 74 dB at 100 feet and 68 dB at 200 feet). For a line source such as traffic on a roadway, sound attenuates at a rate of approximately 3 dB for each doubling of distance for hard sites and 4.5 dB for soft sites (e.g., grass or scattered bushes and trees). Barriers such as buildings that block the line of sight between the sound source and the receiver increase the attenuation of sound over an equivalent distance. The effects of noise on people range from annoyance and interference with speech to sleep disturbance—and, under extremely noisy conditions, hearing impairment. There is a wide variation in the sound levels that cause annoyance in different receivers, depending in part on the existing (ambient) noise level. Except in carefully controlled laboratory environments, a change of 1 or 2 dBA cannot be perceived. In a typical environment, a change of 3 dBA is a barely perceptible difference, a change of 5 dBA is readily perceptible, and a change of 10 dB is generally perceived as a doubling of loudness.

VIBRATION OVERVIEW

Groundborne vibration from construction activities can produce detectable vibration at nearby buildings, infrastructure, and sensitive receptors. The main concerns associated with construction-generated vibration include sleep disturbance, building damage, and interference with vibration-sensitive instruments or machinery, such as that used in research laboratories or hospitals. The potential for construction activities to generate vibration affecting each of these receptor types is discussed below, following the discussion of vibration levels that may be generated during construction. Potential vibration-related impacts to structures, equipment, utilities, or people from construction are generally limited to the use of impact equipment such as pile drivers (impact and vibratory), hoe rams, and vibratory compactors. Vibration intensity is expressed as peak particle velocity (PPV), the maximum speed at which the ground moves while it temporarily shakes. Because ground-shaking speeds are very slow, PPV is measured in inches per second. Vibration-sensitive buildings include historic buildings, residential structures, and buildings where vibration-sensitive equipment is used, such as hospitals or medical facilities. The nearest buildings to the project site are at least 50 feet along Third Street.

Impact NO-1: Construction of the proposed project would not generate a substantial temporary increase in ambient noise levels in the vicinity of the proposed project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. ***(Less than Significant)***

Construction noise is regulated by the San Francisco Police Code, article 29, sections 2907 and 2908. Police Code section 2907 requires that noise levels from individual pieces of construction equipment, other than impact tools, not exceed 80 dBA at 100 feet from the source. Impact tools are not subject to the equipment noise limit—provided that impact tools and equipment would have intake and exhaust mufflers recommended by the manufacturers, and are approved by the Director of Public Works or the Director of Building Inspection as best accomplishing maximum noise attenuation. Pavement breakers and jackhammers would also be equipped with acoustically attenuating shields or shrouds recommended by the manufacturers and approved by the Director of Public Works or the Director of Building Inspection as best accomplishing maximum noise attenuation.

Police Code section 2908 prohibits construction work between 8 p.m. and 7 a.m. if noise would exceed the ambient noise level by 5 dBA at the project property line, unless a special permit is authorized by the Director of Public Works or the Director of Building Inspection. The proposed project is required to comply with Police Code section 2907. Because the proposed project would not include nighttime construction, Police Code section 2908 would not apply. In addition to the construction noise regulations implemented in Police Code sections 2907 and 2908, the planning department uses a criterion of 10 dB above the ambient noise level to assess substantial temporary ambient noise level increases from construction. A 10 dB increase in ambient noise levels corresponds to a perceived doubling of loudness. This criterion applies at the property lines of the nearest sensitive receivers. In addition, the planning department supplements the construction noise analysis with guidance provided in the Construction Noise Assessment of the Federal Transit Administration Transit Noise and Vibration Assessment Manual. [8] Specifically, the planning department uses the general assessment daytime residential noise limit of 90 dBA at residential receptors, as developed by the Federal Transit Administration. This assessment results in a reasonable worst-case scenario because it is based on the assumption that the two noisiest pieces of equipment would operate simultaneously.

If any of the above criteria are exceeded (10 dB increase in ambient noise levels, 90 dBA at noise-sensitive receptors), the planning department would evaluate the temporal frequency, duration, and intensity of the exceedance when determining whether construction noise could result in a substantial temporary increase in ambient noise levels. A noise technical memorandum was prepared for the proposed project, which presented the calculations for potential construction-related noise and vibration levels. [9] The construction noise analysis evaluated the simultaneous operation of the two noisiest pieces of equipment. The memorandum provides a description of the regulatory framework and detailed calculations of construction-related noise.

The construction period for the Islais Creek Bridge Project would last approximately 24 months. During construction of the proposed project, noise levels would fluctuate depending on the type, number, and duration of use for the various pieces of construction equipment. The effects of construction noise largely depend on the type of construction activities occurring on any given day, noise levels generated by those activities, distances to noise-sensitive receptors, and the existing ambient noise environment in the receptor's vicinity. Construction is anticipated to use typical 8-hour work shifts during daylight hours; nighttime and weekend construction are not anticipated. It is anticipated that the total number of workers active on the site at a given time would vary from 10 to 40 individuals, with an average of 20 workers over the 24-month duration. Various types of heavy construction equipment would be used during demolition of the existing bridge and construction of the new bridge. Equipment types may include, but would not be limited to, barges, concrete trucks, cranes, excavators, and drilling equipment.

EXISTING NOISE LEVELS IN PROJECT VICINITY

Ambient noise levels in the project vicinity are typical of noise levels found in an urban setting. The existing noise environment in the vicinity of the project is mostly influenced by surface transportation (e.g., light rail operations and vehicular traffic along Third Street) and natural sources (e.g., wind and birds). Four long-term (LT) and two short-term (ST) measurements were made to define existing ambient conditions in the project vicinity. Ambient noise level survey locations are shown on Figure 5.

[8] Federal Transit Administration, Transit Noise and Vibration Assessment Manual, September 2018.
[9] AECOM Technical Services Inc., Islais Creek Bridge Project Construction Noise/Vibration Technical Memorandum, September 2023.

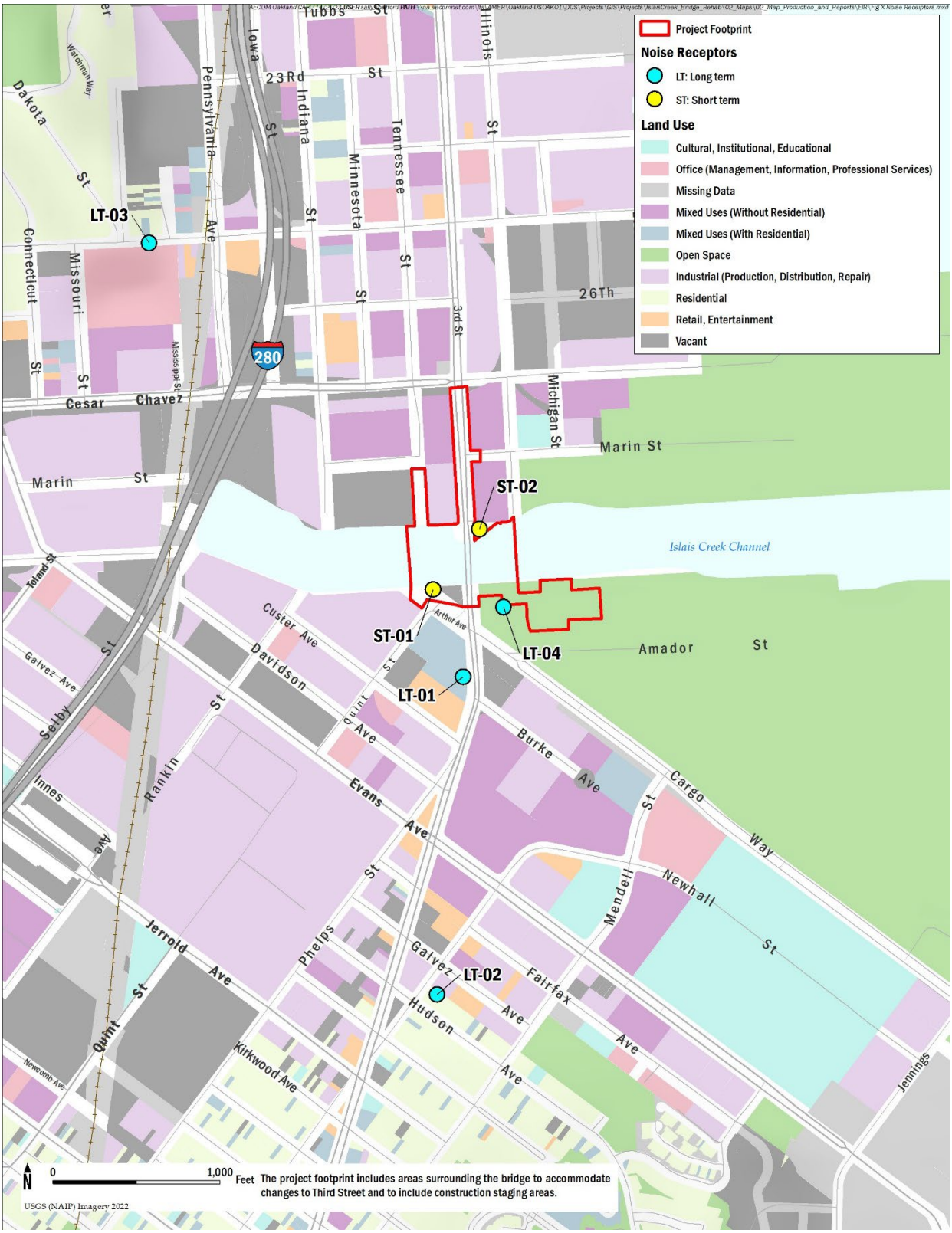

Figure 5 Ambient Noise Survey Locations

EXISTING NOISE-SENSITIVE RECEPTORS

Residences, schools, places of worship, hotels, libraries, health facilities, and other places where low interior noise levels are essential are considered noise-sensitive land uses and more sensitive to noise disturbances compared to commercial or industrial land uses. Noise-sensitive receptors in the vicinity of the project site include the Bayview Child Health Center, single-family and multi-family residential uses, and San Francisco Fire Station 25[10] (see Figure 6). The results for each noise level measurement location are summarized in Table 1.

Table 1 Summary of Ambient Noise Level Survey Results (dBA)

Location	Daytime (7 a.m. to 7 p.m.)		Nighttime (7 p.m. to 7 a.m.)		L_{dn}	Noise Sources
	L_{eq}	L_{max}	L_{eq}	L_{max}		
LT-01 Bayview Child Health Center	68.0	88.9	63.1	82.4	70.6	Vehicular traffic and T-Third Street light rail service on Third Street
LT-02 Southwestern corner of Newhall Street and Galvez Avenue	62.6	84.5	58.6	76.5	65.8	Vehicular traffic on Newhall Street and Galvez Avenue
LT-03 Across 1506 25th Street	64.7	86.8	61.2	81.7	68.3	Vehicular traffic on 25th Street
LT-04 San Francisco Fire Station 25	67.1	80.4	57.4	74.7	67.2	Vehicular traffic and T-Third Street light rail service on Third Street
ST-01 Islais Creek Park	61.6	68.2	N/A	N/A	N/A	Vehicular traffic and T-Third Street light rail service on Third Street
ST-02 Tulare Park	65.7	78.3	N/A	N/A	NA	Vehicular traffic and T-Third Street light rail service on Third Street

Notes:

dBA = A-weighted decibel
L_{dn} = day-night average noise level
L_{eq} = noise-level equivalent
L_{max} = maximum noise level
N/A = not applicable

[10] The fire station is considered a sensitive noise receptor for the purpose of this analysis because people sleep at the station.

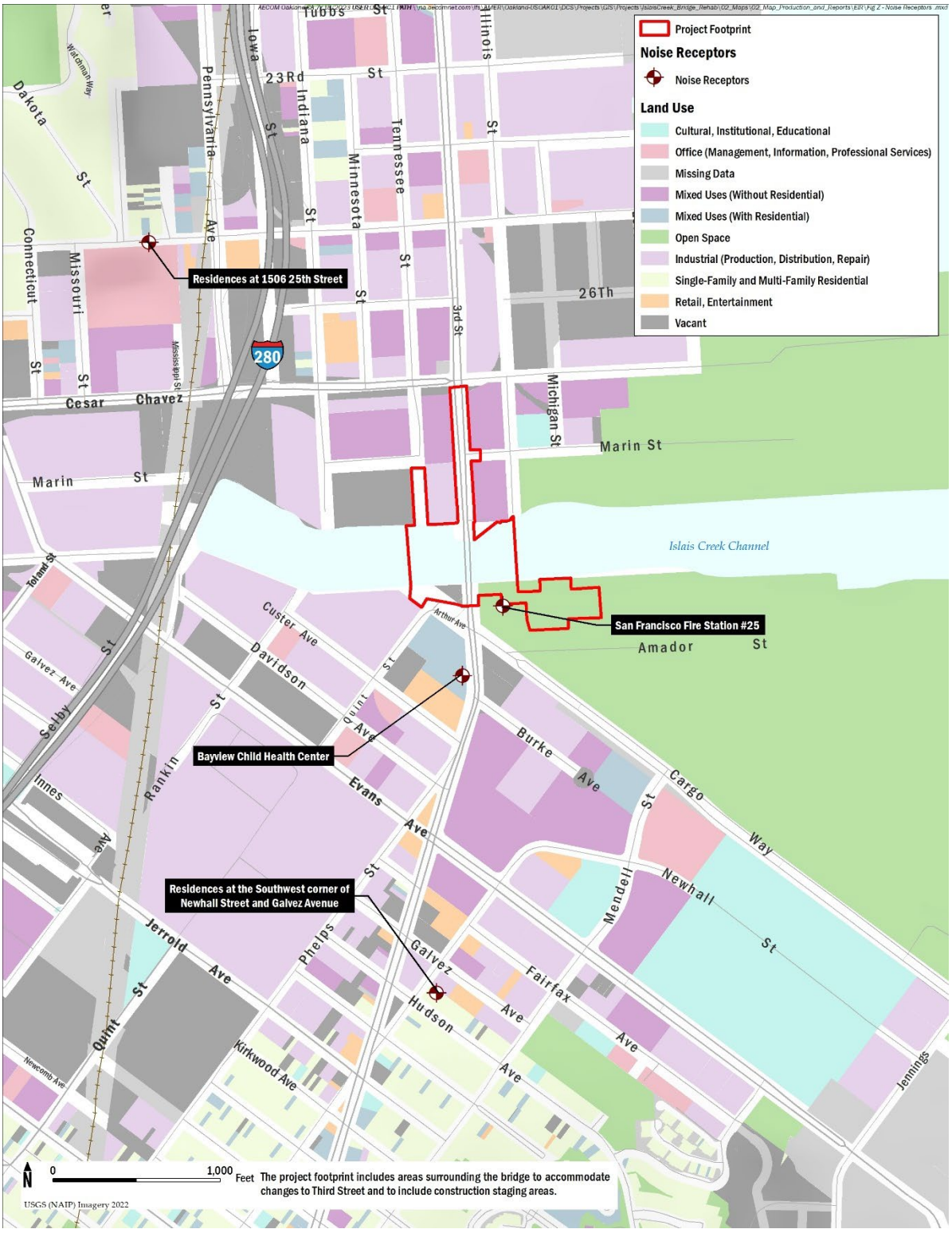

Figure 6 Noise Sensitive Receptors in the Project Area

CONSTRUCTION NOISE ANALYSIS

According to section 2907 of the city's noise ordinance, the operation of any powered construction equipment (non-impact) is prohibited if the operation of such equipment emits noise at a level in excess of 80 dBA when measured at a distance of 100 feet. Hoe rams, as impact equipment, are exempt from this restriction. As shown in Table 2, the construction equipment in the list provided by the project sponsor would operate within the constraints of the noise ordinance standards, with the exception of the demolition hammers, diamond-blade pavement grinders, tungsten-carbide-bit pavement grinders, and concrete saws. This equipment would predominantly be used during bridge demolition activities, occurring during the first three months of construction, and for sidewalk demolition/construction, and removal/replacement of the old asphalt along Third Street during the last three months of the 24-month construction schedule. Given the generally limited duration of demolition hammers, diamond-blade pavement grinders, tungsten-carbide-bit pavement grinders, and concrete saws pieces of equipment, individual pieces of equipment would generally be expected to comply with noise ordinance limits.

Table 2 Maximum Noise Levels from Construction Equipment

Construction Equipment	Noise Level at 50 Feet (dB, L_{max})	Noise Level at 100 Feet (dB, L_{max})
barges	NA	NA
concrete trucks	81	75
asphalt rollers	80	74
prestressing jacks	*85*	79
impact wrenches	85	79
air compressor	78	72
air tools	85	79
asphalt pavers	77	71
bituminous distributors	77	71
brooms and sweeping equipment	82	76
hand-guided compactors	83	77
concrete pumps	81	75
concrete vibrators	80	74
curb-extrusion machines	84	78
electric generators and light plants	73	67
electric-powered hand tools	85	79
graders	85	79
demolition hammers	89	83
crawler-mounted hydraulic cranes and excavators	81	75

Construction Equipment	Noise Level at 50 Feet (dB, L_{max})	Noise Level at 100 Feet (dB, L_{max})
truck-mounted hydraulic cranes and excavators	81	75
hydraulic personnel lifts and aerial-work platforms	75	69
pile-driving template	NA	NA
rubber-tire loaders	79	73
diamond-blade pavement grinders	90	84
tungsten-carbide-bit pavement grinders	90	84
water hose pumps	81	75
concrete and masonry saws[1]	90	84
crawler cranes	81	75
truck-mounted cranes	81	75
rubber-tire tractors	84	78
equipment trailers	75	69
trenching machines	80	74
truck trailers	75	69
dump trucks	76	70
welding equipment	74	68
cast-in-drilled-hole and pipe pile drilling equipment	84	78

Source: Federal Highway Administration, *Roadway Construction Noise Model User's Guide*, 2006.

Note:

1 Concrete saws are generally used for relatively detailed demolition work, such as opening up a specific area of roadway or sidewalk. Consequently, the duration and frequency of their use is usually not extensive.

Construction could expose existing offsite sensitive receptors to increased noise levels during project construction. As stated above, construction is anticipated to use typical 8-hour work shifts during daylight hours; nighttime and weekend construction are not anticipated. Project-related construction activities would generate a combined noise level of up to 87 dB L_{eq} at a distance of 50 feet by the simultaneous operation of the two loudest pieces of equipment. These construction noise levels would fluctuate throughout the day depending on the construction activity and equipment used, would not always reach this 87 dBA Leq noise level, and would oftentimes be less than that noise level. However, the nearest noise sensitive land uses in the vicinity of the project are the daytime land uses at approximately 100 to 450 feet from construction activities. Table 3 summarizes anticipated noise levels during project construction as well as construction noise levels at the closest noise-sensitive receptors. As shown in Table 3, project construction noise would exceed the ambient levels by 3 to 14 dB at the noise-sensitive uses in the project vicinity and would expose sensitive receptors near the project site to noise levels above 10 dBA.

Table 3 Ambient and Project Construction Noise Levels at Closest Sensitive Receptors

Receptor	Ambient Noise Levels, dBA, L_{eq}	Distance to Islais Creek Bridge (Feet)	Projected Construction Noise Level, dBA, L_{eq}	Resultant Noise Level (Existing + Construction) dB	Daytime Noise Criteria 90 dB/ or 10 dB Above Ambient	Exceed 90 dB/ or 10 dB Above Ambient
Bay View Health Clinic at 3450 Third Street	68.0	450	68	71	90 dB/78 dB	No
Residences at the Southwest corner of Newhall Street and Galvez Avenue	62.6	2,400	53	63	90 dB/73 dB	No
Residences at 1506 25th Street	64.7	2,500	53	65	90 dB/75 dB	No
Fire Station 25	67.1	100	81	81	90 dB/77 dB	Yes

Source: Islais Creek Bridge Project Construction Noise/Vibration Technical Memorandum, AECOM, September 2023.

Notes:

dB = decibels
dBA = A-weighted decibels
L_{eq} = noise-level equivalent

During project construction, the noise levels experienced at the nearest offsite receptors would vary depending on the distance from the construction equipment in the site to the receptor. Although the existing noise levels in the area are somewhat elevated (see Table 1), the addition of construction noise could be substantially noticeable for Fire Station 25, which is 100 feet from the project limits. Table 3 shows the estimated construction noise level contributions that would occur at the nearest offsite sensitive uses during construction, as well as the resultant noise level (the contribution from construction activity added to the existing noise environment). The estimated noise levels at the offsite sensitive receptors were calculated using the Federal Highway Administration's Roadway Noise Construction Model, and were based on the concurrent operation of the two noisiest pieces of equipment identified for each phase. As shown in Table 3, the estimated daytime construction noise levels generated by the project at sensitive receptor locations would range from 63 to 81 dBA L_{eq} at Fire Station 25, which is up to 14 dBA above ambient. Although construction noise levels may occasionally result in an increase of greater than 10 dBA[11] over existing ambient levels at Fire Station 25, noise levels would not exceed the Federal Transit Administration's 90 dBA criteria for daytime construction noise and would not exceed the 10 dBA criteria at other residential receptors.

Construction noise from the project would predominantly affect sensitive receptors at Fire Station 25 and would be minimized by Public Works standard construction measure #5 (Noise) and the San Francisco Noise Ordinance. Public works standard construction measure #5 (Noise) requires Public Works to comply with the noise ordinance as well as undertake measures to minimize noise to nearby sensitive receptors. The efforts would include using best available noise control technologies on equipment (i.e., mufflers, acoustical shields); locating noise sources away from sensitive receptors (i.e., generators and pumps); erecting noise barriers; and other noise reduction measures. Therefore, given the limited number of receptors exposed to

[11] An increase of 10 dBA over existing noise levels represents a perceived doubling of loudness.

construction noise and compliance with Public Works standard construction measures, construction noise impacts associated with project construction would be ***less than significant***, and the project's construction noise would not result in substantial noise level increases over ambient and would not exceed standards established in the local general plan or noise ordinance.

Impact NO-2: The proposed project could generate excessive groundborne vibration or groundborne noise levels. ***(Less than Significant)***

STRUCTURE DAMAGE

Construction activities have the potential to result in varying degrees of temporary groundborne vibration, depending on the specific construction equipment used, the location of construction activities relative to sensitive receptors, and the operations/activities involved. Vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. The type and density of soil can also affect the transmission of energy.

The movement and operation of the project's construction equipment may generate temporary groundborne vibration. Table 4 provides vibration levels for the highest-vibration-generating equipment that would be used during the demolition of the existing bridge and construction of the new bridge.

Table 4 Typical Vibration Levels for Construction Equipment at 25 Feet

Equipment	PPV at 25 Feet (in/sec)	Approximate Lv (VdB) at 25 Feet
Hoe Ram/Large Bulldozer/Caisson Drilling	0.089	87
Jackhammer	0.035	79

Sources: Caltrans 2020, FTA 2018

Notes:

in/sec = inches per second
Lv = the velocity level in decibels referenced to 1 micro-inch per second and based on the root-mean-square velocity amplitude
PPV = peak particle velocity
VdB = vibration decibel, logarithmic velocity unit

The California Department of Transportation (Caltrans) has developed criteria that are commonly applied as an industry standard to determine the impacts of project vibration relative to human annoyance and structural damage. Caltrans determines that the vibration level of 80 vibration decibel levels (0.04 inch per second [in/sec] PPV) would be distinctly perceptible.[12] Also, Caltrans criteria are 0.25 in/sec PPV at historic buildings, below 0.3 in/sec PPV at older residential structures, and below 0.5 in/sec PPV for new residential structures, to avoid structural damage. The nearest buildings to the project site are listed in Table 5.

[12] California Department of Transportation (Caltrans), Transportation and Construction Vibration Guidance Manual, Division of Environmental Analysis, 2020 (April).

Table 5 Buildings Near the Project Site

Building Address	Year Built	Distance (feet)	Project Vibration (in/sec PPV)	Caltrans Criterion Used (in/sec PPV)	Exceeds Caltrans Vibration Levels
3305 Third Street, San Francisco, CA 94124	1926	50	0.244	0.25	No
602 Arthur Avenue, San Francisco, CA 94124	NA	50	0.244	0.25	No
3201 Third Street, San Francisco, CA 94124	1956	50	0.244	0.25	No
3240 Third Street, San Francisco, CA 94124	1945	50	0.073	0.25	No

Notes:

PPV = peak particle velocity
NA = Not Available

As shown in Table 4, hoe rams, large bulldozers, and caisson drilling all have a higher reference value of 0.089 in/sec PPV at 25 feet. The vibration-sensitive uses (buildings) nearest to the construction site are approximately 10 to 30 feet away, as shown in Table 5. The resulting vibration level from project activities would be 0.073 to 0.244 in/sec PPV at a distance of 10 to 30 feet. This level of vibration would be below the 0.25 in/sec recommended for historic buildings, 0.3 in/sec PPV recommended for residential structures, and 0.5 in/sec PPV recommended by Caltrans for structural damage. Therefore, short-term construction of the proposed project would not generate excessive groundborne vibration and would not exceed the threshold for structural damage. Impacts would be ***less than significant***, and no mitigation measures are required.

UTILITY DAMAGE

In addition to buildings, the SFPUC outfall from the Southeast Treatment Plant and the Booster Pump Station are southwest of the bridge. The outfall pipe runs across the creek along the bottom of the channel adjacent to the bridge, and along the northern side of the channel to the bay. Although there are no thresholds for sewer pipes, a vibration threshold of 0.2 in/sec PPV was assumed in this study at the recommendation of SFPUC.[13] Vibration-sensitive structures are depicted on Figure 7.

Construction activities could exceed the 0.2 in/sec PPV vibration limit for the SFPUC pipeline at a distance of 12 feet. Accordingly, none of these activities (including use of compaction, trenching, boring, or drilling equipment) shall take place within 12 feet of the SFPUC pipeline. The closest to the pipeline that these pieces of vibratory equipment would be used would be more than 12 feet from the submerged pipeline, for construction on the bridge abutments. Consequently, vibration impacts would be ***less than significant***, and no mitigation measures are required.

[13] Email from Sue Chau (San Francisco Water) to Thomas Roitman (Public Works), Chelsea Fordham (San Francisco Planning Department), and Elizabeth White (San Francisco Planning Department), SUBJ: Islais Creek temporary bypass pipeline, July 6, 2023.

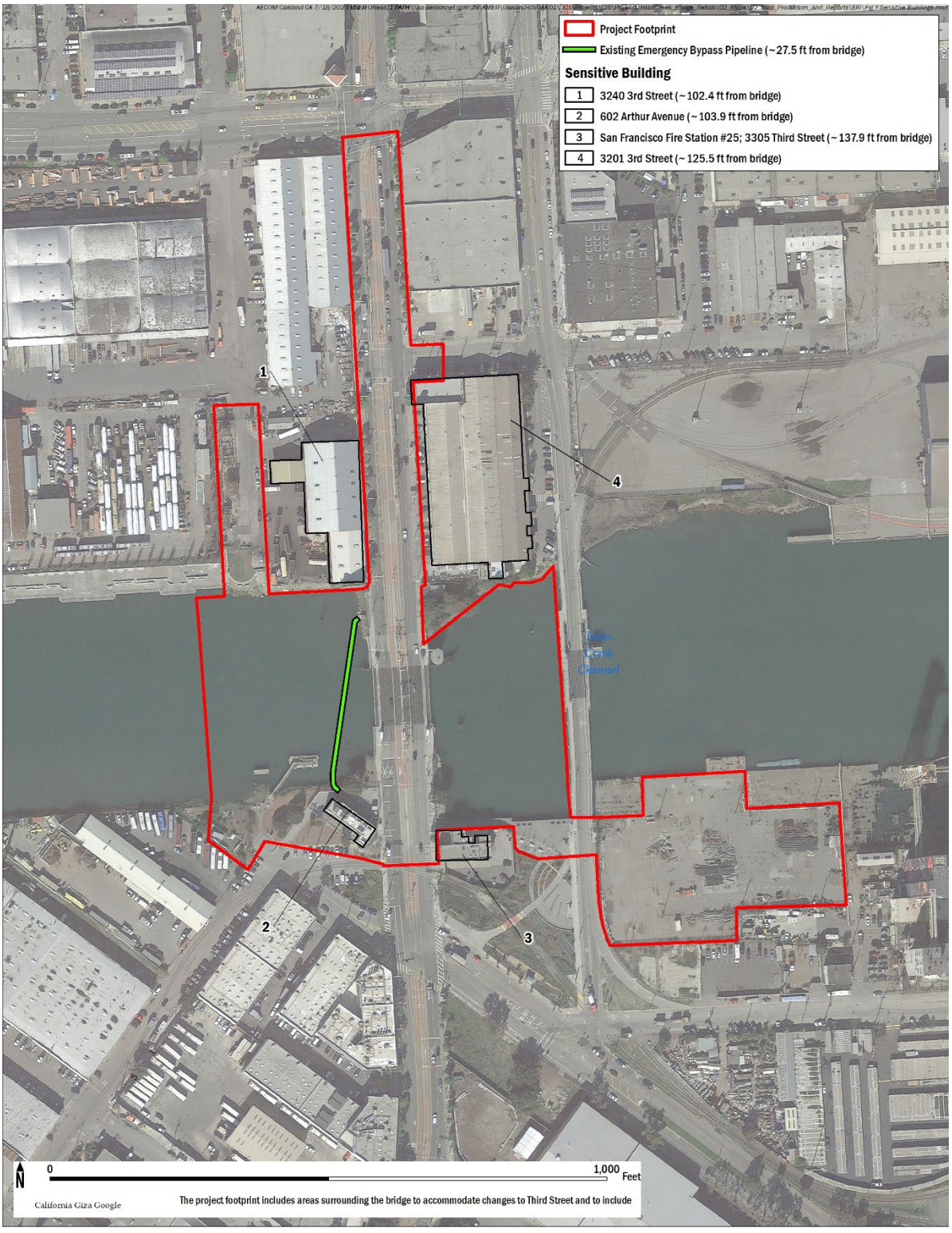

Figure 7 Vibration Sensitive Structures in the Islais Creek Bridge Project Area

Impact NO-3: Operation of the proposed project would not generate noise levels in excess of standards in the local general plan or noise ordinance and would not result in a substantial increase in ambient noise levels in the project vicinity. (*No Impact*)

Once construction is complete, the proposed project would be an improvement from existing conditions regarding operational noise sources. This is because the existing bridge is a source of substantial vibration, which causes noise as the bridge is structurally failing. The proposed bridge would not have the same susceptibility to vibration of the existing, structurally impaired bridge. The proposed project would also not cause significant increases in vehicle traffic, because the proposed replacement bridge is a similar configuration to the existing and would not add any vehicle capacity. Therefore, there would be no operational impacts and no mitigation measures are necessary.

Impact C-NO-1: The proposed project, in combination with cumulative projects, would not result in a significant cumulative noise or vibration impacts. *(Less than Significant)*

Noise and vibration impacts are generally localized impacts that do not have regional or cumulative considerations. Stationary noise sources that are adjacent to one another could combine to increase cumulative noise levels. However, stationary noise sources in the project area would not generally combine with noise sources outside of the project area to create a cumulative increase in operational noise impacts.

Noise from construction activities would typically affect areas in close proximity to a construction site, because noise impacts are typically localized. Construction noise dissipates/attenuates quickly as the distance between the construction site and the receptor increases, as well as from noise reduction provided by intervening structures. Cumulative projects are identified in Section 4.A.6, Cumulative Impacts, of the draft EIR. The construction schedules for the Biosolids Digester Facilities; San Francisco Public Utilities Commission City Distribution Division Campus; Amador Street Sewer Replacement; and Carpenters Union Hall Project could overlap with the construction schedule for the proposed project. However, the closest cumulative project (Carpenters Union Hall Project at 3433 Third Street) is more than 220 feet from the Islais Creek Bridge project site. The other cumulative projects range from 800 to 1,620 feet from the project site. Due to high ambient noise levels and the urban setting of the project site, cumulative construction noise impacts would dissipate and not combine with construction noise of the proposed project. This impact would be ***less than significant***, and no mitigation measures are required.

As discussed for Impact NO-2, the proposed project would result in less-than-significant impacts related to construction vibration. Therefore, there would be no cumulative impacts related to construction vibration.

Topics:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
8. AIR QUALITY. Would the project:					
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐	☐
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal, state, or regional ambient air quality standard?	☐	☐	☒	☐	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☒	☐	☐	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐	☐

OVERVIEW

The proposed project would be within the city and county of San Francisco. The Bay Area Air Quality Management District (air district) is the regional agency with jurisdiction over the nine-county San Francisco Bay Area Air Basin (air basin), which includes San Francisco, Alameda, Contra Costa, Marin, San Mateo, Santa Clara, and Napa counties and portions of Sonoma and Solano counties. The air district is responsible for attaining and maintaining air quality in the air basin within federal and state air quality standards, as established by the Federal Clean Air Act and the California Clean Air Act, respectively. Specifically, the air district has the responsibility to monitor ambient air pollutant levels throughout the air basin and to develop and implement strategies, rules, and regulations to attain the applicable federal and state standards.

The most recent air quality plan, the 2017 Clean Air Plan, was adopted by the air district on April 19, 2017.[14] The 2017 Clean Air Plan updates the 2010 Clean Air Plan, in accordance with the requirement of the California Clean Air Act to implement all feasible measures to reduce ozone; provide a control strategy to reduce ozone, particulate matter (PM), air toxics, and greenhouse gas (GHG) emissions in a single, integrated plan; and establish emission control measures to be adopted or implemented. The 2017 Clean Air Plan contains the following primary goals:

> ***Protect air quality and health at the regional and local scale****:* Attain all state and national air quality standards, and eliminate disparities among Bay Area communities in cancer health risk from toxic air contaminants (TACs); and
>
> ***Protect the climate****:* Reduce Bay Area GHG emissions to 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050.

The 2017 Clean Air Plan represents the most current applicable air quality plan for the air basin. The plan contains 85 measures to address the reduction of several pollutants: ozone precursors, PM, air toxics, and GHGs. Other measures focus on potent GHGs such as methane and black carbon, or harmful fine particles that affect public health. Consistency with the plan objectives is the basis for determining whether the project would conflict with or obstruct implementation of air quality plans.

[14] Bay Area Air Quality Management District, 2017 Clean Air Plan, April 19, 2017.

CRITERIA POLLUTANTS

In accordance with the state and federal clean air acts, air pollutant standards are identified for the following six criteria air pollutants: ozone, carbon monoxide (CO), PM, nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead. These air pollutants are termed criteria air pollutants because they are regulated by developing specific public health- and welfare-based criteria as the basis for setting permissible levels. The state and federal air quality standards were developed to protect public health and welfare.

In general, the air basin experiences low concentrations of most pollutants when compared to federal or state standards. The air basin is designated as either in *attainment*[15] or unclassified for most criteria pollutants with the exception of ozone, PM 2.5 microns in diameter or less ($PM_{2.5}$), and PM 10 microns in diameter or less (PM_{10}), which are designated as non-attainment for either the state or federal standards. By its very nature, regional air pollution is largely a cumulative impact in that no single project is sufficient in size to, by itself, result in non-attainment of air quality standards. Instead, a project's individual emissions contribute to existing cumulative air quality impacts. If a project's contribution to cumulative air quality impacts is "considerable," then the project's impact on air quality would be considered significant.[16]

Projects may contribute to regional criteria air pollutants during the construction and operational phases of a project. Table 6 identifies air quality significance thresholds followed by a discussion of each threshold.[17] Projects that would result in criteria air pollutant emissions below these significance thresholds would not violate an air quality standard, contribute substantially to an air quality violation, or result in a cumulatively considerable net increase in criteria air pollutants within the air basin.

Table 6 Criteria Air Pollutants Significance Thresholds

Pollutant	Construction Thresholds	Operational Thresholds	
	Average Daily Emissions (lbs/day)	Average Daily Emissions (lbs/day)	Maximum Annual Emissions (tons/year)
ROG	54	54	10
NO_X	54	54	10
PM_{10}	82 (exhaust)	82 (exhaust)	15
$PM_{2.5}$	54 (exhaust)	54 (exhaust)	10
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices	Not Applicable	

Notes:

lbs/day = pounds per day
NO_X = oxides of nitrogen
PM_{10} = particulate matter less than or equal to 10 micrometers in diameter
$PM_{2.5}$ = particulate matter less than or equal to 2.5 micrometers in diameter
ROG = reactive organic gases

Source: Bay Area Air Quality Management District, California Environmental Quality Act Air Quality Guidelines, April 2022

[15] "Attainment" status refers to those regions that are meeting federal and/or state standards for a specified criteria pollutant. "Non-attainment" refers to regions that do not meet federal and/or state standards for a specified criteria pollutant. "Unclassified" refers to regions where there is not enough data to determine the region's attainment status.

[16] Bay Area Air Quality Management District, California Environmental Quality Act Air Quality Guidelines, pp. 3-4, Table 3-1, April 2023, *https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines*, accessed August 21, 2023.

[17] Ibid.

Ozone Precursors. As discussed previously, the air basin is currently designated as non-attainment for ozone. Ozone is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG) and oxides of nitrogen (NO_X). The potential for a project to result in a cumulatively considerable net increase in non-attainment criteria air pollutants are based on the state and federal Clean Air Act's emissions limits for stationary sources. The federal New Source Review program was created by the federal clean air act to ensure that stationary sources of air pollution are constructed in a manner that is consistent with attainment of federal health based ambient air quality standards. Similarly, to ensure that new stationary sources do not cause or contribute to a violation of an air quality standard, air district Regulation 2, Rule 2 requires that any new source that emits criteria air pollutants above a specified emissions limit must offset those emissions. For ozone precursors ROG and NO_X, the offset emissions level is an annual average of 10 tons per year (or 54 pounds per day).[18] These levels represent emissions below which new sources are not anticipated to contribute considerably to non-attainment criteria air pollutants.

Although this regulation applies to new or modified stationary sources, the project would result in ROG and NO_X emissions, primarily as a result of construction activities, which include on-road and off-road construction equipment, harbor craft, and increased vehicle miles traveled (VMT) associated with detoured vehicle traffic. Therefore, the above thresholds can be applied to the construction phase of the project, and if the project would result in emissions below these thresholds, it would not be considered to contribute considerably to non-attainment criteria air pollutants. Due to the temporary nature of construction activities, only the average daily thresholds are applicable to construction phase emissions. After construction is complete, the proposed project would not result in increased emissions beyond existing conditions; the new bridge would have improved transit, pedestrian, and bicycle facilities; and the proposed project would not result in increased road or bridge capacity that would lead to an increase in VMT. Therefore, no operational emissions would occur upon implementation of the proposed project, and the operational emissions thresholds presented in Table 6 are not applicable.

Particulate Matter (PM_{10} and $PM_{2.5}$).[19] The air district has not established an offset limit for $PM_{2.5}$. However, the emissions limit in the federal New Source Review for stationary sources in nonattainment areas is an appropriate significance threshold. For PM_{10} and $PM_{2.5}$, the emissions limit under New Source Review is 15 tons per year (82 pounds per day) and 10 tons per year (54 pounds per day), respectively. These emissions limits represent levels below which a source is not expected to have an impact on air quality.[20] Similar to ozone precursor thresholds identified above, the project would result in PM emissions as a result of construction activities. Therefore, the above thresholds can be applied to the construction phase of the project. Because construction activities are temporary in nature, only the average daily thresholds are applicable to construction-phase emissions.

Fugitive Dust. Fugitive dust is PM suspended in the air by wind action and human activities (e.g., demolition, excavation, grading, and other construction activities). Fugitive dust does not come out of a vent or a stack; instead, fugitive dust particles are mainly composed of soil minerals suspended in the air. Dust can be an

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[18] Bay Area Air Quality Management District, California Environmental Quality Act Air Quality Guidelines, Appendix A, Thresholds of Significance Justification, pages A-45 to A-46, April 2023, *https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/appendix-a-thresholds-of-significance-justification_final-pdf.pdf?la=en*, accessed August 21, 2023.

[19] PM_{10} is often termed "coarse" PM and is made of particulates that are 10 microns in diameter or smaller. $PM_{2.5}$, termed "fine" PM, is composed of particles that are 2.5 microns or less in diameter.

[20] Bay Area Air Quality Management District, California Environmental Quality Act Air Quality Guidelines, Appendix A, Thresholds of Significance Justification, pages A-45 to A-46, April 2023, *https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/appendix-a-thresholds-of-significance-justification_final-pdf.pdf?la=en*, accessed August 21, 2023.

irritant causing watering eyes or irritation to the lungs, nose, and throat. Depending on exposure, adverse health effects can occur due to this PM in general and also due to specific contaminants such as lead or asbestos that may be constituents of soil. Studies have shown that the application of best management practices (BMPs) at construction sites significantly control fugitive dust.[21] Individual measures have been shown to reduce fugitive dust by anywhere from 30 to 90 percent.[22] The air district has identified a number of BMPs to control fugitive dust emissions from construction activities.[23] The city's Construction Dust Control Ordinance (Ordinance 176-08, effective July 30, 2008), requires a number of measures to control fugitive dust. The BMPs required by the dust control ordinance are an effective strategy for controlling construction-related fugitive dust.

LOCAL HEALTH RISKS AND HAZARDS

In addition to criteria air pollutants, individual projects may emit TACs. TACs collectively refer to a diverse group of air pollutants that are capable of causing chronic (i.e., of long duration) and acute (i.e., severe but short-term) adverse effects to human health, including carcinogenic effects. Human health effects of TACs include birth defects, neurological damage, cancer, and mortality. There are hundreds of different listed TACs with varying degrees of toxicity. Individual TACs vary greatly in the health risk they present; at a given level of exposure, one TAC may pose a hazard that is many times greater than another TAC.

Unlike criteria air pollutants, TACs do not have ambient air quality standards but are regulated by the air district using a risk-based approach to determine which sources and pollutants to control as well as degree of control. A health risk assessment (HRA) is an analysis in which human health exposure to toxic substances from a project is estimated and considered together with information regarding the toxic potency of the substances to provide quantitative estimates of health risks.[24]

Air pollution does not affect every individual in the population in the same way, and some groups are more sensitive to adverse health effects than others. Land uses such as residences, schools, children's day care centers, hospitals, and nursing and convalescent homes are considered to be the most sensitive to poor air quality because the population groups associated with these uses have increased susceptibility to respiratory distress or, as in the case of residential receptors, their exposure time is greater than for other land uses. Therefore, these groups are referred to as sensitive receptors. Offsite workers (workers near a proposed project) are also evaluated in accordance with air district guidance.[25] Exposure assessment guidance typically assumes that residences would be exposed to air pollution 24 hours per day, seven days

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[21] Western Regional Air Partnership. WRAP Fugitive Dust Handbook, September 7, 2006, *http://www.wrapair.org/forums/dejf/fdh/content/FDHandbook_Rev_06.pdf,* accessed July 13, 2023.

[22] Bay Area Air Quality Management District, California Environmental Quality Act Air Quality Guidelines, Appendix A, Thresholds of Significance Justifications, pages A-4, April 2023*https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/appendix-a-thresholds-of-significance-justification_final-pdf.pdf?la=en*, accessed August 21, 2023.

[23] Bay Area Air Quality Management District, CEQA Air Quality Guidelines, *https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines,* April 2023,. accessed July 13, 2023.

[24] In general, a health risk assessment is required if the air district concludes that projected emissions of a specific air toxic compound from a proposed new or modified source suggest a potential public health risk; the applicant is then subject to a health risk assessment for the source in question. Such an assessment generally evaluates chronic, long-term effects, calculating the increased risk of cancer because of exposure to one or more TACs.

[25] Bay Area Air Quality Management District, California Environmental Quality Act Air Quality Guidelines, Appendix E, Recommended Methods for Screening and Modeling Local Risks and Hazards, pages E-13 to E-14, April 2023, *https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/appendix-e-recommended-methods-for-screening-and-modeling-local-risks-and-hazards_final-pdf.pdf?sc_lang=en,* accessed October 19, 2023.

per week, for 30 years.[26] Therefore, assessments of air pollutant exposure to residents typically result in the greatest adverse health outcomes of all population groups.

Exposures to fine particulate matter ($PM_{2.5}$) are strongly associated with mortality, respiratory diseases, and lung development in children, and other endpoints such as hospitalization for cardiopulmonary disease.[27] In addition to $PM_{2.5}$, diesel particulate matter (DPM) is also of concern. The California Air Resources Board (air board) identified DPM as a TAC in 1998, primarily based on evidence demonstrating cancer effects in humans.[28] The estimated cancer risk from exposure to diesel exhaust is much higher than the risk associated with any other TAC routinely measured in the region.

In an effort to identify areas of San Francisco most adversely affected by sources of TACs, San Francisco partnered with the air district to conduct a citywide HRA based on an inventory and assessment of air pollution and exposures from mobile, stationary, and area sources in San Francisco. Areas determined to have poor air quality, termed the "Air Pollutant Exposure Zone" (APEZ), were identified based on health-protective criteria that consider estimated cancer risk, exposures to $PM_{2.5}$, proximity to freeways, and locations with particularly vulnerable populations. These zones are established by the San Francisco Department of Public Health and regulated under San Francisco's Environment Code Chapter 25, Clean Construction Requirements for Public Works.[29] The project site is located within the APEZ. Each of the APEZ criteria is discussed below.

Excess Cancer Risk. The APEZ includes areas where the modeled cancer risk exceeds 100 per one million persons. This criterion is based on United States Environmental Protection Agency (USEPA) guidance for conducting air toxic analyses and making risk management decisions at the facility and community-scale level.[30] As described by the air district, the USEPA considers a cancer risk of 100 per million or less to be within the "acceptable" range of cancer risk. Furthermore, in the 1989 preamble to the benzene National Emissions Standards for Hazardous Air Pollutants rulemaking,[31] the USEPA states that it "…strives to provide maximum feasible protection against risks to health from hazardous air pollutants by (1) protecting the greatest number of persons possible to an individual lifetime risk level no higher than approximately one in one million and (2) limiting to no higher than approximately one in ten thousand [100 in one million] the estimated risk that a person living near a plant would have if he or she were exposed to the maximum pollutant concentrations for 70 years." According to the air district, "One hundred in a million excess cancer cases is also consistent with the ambient cancer risk in the most pristine portions of the Bay Area based on the air district's regional modeling analysis."[32]

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[26] California Office of Environmental Health Hazard Assessment, Air Toxics Hot Spot Program Risk Assessment Guidelines, pp. 4-44, 8-6, February 2015.

[27] San Francisco Department of Public Health, Assessment and Mitigation of Air Pollutant Health Effects from Intra-Urban Roadways: Guidance for Land Use Planning and Environmental Review, May 2008.

[28] California Air Resources Board, Fact Sheet, "The Toxic Air Contaminant Identification Process: Toxic Air Contaminant Emissions from Diesel-fueled Engines," October 1998.

[29] San Francisco Department of Public Health. Air Pollutant Exposure Zone (2020) Map *https://www.sfdph.org/dph/files/ehsdocs/airquality/airpollutantexposurezonemap.pdf*, accessed October 19. 2023.

[30] Bay Area Air Quality Management District, California Environmental Quality Act Air Quality Guidelines, Appendix A, Thresholds of Significance Justifications, page A-42, April 2023, *https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/appendix-a-thresholds-of-significance-justification_final-pdf.pdf?la=en*, accessed August 21, 2023.

[31] 54 Federal Register 38044, September 14, 1989.

[32] Bay Area Air Quality Management District, *California Environmental Quality Act Air Quality Guidelines*, Appendix A: Thresholds of Significance Justification, pp. A-42, April 20, 2023, *https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/appendix-a-thresholds-of-significance-justification_final-pdf.pdf?la=en*, accessed August 21, 2023.

Fine Particulate Matter. In April 2011, the USEPA published the Policy Assessment for the Particulate Matter Review of the National Ambient Air Quality Standards. In this document, USEPA staff concludes that the current federal annual $PM_{2.5}$ standard of 15 micrograms per cubic meter ($\mu g/m^3$) should be revised to a level within the range of 13 to 11 $\mu g/m^3$, with evidence strongly supporting a standard within the range of 12 to 11 $\mu g/m^3$.[33] In December 2012, USEPA lowered the annual $PM_{2.5}$ standard from 15 to 12 $\mu g/m^3$, and issued final area designations based on that standard. On January 27, 2023, the USEPA published a *Proposed Decision for the Reconsideration of the National Ambient Air Quality Standards (NAAQS) for Particulate Matter*.[34] In this reconsideration document, the USEPA is considering lowering the primary annual $PM_{2.5}$ standard from 12 $\mu g/m^3$ to a range of 9 to 10 $\mu g/m^3$. The APEZ for San Francisco is based on the health protective $PM_{2.5}$ standard of 10 $\mu g/m^3$.

Proximity to Freeways. According to the air board, studies have shown an association between the proximity of sensitive land uses to freeways and a variety of respiratory symptoms, asthma exacerbations, and decreases in lung function in children. Siting sensitive uses in proximity to freeways increases both exposure to air pollution and the potential for adverse health effects. Evidence shows that sensitive uses in an area within a 500-foot buffer of any freeway are at an increased health risk from air pollution,[35] consequently parcels that are within 500 feet of freeways are included in the APEZ.

Health Vulnerable Locations. Based on the air district's evaluation of health vulnerability in the Bay Area, those zip codes in the worst quintile of Bay Area Health vulnerability scores as a result of air pollution-related causes are afforded additional protection by making the criteria for identifying parcels in the APEZ more stringent. The health vulnerable criteria are: (1) an excess cancer risk greater than 90 per one million persons exposed, and/or (2) $PM_{2.5}$ concentrations in excess of 9 $\mu g/m^3$.[36]

The above-discussed citywide HRA was used as the basis in approving a series of amendments to the San Francisco Environment and Administrative Codes, referred to as the Clean Construction Ordinance, or Environment Code chapter 25 (ordinance 28-15, effective April 19, 2015). The code has requirements for construction equipment that went into effect starting in 2009. The purpose of the amendments was to further protect the public health, safety, and welfare by requiring contractors on San Francisco public projects to implement more stringent requirements to reduce diesel and other fine particulate emissions generated by construction activities for projects in the APEZ.

The project site is in the APEZ, and this analysis includes an HRA to determine whether the proposed project could substantially affect the geography or health risk severity of receptor locations in the APEZ. If the health risks at a sensitive receptor or worker location meets the APEZ criteria with the proposed project but would not meet the APEZ criteria without it, a substantial health risk contribution threshold is defined as an annual average $PM_{2.5}$ concentration at or above 0.3 $\mu g/m^3$ or an excess cancer risk at or greater than 10.0 per one million. The 0.3 $\mu g/m^3$ annual average $PM_{2.5}$ concentration and the excess cancer risk of 10.0 per one million persons exposed are the project-level health risk levels identified by the air district; they are the levels below

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[33] The USEPA published a new policy assessment in January 2020. The policy assessment did not include recommendations to change the standards for particulate matter. See USEPA, Policy Assessment for the Review of the National Ambient Air Quality Standards for Particulate Matter, January 2020, *https://www.epa.gov/sites/production/files/2020-01/documents/final_policy_assessment_for_the_review_of_the_pm_naaqs_01-2020.pdf*, and *https://www.epa.gov/pm-pollution/national-ambient-air-quality-standards-naaqs-pm*, accessed July 13, 2023.

[34] 40 CFR Parts 50, 53, and 58, January 27, 2023.

[35] California Air Resources Board, Air Quality and Land Use Handbook: A Community Health Perspective, April 2005, *http://www.arb.ca.gov/ch/landuse.htm*.

[36] San Francisco Department of Public Health and San Francisco Planning Department, San Francisco Citywide Health Risk Assessment: Technical Support Documentation, September 2020.

which the air district considers new sources not to make a considerable contribution to cumulative health risks.[37] For those locations already meeting the APEZ criteria, such as the proposed project site, a lower significance threshold is required to ensure that the proposed project's contribution to existing health risks would not be significant. In these areas, project-generated $PM_{2.5}$ concentrations at or above 0.2 µg/m^3, or an excess cancer risk at or greater than 7.0 per one million, would be a substantial health risk contribution, and a significant impact would occur.[38] Projects that result in a cancer risk or annual average $PM_{2.5}$ concentration below these levels at sensitive or worker receptors would not expose sensitive or worker receptors to substantial pollutant concentrations. The chronic hazard index (HI) resulting from the proposed project is also disclosed and compared with the air district's chronic HI threshold of 1.0.

CUMULATIVE AIR QUALITY

No single project by itself would be of such size as to result in regional non-attainment of ambient air quality standards. The project-level thresholds for criteria air pollutants are based on levels at which new sources are not anticipated to result in a cumulatively considerable net increase in non-attainment criteria air pollutants. Therefore, a separate cumulative criteria air pollutant analysis is not necessary and not presented in the impact analysis below.

Cumulative health risks are the sum of the increase in health risks experienced at sensitive and worker receptors impacted from exposure to project pollutants, in addition to existing health risks and health risks from reasonably foreseeable cumulative projects. The existing health risk information relies on the citywide HRA for existing data for the year 2020, including lifetime excess cancer risk and annual average $PM_{2.5}$ concentrations. Because the citywide HRA was completed in 2020, it represents the most up-to-date existing health risk information available. Air pollutant emissions disperse with increasing distance from a source. Therefore, health risk impacts are typically localized and cumulative projects that are within 1,000 feet of the maximally exposed receptor are considered to contribute to cumulative health risks. However, this cumulative health risk analysis considers a large study area to reflect the impacts associated with the need for vehicle detour routes due to the bridge's closure, and to identify other potential significant contributors in this study area.[39] For the purposes of this initial study, cumulative projects within 3,000 feet of the maximally exposed receptor are included as part of the analysis. The cumulative health risk analysis considers the health risk from the following projects: Carpenters Union Hall Project at 3433 Third Street; San Francisco Public Utilities Commission City Distribution Division Campus at 2000 Marin Street; the Amador Street Sewer Replacement at 429 Amador Road; Pier 94 Grasslands Meadow Enhancement Project; and installation of electric vehicle charging units and roof-mounted solar panels at 2101 Jerrold Avenue. Additionally, there is ongoing construction at Biosolids Digester Facilities near Jerrold Avenue and Quint Street.

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[37] Bay Area Air Quality Management District, CEQA Air Quality Guidelines, Chapter 5: Project-Level Air Quality Impacts. pp. 5-14, April 20, 2023, *https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/ceqa-guidelines-chapte r-5-project-air-qualityimpacts_final-pdf.pdf?la=en*, accessed June 16, 2023.

[38] A 0.2 µg/m^3 increase in $PM_{2.5}$ would result in a 0.28 percent increase in noninjury mortality, or an increase of about 21 excess deaths per 1,000,000 population per year from noninjury causes in San Francisco. This information is based on Jerrett M. et al., Spatial Analysis of Air Pollution and Mortality in Los Angeles, Epidemiology 16 (2005): 727–736. The excess cancer risk has been proportionally reduced to result in a significance criterion of seven per one million persons exposed.

[39] Bay Area Air Quality Management District, CEQA Air Quality Guidelines Appendix E: Recommended Methods for Screening and Modeling Local Risks and Hazards, p. E-15, August 28, 2023, *https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/appendix-e-recommended-methods-for-screening-and-modeling-local-risks-and-hazards_final-pdf.pdf?la=en*, accessed October 10, 2023.

AIR QUALITY IMPACTS

This air quality impact analysis is based, in part, on the Air Quality Technical Results Memorandum prepared for the proposed project, which provides detailed estimates of project-related emissions and associated health risks.[40] The project-related air quality impacts are analyzed in the impact discussions below, which address impacts from the project's approximately 24-month construction period. Because the replacement bridge would be similar to the existing bridge, the proposed project would not result in operational air quality impacts. Therefore, the following impact analysis quantitatively discusses potential impacts during the construction period only.

Impact AQ-1: The proposed project would not conflict with or obstruct implementation of the applicable air quality plan. ***(Less than Significant)***

As stated above, the applicable air quality plan for the project area is the air district's *2017 Clean Air Plan: Spare the Air, Cool the Climate*. The 2017 Clean Air Plan is a roadmap that demonstrates how the Bay Area will, in accordance with the requirements of the California Clean Air Act, implement all feasible measures to reduce ozone precursors (ROG and NO_X), and reduce the transport of ozone and its precursors to neighboring air basins. It also provides a climate and air pollution control strategy to reduce ozone, PM, TACs, and GHG emissions that builds on existing regional, state, and national programs.

In determining consistency with the 2017 Clean Air Plan, this analysis considers whether the proposed project would (1) support the primary goals of the 2017 Clean Air Plan, (2) include applicable control measures from the 2017 Clean Air Plan, and (3) avoid disrupting or hindering implementation of control measures identified in the 2017 Clean Air Plan.

The primary goals of the 2017 Clean Air Plan are to (1) protect air quality and public health at the regional and local scale; (2) eliminate cancer health risk disparities among Bay Area communities due to TACs; and (3) to protect the climate by reducing GHG emissions. To meet the primary goals, the 2017 Clean Air Plan recommends 85 specific control measures and actions. These control measures are grouped into various categories, and include stationary and area source measures, mobile source measures, transportation control measures, land use measures, and energy and climate measures. The proposed project's impacts with respect to GHG emissions are analyzed and discussed in Section E.9, Greenhouse Gas Emissions, which demonstrates that the proposed project would comply with the applicable provisions of the city's GHG Reduction Strategy.

The control measures identified in the 2017 Bay Area Clean Air Plan that are most applicable to the proposed project are transportation sector and waste sector control measures, some of which would be implemented as part of, but not limited to, the proposed project's compliance with applicable requirements in the Environment Code and Public Works Code, as articulated in the GHG checklist prepared for the proposed project.[41]

[40] AECOM Technical Services Inc., Air Quality Technical Results Memorandum for the Islais Creek Bridge Project, October 5, 2023.
[41] San Francisco Planning Department, Compliance Checklist Table for Greenhouse Gas Analysis for Islais Creek Bridge Project, October 20, 2023.

Project-related emissions would occur during the construction activities, such as workers commuting to and from the site; operation of onsite combustion equipment (both land-based and harbor craft); and haul truck trips to transport and dispose of construction materials. Additionally, construction of the proposed project would generate emissions associated with the temporary vehicle detour trips and the proposed bus bridge that would temporarily replace the T-Third light-rail service due to Islais Creek Bridge closure. Additional details related to the detour vehicle routes and bus bridge plans are described in more detail in Section 2.G.2 of the draft EIR. Control measures from the 2017 Bay Area Clean Air Plan that relate requirements that the proposed project would implement include the following:

- TR-22: Provide incentives for the early deployment of electric, Tier 3 and 4 off-road engines used in construction, freight, and farming equipment. Support field demonstrations of advanced technology for off-road engines and hybrid drive trains.

- WA-3: Develop model policies to facilitate local adoption of ordinances and programs to reduce the amount of green waste going to landfills.

- WA-4: Develop or identify and promote model ordinances on community-wide zero waste goals and recycling of construction and demolition materials in commercial and public construction projects.

The control measures described above are voluntary incentive measures or not requirements that specifically apply to individual projects, such as the proposed project. However, construction activities would comply with key San Francisco policies and ordinances that address emissions from these sources, such as the San Francisco Clean Construction Ordinance, which requires the proposed project to use low-emitting construction equipment in the APEZ; and the Construction and Demolition Debris Recovery Ordinance, which requires a minimum of 75 percent of construction and demolition debris to be diverted from landfill to maximize reuse of these materials. Therefore, the proposed project would include applicable control measures identified in the clean air plan to meet the plan's primary goals.

As described previously, the temporary closure of the Islais Creek Bridge would also result in diverted trips and a temporary increase in VMT associated with the proposed detour routes. On a daily basis, approximately 15,930 trips that would have traversed the Islais Creek Bridge would be diverted. The diverted trips during construction would increase travel distances by varying amounts, ranging from 0.1 to 1.0 mile, depending on the detour route. Details on the diverted traffic routes are provided in Attachment C of the Air Quality Technical Results Memorandum for the Islais Creek Bridge Project. As discussed under Impact AQ-2, regional mass emissions during construction would not exceed the thresholds of significance. Therefore, at the regional level, construction emissions would not violate an air quality standard, contribute substantially to an air quality violation, or result in a cumulatively considerable net increase in criteria air pollutants in the air basin.

As discussed under Impact AQ-3, the annual average $PM_{2.5}$ concentration impact at the localized level would exceed the applicable threshold of significance at worker receptors during one construction year. However, as discussed above, the proposed project would support relevant 2017 Clean Air Plan control measures during construction through compliance with key San Francisco policies and ordinances, and this temporary impact that would cease to occur upon completion of construction activities. Following construction, the proposed replacement of the Islais Creek Bridge would not result in a permanent increase in vehicle trips or VMT. Additionally, the proposed project would not hinder implementation of the 2017 Clean Air Plan. Rather,

the proposed project would support the longevity of zero-emission transportation infrastructure (i.e., sidewalks and bicycle lanes) and public transit (i.e., the Third Street light rail). Therefore, implementation of the proposed project would support the goals of the 2017 Clean Air Plan. For these reasons, the proposed project would not conflict with or obstruct implementation of the 2017 Clean Air Plan, and this impact would be ***less than significant***.

Furthermore, as detailed under Impact AQ-3, **Mitigation Measure M-AQ-3: Off-Road Construction Equipment** would reduce the localized emissions of $PM_{2.5}$ below the threshold of significance.

Impact AQ-2: The proposed project would not result in a cumulatively considerable net increase in non-attainment criteria air pollutants. ***(Less than Significant)***

As stated above, the air basin is designated as being in nonattainment for ozone, $PM_{2.5}$, and PM_{10}. Construction activities (short-term) typically result in emissions of ozone precursors, NO_X, and ROG; and PM (i.e., both PM_{10} and $PM_{2.5}$) in the form of fugitive dust and exhaust (e.g., vehicle tailpipe emissions). Emissions of ozone precursors and PM are primarily a result of the combustion of fuel from on-road vehicles (e.g., haul trucks or worker commutes) and off-road equipment (e.g., land-based [bulldozers, excavators, etc.] and harbor craft [tug and workboats]). ROGs are also emitted from activities that involve paint or off-gassing, such as roadway striping, and asphalt paving.

Project construction would span approximately 24 months. Construction would involve demolition, site preparation, grading and ground improvements, bridge construction, electrical work, track installation, and paving. The new bridge would be in a configuration similar to that of the existing bridge; would not add any vehicle capacity; and would support improved transit, pedestrian, and bicycle facilities. Therefore, the proposed project would not generate new sources of operational emissions, and only construction-related air quality impacts were evaluated quantitatively.

Fugitive Dust

Dust can be an irritant causing watering eyes or irritation to the lungs, nose, and throat. Demolition, excavation, grading, and other construction activities can cause wind-blown dust that adds PM to the local atmosphere. Depending on exposure, adverse health effects can occur due to this PM in general and also due to specific contaminants such as lead or asbestos that may be constituents of soil.

Public Works Order No. 171,378[42] outlines strict requirements for excavators to follow for the protection of the health and safety of the general public when excavation of material occurs. In compliance with Public Works Order No. 171, 378, the project sponsor (Public Works) and the contractor responsible for construction activities at the project site would be required to use the following practices to control construction dust on the site, or other practices that result in equivalent dust control that are acceptable to the Director of Public Works. Dust suppression activities includes misting/spraying during any dust-generating activities in such a way that prevents puddling and/or generation of runoff that could potentially reach storm drains; minimizing the amount of excavated material or demolition waste stored at the construction site and removing all hazardous or suspected hazardous materials from the site no later than the end of each workday; wetting all exposed soil surfaces at least three times daily during dry

[42] Department of Public Works, Order No. 171,378, 1998, Public Works Order 171,378, *https://sfpublicworks.org/sites/default/files/Public%20Works%20Order%20171%2C378.pdf*.

weather or as needed; and performing wet sweeping at the end of each shift and keeping the construction site and adjacent area clean. In addition, haul trucks carrying excavated materials shall be loaded so that the excavated materials would not extend above the walls or back of the truck bed, and each load shall be wetted and tightly covered prior to leaving the site.

Compliance with the regulations and procedures set forth by the Public Works Order No. 171,378 would reduce potential dust-related air quality impact levels to ***less than significant***, and no mitigation measures would be required.

Criteria Air Pollutants

As described previously, construction of the proposed project would result in emissions of criteria air pollutants associated with land-based construction equipment and harbor craft; on-road vehicles such as haul trucks and worker commutes; off-gassing from asphalt paving and roadway striping activities; and detoured vehicle trips and the bus bridge that would be implemented due to the closure of the Islais Creek Bridge during the project's 24-month construction period.

Emissions from land-based off-road construction equipment were modeled using emission factors and calculation methodology equivalent to the California Air Pollution Control Officers Association's California Emissions Estimator Model (CalEEMod). Additionally, emissions estimates were supplemented with accepted calculation methodology, such as OFFROAD 2021, the air board's Commercial Harbor Craft Methodology, and/or Harbor craft, Dredge, and Barge Emission Factor Calculator for emission sources not available in CalEEMod (e.g., harbor craft). As previously discussed for Impact AQ-1, construction activities would comply with the San Francisco Clean Construction Ordinance, which requires the proposed project to use low-emitting construction equipment because the project site is in the APEZ. Therefore, emission estimates assumed that construction equipment with engines greater than 25 horsepower would meet Tier 4 interim standards. Due to the closure of the Islais Creek Bridge during construction, on-road vehicles would be required to take alternative routes to their destination, and SFMTA would implement a detour plan for transit vehicles as described in more detail in the Project Description, on page 2-13 in Chapter 2.G of the draft EIR. Emissions from detoured traffic and the bus bridge were considered in the analysis based on EMFAC 2021 emissions factors. Additional methodology and assumptions are provided in the air quality technical memorandum prepared for the proposed project.[43]

Table 7 and Table 8 present the criteria air pollutant emissions modeling results for the proposed project, relative to the applicable significance thresholds (as described in Table 6) for Year 1 (2025) and Year 2 (2026), respectively. Estimated construction-related emissions include emissions (ROG, NO_X, PM_{10}, and $PM_{2.5}$) associated with the use of off-road equipment (including land-based and harbor craft); worker commute trips, haul truck trips, traffic detours, bus bridge operation, asphalt paving, and roadway striping activities.

[43] AECOM Technical Services, Inc., Air Quality Technical Memorandum for the Islais Creek Bridge Project, October 2023.

Table 7 Average Daily Criteria Air Pollutant Emissions During Year 1 (2025) Construction

Source Description	2025 Average Daily Emissions[1] (lbs/day)			
	ROG	NO_X	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
Off-Road Construction Equipment	0.58	14.62	0.13	0.13
On-Road Construction Equipment	0.08	0.25	<0.01	<0.01
Harbor Craft Equipment	0.88	6.10	0.39	0.35
Roadway Striping	—	—	—	—
Paving Off-Gassing	—	—	—	—
Detoured Traffic	0.31	1.86	0.04	0.03
Bus Bridge	0.73	4.13	0.08	0.08
2025 Total Emissions	2.58	26.96	0.64	0.59
Significance Threshold	54	54	82	54
Significant Impact?	**No**	**No**	**No**	**No**

Notes:

Emissions associated with off-gassing due to roadway striping and asphalt paving would occur in Year 2 (2026); accordingly, emissions from these sources are zero in this table.

1. Average daily emission estimates are based on 261 construction workdays in 2025.

Lbs/day = pounds per day
NO_X = oxides of nitrogen
PM_{10} = particulate matter less than or equal to 10 micrometers in diameter
$PM_{2.5}$ = particulate matter less than or equal to 2.5 micrometers in diameter
ROG = reactive organic gases

Source: Modeled by AECOM 2023

Table 8 Average Daily Criteria Air Pollutant Emissions During Year 2 (2026) Construction

Source Description	2026 Average Daily Emissions[1] (lbs/day)			
	ROG	NO_X	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
Off-Road Construction Equipment	0.46	11.88	0.11	0.10
On-Road Construction Equipment	0.08	0.25	<0.01	<0.01
Harbor Craft Equipment	0.63	4.95	0.33	0.29
Roadway Striping	0.04	—	—	—
Paving Off-Gassing	0.01	—	—	—
Detoured Traffic	0.31	1.86	0.04	0.03
Bus Bridge	0.73	4.13	0.08	0.08
2025 Total Emissions	2.25	23.08	0.55	0.51
Significance Threshold	54	54	82	54
Significant Impact?	**No**	**No**	**No**	**No**

Notes:

1. Average daily emission estimates are based on 261 construction workdays in 2026.

Lbs/day = pounds per day
NO_X = oxides of nitrogen
PM_{10} = particulate matter less than or equal to 10 micrometers in diameter
$PM_{2.5}$ = particulate matter less than or equal to 2.5 micrometers in diameter
ROG = reactive organic gases

Source: Modeled by AECOM 2023

As shown in Table 7 and Table 8, in 2025 and 2026, respectively, average daily criteria air pollutant emissions during construction would not exceed the applicable significance threshold for ROG, NO_X, PM_{10} or $PM_{2.5}$. Because the proposed project would not exceed any significance threshold for criteria air pollutants, the impact would be ***less than significant***, and no mitigation is required.

Impact AQ-3: The proposed project would generate toxic air contaminants, including diesel particulate matter, and would expose sensitive receptors to substantial pollutant concentrations. ***(Less than Significant with Mitigation)***

The proposed project is in San Francisco's APEZ, an area where air pollutant levels exceed health protective standards. Project construction would result in temporary emissions of PM (primarily DPM) and other TACs through operations such as worker commute trips; use of off-road equipment and harbor craft; hauling trips; detoured traffic, and a bus bridge. The new bridge would operate similarly to the existing one, and would support improved transit, pedestrian, and bicycle facilities. Therefore, the proposed project would not generate new sources of operational emissions, and only construction-related TAC emissions were evaluated quantitatively.

This analysis evaluates health risks from exposure to TACs at sensitive receptor and offsite worker locations in accordance with air district guidance.[44] Specifically, health risks are evaluated at schools, health care facilities, residential dwellings, and offsite worker locations.

Firefighters at San Francisco Fire Station 25, 15 feet south of the proposed project boundary, are the closest worker receptors to the project site. There are also worker receptors (warehouse and commercial-use buildings) within 20 to 80 feet of the proposed project site along the southern and northern boundaries. The Bayview Child Health Center is at 3450 Third Street. This healthcare center is approximately 450 feet away from the proposed project site. The closest school is the Rise University Preparatory school at 1601 Galvez Avenue, approximately 2,150 feet from the proposed project site, and within 160 feet of Third Street (where project vehicles may operate). The closest daycare is a home daycare on Hudson Avenue, approximately 1,000 feet from Third Street, beyond the modeling domain, and therefore not assessed as part of the analysis because impacts decrease with distance from the project site. As a result, health impacts analyzed at the closer residential receptors would be higher than the daycare, which is outside the modeling domain. The closest residential dwelling to the north of the proposed project is at 1600 Indiana Street, approximately 1,270 feet northwest from the proposed project site and within 20 feet of detoured vehicle routes that would occur along Cesar Chavez Street. The closest residential dwelling to the south of the proposed project is approximately 1,800 feet away and within 20 feet of Third Street (where project detoured vehicle traffic may operate), at 3908 Third Street.

[44] Bay Area Air Quality Management District, California Environmental Quality Act Air Quality Guidelines, April 2023, *https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines*, accessed August 22, 2023.

The HRA prepared for the proposed project included an analysis of project health risks to the above-mentioned receptors.[45] Health risks were evaluated for sources emitting TACs during construction of the proposed project. The proposed project construction is anticipated to occur over a 24-month period (2025 and 2026). Long-term cancer risk exposure and annual average $PM_{2.5}$ concentrations over the duration of the 24-month construction period were evaluated for the following four specific receptor groups (resident, child, worker, and student), using exposure parameters consistent with air district guidance.[46]

- Resident Receptor – Exposure Starting Age: third trimester in utero and 0 years for 2025 and 2026 construction years, respectively.
- Child Receptor (Healthcare Center) – Exposure Starting Age: 0 years and 1 year for 2025 and 2026 construction years, respectively.
- Student Receptor[47] – Exposure Starting Age: 4 years and 5 years for 2025 and 2026 construction years, respectively.
- Worker Receptor – Exposure Starting Age: 16 years and 17 years for 2025 and 2026 construction years, respectively.

The maximally exposed receptors are the receptor locations with the maximum cancer risk and $PM_{2.5}$ concentration as a result of the proposed project for each receptor type. The maximally exposed individual resident receptor was identified to be a residential dwelling approximately 1,800 feet south-southwest of the proposed project site, at 3908 Third Street. The maximally exposed individual worker receptor was identified to be at San Francisco Fire Station 25, approximately 15 feet southeast of the proposed project site. The maximally exposed student receptor was identified at the Rise University Preparatory Middle School, approximately 2,150 feet south of the proposed project site along Third Street. The maximally exposed child receptor was identified at the Bayview Child Health Center, approximately 430 feet south of the proposed project site, at the intersection of Third Street and Burke Avenue. There are no onsite health risks to evaluate because the proposed project does not include residential dwellings or other sensitive receptors.

As discussed above on page 42, because the location of the maximum exposed receptors is already exposed to cancer risk and $PM_{2.5}$ concentrations that meet the APEZ criteria, the proposed project would result in a significant impact if it resulted in excess cancer risk at or greater than 7.0 per one million, or $PM_{2.5}$ concentrations at or above 0.2 $\mu g/m^3$ at any maximally exposed receptor.

Table 9 presents the results of the HRA and identifies the increased lifetime excess cancer risk and localized annual average $PM_{2.5}$ concentrations from exposure to existing plus project emissions for maximally exposed receptors.

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[45] AECOM Technical Services, Inc., Air Quality Technical Memorandum for the Islais Creek Bridge Project, October 2023.

[46] Bay Area Air Quality Management District, CEQA Guidelines Appendix E: Recommended Methods for Screening and Modeling Local Risks and Hazards, April 2023, *https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/appendix-e-recommended-methods-for-screening-and-modeling-local-risks-and-hazards_final-pdf.pdf?la=en*.

[47] Although Rise University Preparatory school is a middle school, the HRA conservatively assumes student exposure beginning in elementary school with a pre-K class and starting age of 4 years old.

Table 9 Lifetime Excess Cancer Risk and $PM_{2.5}$ Concentration at the Maximally Exposed Receptors

Condition	Health Risk	
	Lifetime Excess Cancer Risk (in one million)	$PM_{2.5}$ Concentration (µg/m³)
Resident Receptor (UTM_x = 553,860 m, UTM_y = 4,178,340 m)		
Existing Conditions[1]	124.46	10.02
Existing Health Risk Meets APEZ Criteria?	Yes	Yes
Project Contribution	1.01	0.06
Existing plus Project	125.47	10.08
Meets APEZ Health Risk Criteria with Proposed Project Contribution?	Yes	Yes
Significance Threshold for Project Contribution	**7.0**	**0.2**
Threshold Exceeded?	**No**	**No**
Worker Receptor (UTM_x = 554,000 m, UTM_y = 4,177,880 m)		
Existing Conditions[1]	106.08	11.04
Existing Health Risk Meets APEZ Criteria?	Yes	Yes
Project Contribution	0.56	0.21
Existing plus Project	106.64	11.25
Meets APEZ Health Risk Criteria with Proposed Project Contribution?	Yes	Yes
Significance Threshold for Project Contribution	**7.0**	**0.2**
Threshold Exceeded?	**No**	**Yes**
Child Receptor (Bayview Child Health Care Center) (UTM_x = 553,960 m, UTM_y = 4,177,740 m)		
Existing Conditions[1]	101.91	10.64
Existing Health Risk Meets APEZ Criteria?	Yes	Yes
Project Contribution	1.14	0.07
Existing plus Project	103.05	10.71
Meets APEZ Health Risk Criteria with Proposed Project Contribution?	Yes	Yes
Significance Threshold for Project Contribution	**7.0**	**0.2**

Condition	Health Risk	
	Lifetime Excess Cancer Risk (in one million)	$PM_{2.5}$ Concentration ($\mu g/m^3$)
Threshold Exceeded?	**No**	**No**
Student Receptor (UTM_x = 553,900 m, UTM_y = 4,177,220 m)		
Existing Conditions[1]	111.31	9.64
Existing Health Risk Meets APEZ Criteria?	Yes	Yes
Project Contribution	0.15	0.05
Existing plus Project	111.46	9.69
Meets APEZ Health Risk Criteria with Proposed Project Contribution?	Yes	Yes
Significance Threshold for Project Contribution	**7.0**	**0.2**
Threshold Exceeded?	**No**	**No**

Notes:

1. Background concentration from 2020 citywide HRA database.

m = meters
$\mu g/m^3$ = micrograms per cubic meter
$PM_{2.5}$ = particulate matter less than or equal to 2.5 micrometers in diameter
UTM = Universal Transverse Mercator
Source: Compiled by AECOM 2023

As shown in Table 9, the proposed project's contribution to lifetime excess cancer risk would be the highest for a child receptor at the Bayview Child Health Center. This receptor could be exposed to TAC emissions (primarily from diesel particulate matter $PM_{2.5}$) that would result in an excess cancer risk of less than 2.0 per one million persons exposed, which would not exceed the thresholds of significance of 7.0 per one million persons. The maximum annual average $PM_{2.5}$ concentration from the proposed project would occur at a worker receptor at San Francisco Fire Station 25. This receptor could be exposed to $PM_{2.5}$ concentrations of up to 0.21 $\mu g/m^3$, which would exceed the 0.2 $\mu g/m^3$ threshold. In summary, the maximum health risk impacts would not result in excess cancer risk at or greater than 7.0 per one million persons at any receptor location, but would result in $PM_{2.5}$ concentrations above 0.2 $\mu g/m^3$ at the maximum worker receptor. Noncancer chronic and acute risks generated from the proposed project are both well below (less than 1 percent) the air district's HI threshold of 1.0. Overall, the proposed project's impact would be ***significant*** because it would result in a significant health risk impact at the maximally exposed worker receptor, and mitigation would be required to reduce the annual average $PM_{2.5}$ concentration exceedance.

Mitigation Measures

As shown in Table 9, the proposed project would result in a significant health risk impact at the maximally exposed worker receptor. To address the annual average $PM_{2.5}$ concentration impact that would exceed the significance threshold during construction of the proposed project, implementation of **Mitigation Measure M-AQ-3: Off-Road Construction Equipment** would be required.

Mitigation Measure M-AQ-3: Off-Road Construction Equipment

The contractor shall comply with the following:

A. Engine Requirements

1. All off-road equipment greater than 25 horsepower shall have engines that meet or exceed either USEPA's or air board's Tier 4 final off-road emission standards.

2. Diesel engines, whether for off-road or on-road equipment, shall not be left idling for more than two minutes at any location, except as provided in exceptions to the applicable state regulations regarding idling for off-road and on-road equipment (e.g., traffic conditions and safe operating conditions). The contractor shall post legible and visible signs in English, Spanish, and Chinese in designated queuing areas and at the construction site to remind operators of the two-minute idling limit.

3. The contractor shall instruct construction workers and equipment operators in the maintenance and tuning of construction equipment, and require that such workers and operators properly maintain and tune equipment in accordance with manufacturer specifications.

B. Construction Emissions Minimization Plan

Before starting onsite construction activities, the contractor shall submit a construction emissions minimization plan to the ERO or the ERO's designee for review and approval. The plan shall state, in reasonable detail, how the contractor will meet the engine requirements listed above.

1. The 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. The description may include but is not limited to equipment type, equipment manufacturer, equipment identification number, engine model year, engine certification (tier rating), horsepower, engine serial number, and expected fuel use and hours of operation. For off-road equipment using alternative fuels, the description shall also specify the type of alternative fuel being used.

2. The plan shall include a statement from the contractor certifying that the contractor agrees to comply fully with the plan.

3. Public Works shall ensure that all applicable requirements of the plan have been incorporated into the contract specifications.

4. Public Works shall make the plan available to the public for review on site during working hours. Public Works shall post at the construction site a legible and visible sign summarizing the plan. The sign shall also state that the public may ask to inspect the plan for the proposed project at any time during working hours and shall explain how to request to inspect the plan. The project sponsor shall post at least one copy of the sign in a visible location on each side of the construction site facing a public right-of-way.

C. Monitoring

After the start of construction activities, the contractor shall submit reports every six months to the ERO or ERO designee, documenting compliance with the plan.

The effectiveness of **Mitigation Measure M-AQ-3: Off-Road Construction Equipment** was quantified. Mitigated health risks (lifetime excess cancer risk and annual average $PM_{2.5}$ concentration) from exposure to existing plus project emissions (after application of above-noted mitigation measure) for maximally exposed receptors are summarized in Table 10.

Table 10 Mitigated Lifetime Excess Cancer Risk and $PM_{2.5}$ Concentration at the Maximally Exposed Receptors

Condition	Health Risk	
	Lifetime Excess Cancer Risk (in one million)	$PM_{2.5}$ Concentration ($\mu g/m^3$)
Resident Receptor (UTM_x = 553,860 m, UTM_y = 4,178,340 m)		
Existing Conditions[1]	124.46	10.02
Existing Health Risk Meets APEZ Criteria?	Yes	Yes
Project Contribution	0.53	0.06
Existing plus Project	124.99	10.08
Meets APEZ Health Risk Criteria with Proposed Project Contribution?	Yes	Yes
Significance Threshold for Project Contribution	**7.0**	**0.2**
Threshold Exceeded?	**No**	**No**
Worker Receptor (UTM_x = 554,000 m, UTM_y = 4,177,880 m)		
Existing Conditions[1]	106.08	11.04
Existing Health Risk Meets APEZ Criteria?	Yes	Yes
Project Contribution	0.22	0.18
Existing plus Project	106.30	11.22
Meets APEZ Health Risk Criteria with Proposed Project Contribution?	Yes	Yes
Significance Threshold for Project Contribution	**7.0**	**0.2**
Threshold Exceeded?	**No**	**No**

Condition	Health Risk	
	Lifetime Excess Cancer Risk (in one million)	$PM_{2.5}$ Concentration (µg/m³)
Child Receptor (Bayview Child Health Care Center) (UTM_x = 553,960 m, UTM_y = 4,177,740 m)		
Existing Conditions[1]	101.91	10.64
Existing Health Risk Meets APEZ Criteria?	Yes	Yes
Project Contribution	1.03	0.07
Existing plus Project	102.94	10.70
Meets APEZ Health Risk Criteria with Proposed Project Contribution?	Yes	Yes
Significance Threshold for Project Contribution	**7.0**	**0.2**
Threshold Exceeded?	**No**	**No**
Student Receptor (UTM_x = 553,900 m, UTM_y = 4,177,220 m)		
Existing Conditions[1]	111.31	9.64
Existing Health Risk Meets APEZ Criteria?	Yes	Yes
Project Contribution	0.15	0.05
Existing plus Project	111.45	9.69
Meets APEZ Health Risk Criteria with Proposed Project Contribution?	Yes	Yes
Significance Threshold for Project Contribution	**7.0**	**0.2**
Threshold Exceeded?	**No**	**No**

Notes: Totals may not necessarily add up precisely due to rounding.

1. Background concentration from 2020 citywide HRA database.

m = meters
µg/m³ = micrograms per cubic meter
$PM_{2.5}$ = particulate matter less than or equal to 2.5 micrometers in diameter
UTM = Universal Transverse Mercator
Source: Compiled by AECOM 2023

With the implementation of **Mitigation Measure M-AQ-3: Off-Road Construction Equipment**, the maximum $PM_{2.5}$ concentration would not exceed 0.2 µg/m^3 at the worker receptor or any other sensitive receptor location. Therefore, the proposed project's impact would be ***less than significant with mitigation***.

Impact AQ-4: The proposed project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people. ***(Less than Significant)***

Typical odor sources of concern include wastewater treatment plants, sanitary landfills, transfer stations, composting facilities, petroleum refineries, asphalt batch plants, chemical manufacturing facilities, fiberglass manufacturing facilities, auto body shops, rendering plants, and coffee roasting facilities.[48]

During construction of the proposed project, diesel exhaust from construction equipment and vehicles, as well as reactive organic gases emitted during paving, would generate some odors, which could increase the odors temporarily in the immediate vicinity of the equipment operation. The odors would dissipate rapidly with distance from the odor-generating activity. The generation of odors from the use of diesel engines and paving activities would not be substantial or permanent. As described previously, following construction, operation of Islais Creek Bridge would remain similar to existing conditions, which is not a typical odor source of concern. Therefore, the proposed project would not result in other emissions, such as those leading to odors, adversely affecting a substantial number of people. This impact would be ***less than significant***, and no mitigation is required.

Impact C-AQ-1: The proposed project, in combination with cumulative projects, would result in a significant cumulative impact on air quality. ***(Less than Significant with Mitigation)***

Regional air quality effects are inherently cumulative effects—the nonattainment status of regional pollutants results from past and present development in the air basin. No single project would be sufficient in size to result in nonattainment of regional air quality standards. The potential for the proposed project to result in significant criteria air pollutant emissions, and therefore a cumulatively considerable contribution to nonattainment criteria pollutants, is addressed under Impact AQ-2. Therefore, no separate cumulative criteria air pollutant analysis is required.

The discussion of cumulative impacts here addresses cumulative impacts related to exposure to local sources of $PM_{2.5}$ and TAC emissions and to other sources of emissions, such as those leading to odors.

The offsite maximally exposed sensitive and worker receptors are in an area currently designated as an APEZ; therefore, a significant health risk impact already exists. As discussed under Impact AQ-3, an HRA was conducted, and it was determined that the impacts from the proposed project would be ***less than significant with mitigation***.

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[48] Bowmani, Zsea, Bodies and Biofuel: Regulating an Animal Rendering Plant in the Heart of San Francisco, Santa Clara University School of Law, March 30, 2022, *https://law.scu.edu/environmental-justice/bodies-and-biofuel-regulating-an-animal-rendering-plant-in-the-heart-of-silicon-valley/*.

Health risks from cumulative projects not already included in the 2020 citywide HRA were evaluated to determine whether they could substantially contribute to the existing plus project health risks at the offsite maximally exposed sensitive and worker receptors for the proposed project. Because the proposed project's maximally exposed sensitive and worker receptors are already located in the APEZ, a significant cumulative health risk impact exists. A review of nearby projects within 1,000 feet of the offsite maximally exposed sensitive and worker receptors identified one nearby project (Carpenters Union Hall). The Carpenters Union Hall project is approximately 330 feet from the maximally exposed worker receptor, and less than 200 feet from the maximally exposed child receptor. The Carpenters Union Hall project at 3433 Third Street would include construction of a new union/assembly hall, office space, and parking. Impacts from this nearby project would likely increase health risks at the proposed project's maximally exposed sensitive and worker receptors from the use of diesel off-road construction equipment that emits diesel particulate matter, a known TAC. Construction emissions would be temporary in nature. On completion, the Carpenter's Union Hall project would likely result in minimal changes to TACs and $PM_{2.5}$ from diesel traffic.

As a result, construction of the Carpenters Union Hall at 3433 Third Street could contribute additional emissions that may incrementally increase health risks at the proposed project's maximally exposed individual receptors above the health risk levels provided in Table 10, under Impact AQ-3. As discussed under Impact AQ-3, without mitigation, the proposed project would result in $PM_{2.5}$ concentrations at the San Francisco Fire Station 25 worker receptor that exceed the 0.2 $\mu g/m^3$ threshold, resulting in a cumulatively considerable contribution to cumulative health risks. However, as shown in Table 10 (see Impact AQ-3), the proposed project's health risk contributions at the offsite maximally exposed worker receptor would not exceed this threshold with implementation of **Mitigation Measure M-AQ-3: Off-Road Construction Equipment**. Therefore, although there is an existing cumulatively significant impact due to past and present air pollutants, and the proposed project combined with cumulative projects could increase health risk impacts, the proposed project, with implementation of Mitigation Measure M-AQ-3, would not contribute considerably to this cumulatively significant impact.

This cumulative health risk analysis also evaluated potential impacts with select projects beyond 1,000 feet from of the offsite maximally sensitive and worker receptors, given their size and potential for overlap of construction routes with the proposed project. This expanded review identified five projects, which included the following:

- 2000 Marin Street (Water Enterprise City Distribution Center) – The SFPUC Water Enterprise's City Distribution Division plans to develop a new headquarters, replacing the existing one at 1990 Newcomb Avenue. The proposed headquarters would consist of an administration building, car shop, machine shop, meter shop, warehouse, fabrication shop, paint and autobody shop, parking garage, laydown area, and fuel station. As of fall 2023, the 2000 Marin Street project construction is anticipated to begin fall of 2024 and would conclude in winter 2028.

- Amador Street Sewer Project – The Port of San Francisco is planning to replace aging roadway and pump station infrastructure on Amador Street. Project construction is scheduled for March 2024 to November 2025.

- Pier 94 Grassland Meadow Enhancement Project – The Port of San Francisco would remove invasive nonnative plants from 3 acres of uplands adjacent to the Pier 94 Wetlands and would plant 500 native plants, creating 2 acres of biologically diverse native grasslands meadow habitat. The project construction date is unknown at the time of preparation of this initial study.

- Biosolids Digester Facilities Project – SFPUC is currently constructing a new biosolids treatment, odor control, energy recovery, and associated facilities at the existing Southeast Water Pollution Control Plant in the southeastern part of San Francisco. The plant is between Jerrold Avenue and McKinnon Avenue and Phelps Street and the Caltrain railway. Construction of the project began in 2019 and is anticipated to be completed in 2028.

- 2101 Jerrold Avenue – The Department of Environment proposes a project to install exterior wall-mounted electric-vehicle charging units at existing parking bays at the exterior of existing structures at 110 Cesar Chavez Street and 2101 Jerrold Avenue. Additionally, a solar photovoltaic system comprising 566 panels and eight inverters would be installed on the roof at 2101 Jerrold Avenue. The project construction date is unknown at this time.

The 2000 Marin Street project is approximately 2,000 feet to the northwest of the maximally exposed worker receptor. The Amador street sewer and Pier 94 grassland meadow enhancement projects are approximately 1,600 feet and 3,000 feet from the maximally exposed worker and child receptors, respectively. The biosolids digester facilities and 2101 Jerrold Avenue projects are approximately 1,100 feet and 3,100 feet from the maximally exposure residential receptor, respectively. Based on the information available, there may be some overlap of construction activities associated with these projects and the construction activities for the proposed project. Except for the biosolids digester facilities project, discussed below, the above-mentioned projects are likely sufficiently distant from the maximally exposed proposed project receptors, resulting in minimal additional cumulative health risk impacts. Additional details and discussion are provided in Section 2.2.5 of the Air Quality Technical Memorandum for the Islais Creek Bridge project.

At the time of this analysis, the only nearby project that had quantified health risks was the biosolids digester facilities project.[49] Given the current construction schedule, it is anticipated that this project would overlap with the proposed project; therefore, the maximum health risk impacts during construction of the biosolids digester facilities project were conservatively used to evaluate cumulative impacts. The maximally exposed receptor during construction for $PM_{2.5}$ concentrations was estimated to be 0.017 µg/m^3 and was approximately 1,000 feet to the south of the maximally exposed receptor from the proposed project. The maximally exposed receptor for cancer risk during construction of the biosolids digester facilities project was estimated to be 1.7 per one million at a location that is approximately 550 feet to the south of the maximally exposed residential receptor from the proposed project.

Table 11 summarizes the cumulative impacts at the maximally exposed sensitive and worker receptors from exposure to the biosolids digester facilities project, with existing plus proposed project (with mitigation) emissions.

[49] San Francisco Planning, 2017, Biosolids Digester Facilities Project, Air Quality Technical Report. *http://sfmea.sfplanning.org/SFPUC%20SEP%20Biosolids_AQTR_2017-03-10.pdf*.

Table 11 Mitigated Lifetime Excess Cancer Risk and $PM_{2.5}$ Concentration at the Maximally Exposed Receptors

Condition	Health Risk	
	Lifetime Excess Cancer Risk (in one million)	$PM_{2.5}$ Concentration ($\mu g/m^3$)
Resident Receptor (UTM_x = 553,860 m, UTM_y = 4,178,340 m)		
Existing Conditions[1]	124.46	10.02
Cumulative Projects[2]	1.70	0.02
Project Contribution	0.53	0.06
Cumulative Health Risk	126.69	10.10
Worker Receptor (UTM_x = 554,000 m, UTM_y = 4,177,880 m)		
Existing Conditions[1]	106.08	11.04
Cumulative Projects[2]	N/A	N/A
Project Contribution	0.22	0.18
Cumulative Health Risk	106.30	11.22
Child Receptor (Health Care Center) (UTM_x = 553,960 m, UTM_y = 4,177,740 m)		
Existing Conditions[1]	101.91	10.64
Cumulative Projects[2]	N/A	N/A
Project Contribution	1.03	0.07
Cumulative Health Risk	102.94	10.70
Student Receptor (UTM_x = 553,900 m, UTM_y = 4,177,220 m)		
Existing Conditions[1]	111.31	9.64
Cumulative Projects[2]	1.70	0.02
Project Contribution	0.15	0.05
Cumulative Health Risk	113.15	9.71

Notes: Totals may not necessarily add up precisely due to rounding.

1. Background concentration from 2020 citywide HRA database.
2. Quantified health risks for excess cancer and annual average $PM_{2.5}$ concentrations from health risk assessment conducted for the Biosolids Digester Facilities Project.

m = meters
$\mu g/m^3$ = micrograms per cubic meter
N/A = Distance from maximally exposed receptors from cumulative projects and proposed project worker and child receptors is beyond 2,000 feet and anticipated to be negligible.
$PM_{2.5}$ = particulate matter less than or equal to 2.5 micrometers in diameter
UTM = Universal Transverse Mercator

Source: Compiled by AECOM 2023

For receptors that meet the APEZ criteria, annual average $PM_{2.5}$ concentrations from the proposed project at or above 0.2 µg/m^3, or an excess cancer risk at or above 7.0 per one million, would be a cumulatively considerable health risk contribution and would result in a significant cumulative impact.[50] As shown in Table 11, the proposed project's health risk contributions at the offsite maximally exposed sensitive and worker receptors would not exceed these thresholds with mitigation (see **Mitigation Measure M-AQ-3: Off-Road Construction Equipment**). Therefore, although there is an existing cumulatively significant impact due to past and present air pollutants at receptor locations, and the proposed project combined with cumulative projects could increase health risk impacts, with mitigation, the proposed project would not substantially contribute to this cumulatively significant impact. This cumulative impact would be ***less than significant with mitigation.***

Topics:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
9. GREENHOUSE GAS EMISSIONS. Would the project:					
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐	☐
b) Conflict with any applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐	☐

GHG emissions and global climate change represent cumulative impacts. GHG emissions cumulatively contribute to the significant adverse environmental impacts of global climate change. No single project could generate enough GHG emissions to noticeably change the global average temperature; instead, the combination of GHG emissions from cumulative projects has contributed and will continue to contribute to global climate change and its associated environmental impacts. Accordingly, this analysis is in a cumulative context only, and the analysis of this resource topic does not include a separate project-level impact discussion.

On April 20, 2022, the air district adopted updated GHG significance thresholds.[51] Consistent with CEQA Guidelines sections 15064.4 and 15183.5 which address the analysis and determination of significant impacts from a proposed project's GHG emissions, the updated thresholds maintain the air district's previous GHG threshold that allow projects that are consistent with a GHG reduction strategy to conclude that the project's GHG impact is less than significant.

[50] San Francisco Department of Public Health, San Francisco Planning Department, and Ramboll, *San Francisco Citywide Health Risk Assessment: Technical Support Documentation*, September 2020.

[51] Bay Area Air Quality Management District, CEQA Thresholds and Guidelines Update, *https://www.baaqmd.gov/plans-and-climate/californiaenvironmental-quality-act-ceqa/updated-ceqa-guidelines*, accessed May 19, 2023.

San Francisco's 2023 GHG Reduction Strategy Update[52] presents a comprehensive assessment of policies, programs, and ordinances that collectively represent San Francisco's GHG reduction strategy in compliance with the air district's guidelines and CEQA Guidelines. These GHG reduction actions have resulted in a 48 percent reduction in GHG emissions in 2020 compared to 1990 levels,[53] which far exceeds the goal of 2020 GHG emissions equaling those in 1990 set in Executive Order S-3-05[54] and the California Global Warming Solutions Act.[55] The city has also met and exceeded the 2030 target of 40 percent reduction below 1990 levels set in the California Global Warming Solutions Act of 2016[56] and the air district's 2017 Clean Air Plan[57] more than 10 years before the target date.

San Francisco's GHG reduction goals, updated in July 2021 by ordinance 117-02,[58] are consistent with, or more aggressive than, the long-term goals established under executive orders S-3-05,[59] B-30-15,[60] B-55-18,[61] the California Global Warming Solutions Act of 2016.[62] The updated GHG ordinance demonstrates the city's commitment to continued GHG reductions by establishing targets for 2030, 2040, and 2050 and setting other critical sustainability goals. In particular, the updated ordinance sets a goal to reach net-zero sector-based GHG emissions by 2040 and sequester any residual emissions using nature-based solutions.[63] Thus, the city's GHG reduction goal is consistent with the state's long-term goal of reaching carbon neutrality by 2045. The updated GHG ordinance required the San Francisco Department of the Environment to prepare and submit to the mayor a climate action plan (CAP) by December 31, 2021. The CAP, which was released on December 8, 2021, and will be updated every five years, carries forward the efforts of the city's previous CAPs and charts a path toward meeting the GHG commitments of the Paris Agreement (e.g., limit global warming to 1.5 degrees Celsius) as well as the reduction targets adopted in the GHG ordinance.

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[52] San Francisco Planning Department, *2023 Greenhouse Gas Reduction Strategy Update,* October 2023, *https://sfplanning.org/project/greenhouse-gas-reduction-strategies*, accessed November 3, 2023.

[53] The latest inventory from SF Environment indicates a 48 percent reduction in GHG emissions below 1990 levels for year 2020. Because it is unclear the degree to which the pandemic may have reduced citywide GHG emissions in year 2020, this document reports year 2019 GHG emissions. See San Francisco Department of the Environment, *San Francisco's 2019 Carbon Footprint, https://sfenvironment.org/carbonfootprint*, July 12, 2023.

[54] Office of the Governor, Executive Order S-3-05, June 1, 2005, *https://www.library.ca.gov/wp-content/uploads/GovernmentPublications/executive-order-proclamation/5129-5130.pdf*, July 12, 2023.

[55] California Legislative Information, Assembly Bill 32, September 27, 2006, *http://www.leginfo.ca.gov/pub/05-06/bill/asm/ab_0001-0050/ab_32_bill_20060927_chaptered.pdf*, accessed July 12, 2023.

[56] California Legislative Information, Senate Bill 32, September 8, 2016, *https://leginfo.legislature.ca.gov/faces/billPdf.xhtml?bill_id=201520160SB32&version=20150SB3288CHP*, July 12, 2023.

[57] Bay Area Air Quality Management District, Clean Air Plan, September 2017, *http://www.baaqmd.gov/plans-and-climate/air-quality-plans/current-plans*, accessed July 12, 2023.

[58] San Francisco Board of Supervisors. *Ordinance No. 117-21, File No. 210563*, July 20, 2021, *https://sfbos.org/sites/default/files/o0117-21.pdf*, accessed July 12, 2023. San Francisco's GHG reduction goals are codified in section 902(a) of the Environment Code and include the following goals: (1) by 2030, a reduction in sector-based GHG emissions of at least 61 percent below 1990 levels; (2) by 2030, a reduction in consumption-based GHG emissions equivalent to a 40 percent reduction compared to 1990 levels; (3) by 2040, achievement of net zero sector-based GHG emissions by reducing such emissions by at least 90 percent compared to 1990 levels and sequestering any residual emissions; and (4) by 2050, a reduction in consumption-based GHG emissions equivalent to an 80 percent reduction compared to 1990 levels.

[59] Executive Order S-3-05 sets forth a goal of an 80 percent reduction in GHG emissions by 2050. San Francisco's goal of net zero sector-based emissions by 2040 requires a greater reduction of GHG emissions.

[60] Office of the Governor, *Executive Order B-30-15*, April 29, 2015. *https://www.ca.gov/archive/gov39/2015/04/29/news18938/*, accessed July 12, 2023. Executive Order B-30-15 sets a state GHG emissions reduction goal of 40 percent below 1990 levels by 2030. San Francisco's 2030 sector based GHG reduction goal of 61 percent below 1990 levels requires a greater reduction of GHG emissions.

[61] Office of the Governor, *Executive Order B-55-18*, September 18, 2018. *https://www.ca.gov/archive/gov39/wp-content/uploads/2018/09/9.10.18-Executive-Order.pdf* accessed July 12, 2023. Executive Order B-55-18 establishes a statewide goal of achieving carbon neutrality as soon as possible, but no later than 2045, and achieving and maintaining net negative emissions thereafter. San Francisco's goal of net zero sector-based emissions by 2040 is a similar goal but requires achievement of the target five years earlier.

[62] Senate Bill 32 amends California Health and Safety Code Division 25.5 (also known as the California Global Warming Solutions Act of 2006) by adding Section 38566, which directs that statewide GHG emissions be reduced by 40 percent below 1990 levels by 2030. San Francisco's 2030 sector-based GHG reduction goal of 61 percent below 1990 levels requires a greater reduction of GHG emissions.

[63] Nature-based solutions are those that remove remaining emissions from the atmosphere by storing them in natural systems that support soil fertility or employing other carbon farming practices.

In summary, the CEQA Guidelines and air district-adopted GHG thresholds allow projects consistent with an adopted GHG reduction strategy to determine a less than significant GHG impact. San Francisco has a GHG reduction strategy that is consistent with near and long-term state and regional GHG reduction goals and is effective because the city has demonstrated its ability to meet state and regional GHG goals in advance of target dates. Therefore, projects that are consistent with San Francisco's GHG reduction strategy would not result in GHG emissions that would have a significant effect on the environment, and would not conflict with state, regional, or local GHG reduction plans and regulations.

Impact C-GG-1: The proposed project would generate greenhouse gas emissions, but not at levels that would result in a significant impact on the environment or conflict with any policy, plan, or regulation adopted for the purpose of reducing greenhouse gas emissions. ***(Less than Significant)***

Individual projects contribute to the cumulative effects of climate change by emitting GHGs directly or indirectly during its construction and operational phases. Direct operational emissions include GHG emissions from new vehicle trips and area sources (natural gas combustion). Indirect emissions include emissions from electricity providers; energy required to pump, treat, and convey water; and emissions associated with waste removal, disposal, and landfill operations.

The proposed project would generate GHG emissions during construction only, primarily through the operation of construction equipment, including off-road equipment and harbor craft (i.e., work boats and tugboats), worker commute vehicle trips, and transportation of material and debris via haul trucks; as well as activities associated with temporary bridge closure, such as detoured traffic and bus bridge operations. All of these activities would involve the combustion of fossil fuels (e.g., gasoline and diesel), leading to the emissions of GHGs, including carbon dioxide, nitrous oxides, and methane. The proposed project would be subject to applicable regulations adopted to reduce GHG emissions in the GHG reduction strategy, such as San Francisco's Clean Construction Ordinance and Construction and Demolition Debris Recovery Ordinance. These requirements are demonstrated in the GHG checklist completed for the proposed project.[64] Furthermore, through these requirements and **Mitigation Measure M-AQ-3: Off-Road Construction Equipment,** as described in Section E.8, Air Quality, the proposed project would implement several BMPs identified by the air district to reduce construction-related GHG emissions, including:

- Require all diesel-fueled off-road construction equipment to be equipped with USEPA Tier 4 Final compliant engines or better as a condition of contract.

- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to no more than 2 minutes. (A 5-minute limit is required by the state airborne toxics control measure [Title 13, Sections 2449(d)(3) and 2485 of the California Code of Regulations.]) Provide clear signage that posts this requirement for workers at the entrances to the site and develop an enforceable mechanism to monitor idling time to ensure compliance with this measure.

- Require all construction equipment to be maintained and properly tuned in accordance with manufacturer's specifications. Equipment should be checked by a certified mechanic and determined to be running in proper condition prior to operation.

[64] San Francisco Planning Department, Compliance Checklist Table for Greenhouse Gas Analysis for Islais Creek Bridge Project, October 20, 2023.

- Recycle or salvage nonhazardous construction and demolition debris, with a goal of recycling at least 15 percent more by weight than the diversion requirement in Title 24.
- Use locally sourced or recycled materials for construction materials.
- Include all requirements in applicable bid documents, purchase orders, and contracts, with successful contractors demonstrating the ability to supply the compliant off-road construction equipment for use prior to any ground-disturbing and construction activities.

Once operational, the proposed project would result in no change in GHG emissions from existing conditions as the bridge replacement includes the same number of vehicle and light rail lanes as the current bridge. The proposed project would not increase natural gas or electricity use, VMT, or other sources of operational GHG emissions. Therefore, increases of GHG emissions would be limited to the construction phase.

Therefore, because the proposed project would be consistent with the city's GHG reduction strategy, it would also be consistent with the GHG reduction goals of executive orders S-3-05, B-30-15, B-55-18; California Global Warming Solutions Act of 2016; and the clean air plan—and would not conflict with these plans or regulations. Therefore, the proposed project impact would be ***less than significant*** with respect to GHG emissions, and no mitigation would be required.

Topics:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
10. WIND. Would the project:					
a) Create wind hazards in publicly accessible areas of substantial pedestrian use?	☐	☐	☐	☒	☐

Impact WI-1: The proposed project would not create wind hazards in publicly accessible areas of substantial pedestrian use. ***(No Impact)***

A proposed project's wind impacts are directly related to its height, orientation, design, location, and surrounding development context. Wind impacts are generally caused by large building masses that extend substantially above their surroundings, and by buildings oriented so that a large wall catches a prevailing wind, particularly if such a wall includes little or no articulation. Based on wind analyses for other development projects in San Francisco, a building that does not exceed a height of 85 feet generally has little potential to cause substantial changes to ground-level wind conditions.

The proposed project would demolish and replace the existing Islais Creek Bridge; the structure would have no impact on wind hazards in publicly accessible areas of substantial pedestrian use because the structure is at the same elevation as the surrounding area that pedestrians use. No mitigation measures are required.

Impact C-WI-1: The proposed project, combined with cumulative projects, would not result in significant cumulative impacts related to wind. ***(No Impact)***

The proposed project would not create wind hazards in publicly accessible areas of substantial pedestrian use, and as a result, would not contribute to cumulative wind impacts.

Topics:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
11. SHADOW. Would the project:					
a) Create new shadow that substantially and adversely affects the use and enjoyment of publicly accessible open spaces?	☐	☐	☐	☒	☐

Impact SH-1: The proposed project would not create new shadow that substantially and adversely affects the use and enjoyment of publicly accessible open spaces. ***(No Impact)***

Planning code section 295 generally prohibits new structures taller than 40 feet that would cast additional shadows on open space that is under the jurisdiction of the San Francisco Recreation and Park Department between one hour after sunrise and one hour before sunset, at any time of the year, unless that shadow would not result in a significant adverse effect on the use of the open space.[65]

Several publicly accessible open spaces are located within 0.25 mile of the project site, including Islais Creek Park, Tulare Park, Rosa Parks Skate Plaza, Bayview Gateway Park, and Islais Creek Shoreline Access. The San Francisco Bay Trail is also within the vicinity of the proposed project and the trail path crosses the Islais Creek channel via the Illinois Street Bridge. These recreational facilities are shown on Figure 8.

The proposed project does not include structures that would exceed 40 feet in height and would not create new shadow that substantially and adversely affects the use and enjoyment of publicly accessible open spaces. There would be no impacts related to shadow and no mitigation measures would be required.

[65] American Legal Publishing, 2018. Sec. 295 Height Restrictions On Structures Shadowing Property Under the Jurisdiction Of the Recreation and Park Commission. https://codelibrary.amlegal.com/codes/san_francisco/latest/sf_planning/0-0-0-21861.

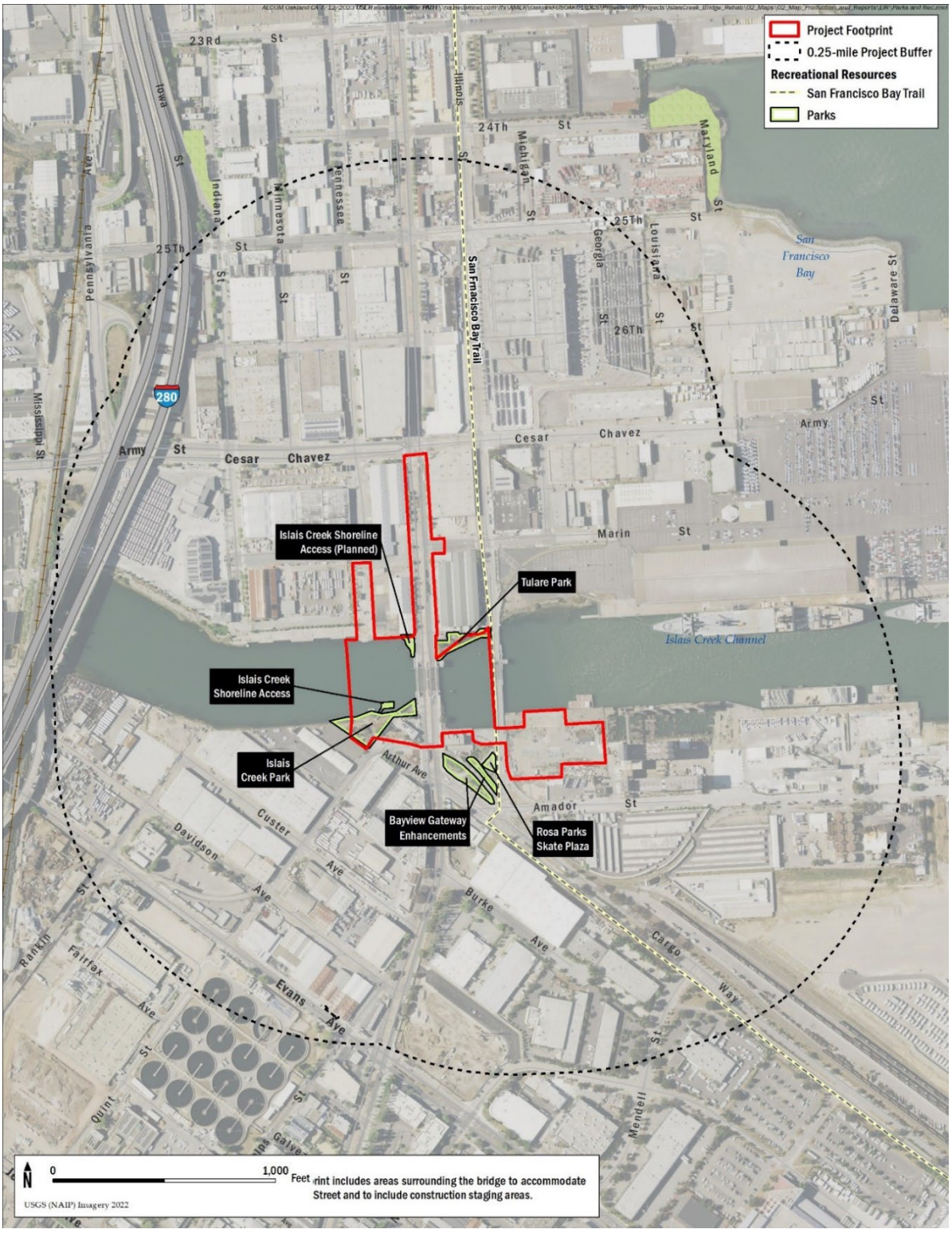

Figure 8 **Parks and Recreation Areas within 0.25 Mile of Islais Creek Bridge**

Impact C-SH-1: The proposed project, combined with cumulative projects, would not result in significant cumulative impacts related to shadow. ***(No Impact)***

The proposed project would have no shadow impacts and as a result, would not contribute to cumulative impacts related to shadow.

Topics:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
12. RECREATION. Would the project:					
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated?	☐	☐	☒	☐	☐
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	☒	☐

Impact RE-1: The proposed project would not increase the use of existing neighborhood and regional parks and other recreational facilities to such an extent that substantial physical deterioration of the facilities would occur or be accelerated. ***(Less than Significant)***

As described in Section E.3, Population and Housing, on page 9, a project would be considered growth-inducing if its implementation would result in substantial population increases, such as through the development of new homes. The proposed project would demolish and replace the existing Islais Creek Bridge in a similar configuration to the existing structure; the proposed project does not include residential or commercial uses that could result in a permanent increased demand for parks or other recreational facilities.

During project construction, workers may use nearby parks or recreational facilities during lunch or breaks. These facilities (shown on Figure 8 in Section E.11, Shadow) could accommodate the minor increase in use from construction workers during the 24-month construction period and this use would not substantially accelerate the physical deterioration of parks, or require the need for expanded parks or recreational facilities. This impact would be ***less than significant***, and no mitigation measures are required.

Impact RE-2: The proposed project would not include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment. ***(No Impact)***

The proposed project would demolish and replace the existing Islais Creek Bridge; the proposed project does not propose or require the construction of recreational facilities. The proposed project would include the construction of a joint pedestrian and bicycle pathway on the bridge, which would increase recreation access in the vicinity and would create an opportunity for future trail/bike projects to tie into an existing bridge crossing. Given that the proposed project does not include or require the construction of recreational facilities that would have an adverse physical effects on the environment, there would be no impact, and no mitigation measures are required.

Impact C-RE-1: The proposed project, combined with cumulative projects, would not result in significant cumulative impacts related to recreation. ***(No Impact)***

As previously described, projects that include residential or commercial uses could result in a permanent increased demand for parks or other recreational facilities. Projects within a half mile of the Islais Creek Bridge include the Amador Street Sewer Replacement Project and the Pier 94 Grasslands Meadow Enhancement Project do not include residential or commercial uses that could result in population growth in the project vicinity. Therefore, the Islais Creek Bridge project, in combination with other cumulative projects, would not result in cumulative impacts related to recreation because it would not contribute to the demand for recreational resources. Demand for recreational resources would not increase as a result of the proposed project because the proposed project would not induce population growth in the surrounding area. Therefore, the proposed project would not combine with cumulative projects to create a significant cumulative impact on recreational facilities or resources. No impact would result, and no mitigation measures are required.

Topics:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
13. UTILITIES AND SERVICE SYSTEMS. Would the project:					
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment, or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	☐	☐	☒	☐	☐
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐	☐
d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐	☐

Impact UT-1: The proposed project would not require or result in the relocation or construction of new or expanded water, wastewater treatment, or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects. ***(Less than Significant)***

The project area is an urban setting and there are existing Pacific Gas and Electric Company gas and electrical utilities in the project area, including service lines, underground test points, and buried polyvinyl chloride and steel pipes. The proposed project requires the replacement or supplemental installation of approximately 400 feet of the existing sewer under Third Street from Arthur Avenue to Marin Street. This sewer line would be replaced by a larger diameter line or supplemented by a second line; the physical

environmental impacts of this sewer replacement/supplemental installation have been considered as part of this project's environmental analysis. The reconstructed trackway and Third Street would be designed to convey stormwater runoff to the curb and gutters along the Third Street, and then to new stormwater collection drains at the bridge approaches. Currently, stormwater falls through the bridge deck directly into Islais Creek. The stormwater collection drains would be connected to the existing combined sewer/stormwater system by new lines to the nearest manholes, and stormwater would subsequently be transported to and treated at the Southeast Wastewater Treatment Plant.

Other than the sewer line replacement or supplemental installation, the proposed project would not require the construction or relocation of water, wastewater, stormwater, electric, or telecommunication facilities, the construction or relocation of which could cause significant environmental effects. Therefore, the impact would be ***less than significant***, and no mitigation would be required.

Impact UT-2: The proposed project would have sufficient water supplies available to serve the proposed project and reasonably foreseeable future development during normal, dry, and multiple dry years. ***(Less than Significant)***

Potable water is supplied to the project area and San Francisco at large by the SFPUC's regional water system. The new Islais Creek Bridge deck would be precast, meaning that it would be fabricated offsite, brought to the site via barge, and subsequently installed; this means that no onsite potable water would be needed for the concrete/slurry mixing of the bridge deck. Additionally, potable water would not be used for dust control, because San Francisco Public Works Code, Article 21, requires the use of non-potable water for such activities.

Some potable water would be needed during construction for drinking, on-site sanitary needs, and concrete/slurry mixing. This temporary increase in demand for potable water would not require the development of new or expanded water supply facilities. Additionally, the proposed project would not result in the construction of uses that would permanently increase demand for water (e.g., residential or commercial). Therefore, the impact would be ***less than significant***, and no mitigation measures are required.

Impact UT-3: The proposed project would not result in a determination by the wastewater treatment provider that serves or may serve the proposed project that it has inadequate capacity to serve the proposed project's projected demand in addition to the provider's existing commitments. ***(Less than Significant)***

SFPUC manages San Francisco's sewer system, including both wastewater and stormwater runoff. The proposed project would temporarily generate wastewater during construction. During construction, new sources of wastewater discharges to the city's combined wastewater system would be mainly limited to wastewater resulting from sanitary needs of construction workers during the project's 24-month construction period. Sanitary facilities would be serviced by a vendor and sanitary drainage would be hauled offsite for disposal. The resulting effect on the wastewater system capacity would be negligible.

Although wastewater would be temporarily generated during construction, the proposed project would not install permanent restrooms or any other infrastructure that would generate operational wastewater so the new Islais Creek Bridge would not impact SFPUC's wastewater capacity. Therefore, the impact would be ***less than significant***; no mitigation measures are required.

Impact UT-4: The proposed project would not generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure and would comply with federal, state, and local management and reduction statutes and regulations related to solid waste. ***(Less than Significant)***

The proposed project would generate solid waste during the demolition of the existing Islais Creek Bridge and construction of the new bridge. The construction contractor would be required to comply with Section 708 of the San Francisco Environment Code – Construction and Demolition Debris Management. The contractor would be required to follow all associated mandates, including the following:

- Employing best use practices for construction and demolition debris
- Meeting a minimum diversion rate of 75 percent for construction and demolition debris from landfills
- Exploring all reuse and recycling options for materials prior to disposing of them in a landfill
- Developing a Construction and Demolition Debris Management Plan for approval

The 75 percent minimum diversion rate listed above is also tied to the San Francisco Construction and Demolition Debris Recovery Ordinance Construction (Ordinance No. 27-06). Additionally, construction and demolition debris generated during construction would be evaluated for potential reuse and recycling. If no beneficial uses or recycling opportunities are identified, the debris would be disposed of at an appropriate landfill, in accordance with Section 708 of the San Francisco Environment Code. This may be the Recology Hay Road landfill in Solano County, which has a remaining capacity of approximately 30 million cubic yards.[66]

Routine maintenance of the new Islais Creek Bridge would occur once the project's construction is complete, but would not generate a substantial amount of solid waste. Additionally, the proposed project would not lead to a net operational increase of solid waste relative to existing conditions, because the current Islais Creek Bridge also requires maintenance. Therefore, the only solid waste generated by the proposed project would be during construction, and the impact would be ***less than significant***; no mitigation measures are required.

Impact C-UT-1: The proposed project, in combination with cumulative projects, would not result in significant cumulative impacts on utilities and service systems. ***(Less than Significant)***

The geographic scope for potential cumulative utilities and service systems impacts consists of the project area, its immediate vicinity, and the service areas of regional service/utility providers. As stated above, the proposed project would require limited potable and non-potable water, and would generate wastewater and solid waste during construction. The use of water during construction would be approximately 24 months, and would not exceed available water supplies. Likewise, permit requirements and the Construction and Demolition Debris Management Plan would ensure that the proposed project does not generate wastewater or solid waste in excess of existing capacity.

The proposed project does not include residential or commercial units, or other infrastructure that would require operational potable water, or generate operational wastewater or solid waste. Therefore, cumulative impacts related to the proposed project would be ***less than significant***, and no mitigation measures are required.

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[66] California Department of Resources Recycling and Recovery (CalRecycle), Recology Hay Road Site Activity Details, 2023, *https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/1184?siteID=3582,* accessed October 2023.

Topics:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
14. PUBLIC SERVICES. Would the project:					
a) 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 such as fire protection, police protection, schools, parks, or other public facilities?	☐	☐	☒	☐	☐

Impact PS-1: The proposed project would not increase the demand for public services, and the construction of new or physically altered facilities would not be required. ***(Less than Significant)***

The San Francisco Fire and Police Departments provide fire protection, emergency medical services, and police protection in San Francisco. The closest fire station to the project site is Station #25, at 3305 Third Street, directly south of Islais Creek Bridge. The closest police station is San Francisco Police Department's Bayview Station, at 201 Williams Avenue, approximately 1.5 miles from the project site.

As described for Impact PH-1 on page 9 in Section E.3, Population and Housing, increases in demand for public services generally result from a permanent increase in population in a given area. The proposed project would not increase demand for public services such as fire protection, police protection, schools, parks, or other public facilities because the proposed project is a public infrastructure project that does not result in population growth. The proposed project would reconstruct the Islais Creek Bridge in a similar configuration to the existing bridge over a 24-month period and would not result in any permanent increases in population in the area that would increase demand for public services. The proposed project's impacts to public services would be ***less than significant***, and no mitigation is required.

Section 4.C, Transportation and Circulation, in the draft EIR addresses the proposed project's impacts on emergency access during construction.

Impact C-PS-1: The proposed project, combined with cumulative projects, would not result in significant cumulative impacts on police, fire, and school district services such that new or physically altered facilities, the construction of which could cause significant environmental impacts, would be required to maintain acceptable levels of service. ***(Less than Significant)***

The proposed project would demolish and replace the existing Islais Creek Bridge. The proposed project would not permanently result in an increase in residents or employees in the area but would temporarily increase the number of employees in the area during construction, and require the temporary closure of the Islais Creek Bridge during the same period. Cumulative projects, identified in Section 4.A.6, of the draft EIR, are mostly infrastructure or maintenance projects that similarly would not permanently result in an increase in residents or

employees in the area that would require new public services, the construction of which could cause significant environmental impacts. Therefore, the proposed project, in combination with cumulative projects, would have a ***less-than-significant*** cumulative impact on public services, and no mitigation measures are required.

Topics:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
15. BIOLOGICAL RESOURCES. Would the project:					
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 Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐	☐
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 Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐	☐
c) Have a substantial adverse effect on federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	❐	☒	☐	☐
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?	☐	☒	☐	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐	☐
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?	☐	☐	☐	☐	☒

The project site is not in the jurisdiction of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan; therefore, topic 15(f) is not applicable to the proposed project.

After the construction is completed, the Islais Creek Bridge would be replaced with a fixed-span bridge, and operational conditions on the bridge would be restored similar to existing conditions. Therefore, the following impact discussion focuses solely on impacts related to construction of the proposed project.

This section describes the existing terrestrial and aquatic biological resources in the vicinity of the proposed project. Information used in preparation of this section is from a biological technical memorandum prepared by AECOM for the proposed project.[67]

The project location in southeastern San Francisco is an urban setting with a mix of industrial and commercial areas. The Islais Creek Bridge crosses the Islais Creek channel approximately 0.6 mile upstream from San Francisco bay. Historically, Islais Creek flowed approximately 3.5 miles from San Francisco's Twin Peaks to San Francisco Bay.[68] Previously fed by numerous tributaries, springs, and small creeks, the channel has largely been culverted and flows underground through pipes beneath the city streets. The majority of the watershed is now diverted to the southeast water treatment plant, so the channel no longer functions as a creek due to limited freshwater discharges into the channel. The project footprint consists of paved road surrounded by landscaped and graded roadsides, and portions of the channel, which is a heavily developed and dredged waterway. These areas lack high-quality or natural habitat for terrestrial wildlife.

A list of special-status species in the project area was prepared by gathering data from species occurrences reported in the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB),[69] the United States Fish and Wildlife Information for Planning and Conservation database,[70] and using literature and species information made available by National Marine Fisheries Service (NMFS), such as the NMFS Species list tool.[71] Table 12 lists the special-status wildlife species determined to have potential to occur in the project area. These species and the potential for project impacts are further described below. There are no special-status plant species with potential to occur in the project area.

Table 12 Special-Status Wildlife Species with Potential to Occur in the Islais Creek Bridge Project Area

Animals					
Common Name	**Scientific Name**	**Federal Status**	**State Status**	**Potential to Occur**	**FESA Effects Determination**
Pacific herring	*Clupea pallasii*	—	State-Managed Fishery	low	NA
Green sturgeon Southern DPS	*Acipenser medirostris*	FT and DCH	—	low	NLAA
Longfin smelt	*Spirinchus thaleichthys*	FP	ST	low	NA
Steelhead – Central California Coast DPS	*Oncorhynchus mykiss*	FT and DCH	—	low	NLAA
Chinook salmon – Central Valley fall/late fall ESU	*Oncorhynchus tshawytscha*	—	SSC	low	NA
White sturgeon	*Acipencer transmontanus*	—	SSC	low	NA
California sea lion	*Zalophus californianus*	MMPA	—	low	NA

[67] AECOM Technical Services Inc., Islais Creek Bridge Project Biological Technical Results Memorandum, October 2023.
[68] WRECO. Location Hydraulic Study and Sea Level Rise Report, July 2016.
[69] CNDDB database queried on October 8, 2022.
[70] IPAC Species list generated on March 30, 2023.
[71] NMFS Species list generated on March 29, 2023.

Animals					
Common Name	**Scientific Name**	**Federal Status**	**State Status**	**Potential to Occur**	**FESA Effects Determination**
Pacific harbor seal	*Phoca vitulina*	MMPA	—	low	NA
California brown pelican	*Pelecanus occidentalis californicus*	MBTA, FD	FP	moderate	NA
Double-crested cormorant	*Phalacrocorax auritus*	MBTA	WL	high	NA
American peregrine falcon	*Falco peregrinus anatum*	MBTA	FP	low	NA
Townsend big-eared bat	*Corynorhinus townsendii*	—	SCT, SSC	low	NA
Pallid bat	*Antrozous pallidus*	—-	SSC	low	NA

Notes:

DPS = distinct population segment
FESA = federal Endangered Species Act

FESA Effects Determination

NA = Not Applicable
NE = No Effect

NLAA = Not Likely to Adversely Affect

Federal Status Designations

MBTA = Species protected by the Migratory Bird Treaty Act
DCH = Designated Critical Habitat present in project area
FT = Federal threatened
FD = Federal delisted
FC = Federal candidate
MMPA = species protected by the Marine Mammal Protection Act

State of California Status Designations

FP = Fully protected under California Fish and Game Code
SCT = State candidate threatened
SE = State endangered
SSC = State species of concern
ST = State threatened
WL = Species of Special Concern Watch List

PACIFIC HERRING

The San Francisco Bay Pacific herring (*Clupea pallasii*) population is a CDFW-managed fishery[72] and the species is protected in San Francisco Bay under the Marine Life Management Act.[73] They are also considered an important food source for a variety of birds, mammals, fishes, and invertebrates. This species is known to spawn along the San Francisco waterfront and attach its egg masses to eelgrass, seaweed, and hard substrates such as riprap, pilings, breakwater rubble, and other "hard surfaces." Spawning usually takes place between October and March with a peak between December and February. After hatching, juvenile herring typically congregate in San Francisco Bay during the summer and move into deeper waters in the fall. CDFW reported herring spawning within Islais Creek channel during the 2014-2015 and 2015-2016 spawning seasons.[74] Islais Creek channel has been identified as a herring spawning location; therefore, the species' potential to occur in

[72] The California Department of Fish and Wildlife has managed the commercial Pacific Herring sac-roe fishery in California since the first opening in 1972. This species is considered a managed species by CDFW. *https://www.wildlife.ca.gov/Fishing/Commercial/Herring,* accessed July 2023.

[73] The Marine Life Management Act provides guidance, in the form of fisheries management plans, for the sustainable management of California's fisheries.

[74] CDFW, Summary of the 2014- 2015 and 2015-2016 Pacific Herring Spawning Population and Commercial Fisheries in San Francisco Bay, *https://www.wildlife.ca.gov/Fishing/Commercial/Herring/Season-Summaries*, accessed February 2019.

the project area is high between October and March. However, the likelihood that they would be present in the project area is low outside the spawning season.

GREEN STURGEON

The federally threatened, southern distinct population segment of North American green sturgeon (*Acipenser medirostris*) has the potential to be present throughout all marine portions of the project area at any time of the year, however; their preferred migration routes suggest a low likelihood for presence. The upper Sacramento River has been identified as the only known spawning habitat for green sturgeon in the southern distinct population segment.[75] According a study from 2007, green sturgeon adults begin moving upstream through San Francisco Bay during the winter.[76] Tagged adults and subadults within the San Francisco Bay-Delta have been observed occupying waters at shallow depths of less than 33 feet, either swimming near the surface or foraging along the bottom. Green sturgeon migrating between the Pacific Ocean and spawning habitat in the Sacramento River watershed rarely travel south of the San Francisco–Oakland Bay Bridge. Typically, adults take a more direct route from San Pablo Bay, passing through Raccoon Strait adjacent to Angel Island (approximately 10 miles north of the project area), and out to the Pacific Ocean.[77] Therefore, potential for green sturgeon to be present in the project area is considered to be low.

LONGFIN SMELT

Longfin smelt (*Spirinchus thaleichthys*), which is listed as state threatened and federal candidate species, is primarily present in central San Francisco Bay during the late summer months before migrating upstream in fall and winter. Longfin smelt adults seasonally occur within south San Francisco Bay but are generally more concentrated in Suisun, San Pablo, and north San Francisco bays.[78] Although longfin smelt distribution within the estuary and within the Islais Creek channel is driven by fluctuations in salinity and they are less likely to occur within the project area outside of late summer, their exact distribution pattern varies from year to year. Therefore, longfin smelt have a moderate potential to be present in bay habitat adjacent to the site and in Islais Creek channel at any time of the year. Longfin smelt prefer deep, cool waters, and the manipulated hydrology of the channel does not provide spawning habitat. There is low potential for longfin smelt to occur in the project area.

STEELHEAD

The California Central Valley and Central California Coast steelhead (*Oncorhynchus mykiss*) are distinct population segments,[79] both of which are federally threatened, and migrate through San Francisco Bay during the winter and spring months. Although the potential for steelhead to occur in San Francisco Bay is highly variable throughout the year, from June through November (when in-water work would occur for the proposed project), both the California Central Valley and Central California Coast steelhead have low potential to occur in the vicinity of the project site. Central Valley steelhead rarely occur south of the San Francisco Bay Bridge and are not expected to occur in the project area during any time of year. Central Coast steelhead are known to occur within multiple San Francisco Bay streams; however, they are unlikely to occur within the project area at any time of year because Islais Creek channel does not provide suitable habitat for spawning. The nearest watershed that supports Central Coast steelhead is the San Mateo Creek watershed,

[75] Moyle, P.B, Inland Fishes of California, University of California Press, Berkeley and Los Angeles, California, 2002.
[76] Kelly, J.T, A.P. Klimley, and C.E. Crocker, Movements of green sturgeon, *Acipenser medirostris*, in the San Francisco Bay Estuary, 2007.
[77] Kelly, J.T, A.P. Klimley, and C.E. Crocker, Movements of green sturgeon, *Acipenser medirostris*, in the San Francisco Bay Estuary, 2007.
[78] Merz, J.E., P.S. Bergman, J.F. Melgo, and S. Hamilton, Longfin Smelt: Spatial Dynamics and Ontogeny in the San Francisco Estuary, California, 2013.
[79] Steelhead are divided into distinct population segments by management agencies, based on their geographic range and life history.

which empties into San Francisco Bay roughly 10 miles south of the project area.[80] During migration between the Pacific Ocean and the San Mateo Creek watershed within the winter and spring months, steelhead travel through the open waters of San Francisco Bay adjacent to Islais Creek channel. The project site is not situated along a migratory pathway for this species.

The Islais Creek channel is a heavily developed, dredged channel with varying mud, cobble, riprap, and bulkhead bottom. There is no suitable steelhead spawning habitat in the channel or its tributaries. Although the estuarine waters adjacent to the project area are important foraging and rearing habitat, habitat conditions in the channel are marginally suitable due to heavy development and the presence of contaminated sediment.

CHINOOK SALMON

Although the potential for Chinook salmon (*Oncorhynchus tshawytscha*) to occur in San Francisco Bay is variable depending on the season, this species has low potential to occur in the vicinity of the project site from June through November when in-water work would occur for the proposed project. The Chinook salmon that inhabit San Francisco Bay include three distinct populations: Sacramento River winter-run, Central Valley spring-run, and Central Valley fall/late fall-run.[81]

Central Valley fall/late fall-run Chinook salmon, which is a California species of special concern, is the only population of chinook that spawns in San Francisco Bay tributary streams. The Sacramento River winter-run and Central Valley spring-run Chinook salmon have no potential to occur at the project site and thus would not be affected by the project.

The project site is west of the San Francisco Bay migratory route between the Pacific Ocean and spawning habitat in tributaries of the south San Francisco Bay, and individuals could potentially forage, rest, or pass through the project area. However, Central Valley fall/late fall-run individuals have rarely been documented within the project area or the immediate vicinity. Any occurrence would only be temporary as the surrounding channel and adjacent bay habitat is primarily used only for migratory purposes.[82]

WHITE STURGEON

White sturgeon (*Acipenser transmontanus*) are designated as a state species of concern by CDFW. White sturgeon are the largest bony fish found in North America, and have a very long life span. Spawning adults migrate from the San Francisco Bay estuary to the Sacramento River, and possibly the San Joaquin River and Feather River, to reproduce. Like green sturgeon, white sturgeon are benthic feeders, consuming a variety of crustaceans, mollusks, and small fish. This species is relatively common in San Pablo and Suisun Bays, but rare in the central and southern portions of San Francisco Bay,[83] including the Islais Creek channel.

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[80] Leidy, R.A., G.S. Becker, B.N. Harvey, Historical distribution and current status of steelhead/rainbow trout *(Oncorhynchus mykiss*) in streams of the San Francisco Estuary, California, 2005.

[81] These populations are referred to as Evolutionary Significant Units by management agencies.

[82] Interagency Ecological Program for the San Francisco Bay Estuary; San Francisco Bay Study, 2010-2014, 2014. Unpublished Raw Mid-water and Otter Trawl Data.

[83] Moyle, P.B, Inland Fishes of California, University of California Press, Berkeley and Los Angeles, CA. 2002.

MARINE MAMMALS

All marine mammals with potential to occur in San Francisco Bay are protected under the Marine Mammal Protection Act. In general, the presence of marine mammals in San Francisco Bay is related to water depths and the distribution and presence of prey species and foraging habitat. Pacific harbor seals (*Phoca vitulina richardsi*) and California sea lions (*Zalophus californianus*) are found year-round in the bay, use shallow margins of the bay, and are the only marine mammal species likely to occasionally occur in the project area. Other marine mammal present in San Francisco Bay include the Pacific harbor porpoise (*Phocoena phocoena*), gray whale (*Eschrichtius robustus*), the humpback whale (*Megaptera novaeangliae*), the bottlenose dolphin (*Tursiops truncates*), and the northern elephant seal (*Mirounga angustirostris*),[84] but these species are not expected to occur in Islais Creek.

Pacific harbor seals and California sea lions both use various intertidal substrates that are exposed at low to medium tide levels for resting and breeding. California sea lions are noted for using anthropogenic structures such as floating docks, piers, and buoys to haul out of the water to rest; however, there are no known haul-out locations in the project area. California sea lions and harbor seals have been observed in the Islais Creek channel, however, there are no documented sightings of Pacific harbor seals or California sea lions using Islais Landing as a haul-out site. Due to the lack of known haul-out locations in the project area, the presence of these species in the project area is likely to be confined to a few individuals temporarily present in the creek and not the large numbers seen elsewhere in San Francisco Bay.

CALIFORNIA BROWN PELICAN

California brown pelican (*Pelecanus occidentalis californicus*) are federally delisted, and their nesting colony and communal roosts are State Fully Protected. Nesting colonies are found exclusively along the southern California coast, from the Channel Islands south to the Gulf of California. California brown pelicans are communal nesters, with breeding occurring between March and August. They feed primarily on sardines, mackerels, and anchovies, and while foraging pelicans will rest on water, rocks, jetties, and man-made structures. There are 10 known California brown pelican roosting sites in the Bay Area, all along the outer coast of San Francisco County, not in the bay. There are no CNDDB records within 5 miles of the project area. The project area provides foraging and day-loafing habitat for pelicans on the open water, rocks, the control tower, the wooden fenders, and the piles in the channel; but pelicans are not expected to roost or breed in the project area. Pelicans were not observed during the site visit.

DOUBLE-CRESTED CORMORANT

Double-crested cormorant (*Phalacrocorax auritus*) nesting colonies are considered a resource of conservation and are on the CDFW watch list. Cormorants are year-round residents along the coast of California, and can occur in inland fresh, brackish, and saline waters. Cormorants are communal nesters, and breed from April through August. The species feeds primarily on fish but will also eat crustaceans and amphibians. In the bay, herring are an important food source for cormorants. The project area provides foraging and loafing habitat for cormorants in the open water, rocks, control tower, wooden fenders, and piles in the channel. Double-crested cormorants are not expected to roost or breed in the project area. There are established nesting colonies in the bay on the San Francisco–Oakland Bay Bridge, Richmond–San Rafael Bridge, San Mateo Bridge, and Yerba Buena and Alcatraz islands. The nesting colony closest to the project

[84] Caltrans, San Francisco-Oakland Bay Bridge East Span Seismic Safety Project, Pier E3 Demonstration Project Biological Monitoring Programs, October 2015.

area is on the San Francisco-Oakland Bay Bridge. Foraging and loafing habitat exists in and adjacent to the project area in the channel, and there is moderate potential for this species to occur in the project area.

AMERICAN PEREGRINE FALCON

American peregrine falcon (*Falco peregrinus anatum*) is a California endangered species. Peregrine falcons generally feed and nest near water. This species nests on protected ledges of high cliffs, banks, dunes, and mounds in woodland, forest, and coastal habitats. However, pairs are also known to nest on human-made structures such as bridges and buildings. Breeding occurs in open landscapes with cliffs (or skyscrapers) for nest sites. Peregrine falcons forage over most wetland habitats that harbor many bird species that falcons use as prey. Peregrines prey on bird species such as ducks, shorebirds, and doves. During migration and in winter, peregrine falcons can be found in nearly any open habitat, but with a greater likelihood along barrier islands, mudflats, coastlines, lake edges, and mountain chains.

BATS

The pallid bat (*Antrozous pallidus*), a state species of special concern, is found at low elevations throughout California. This nocturnal species emerges approximately 30 to 60 minutes after sunset to hunt for food such as insects, spiders, and small mammals. Typically, pallid bats forage within 1 to 3 miles of their day roost. Day roosts are often found in caves, crevices, and buildings, and other tall structures that have access to open foraging areas. Night roosts can be found on natural and man-made structures, such as porches, which are in open areas. Pallid bats mate during late October through February. During early April, maternity colonies consisting of up to 100 individuals. During this time, males may roost separately or in the nursery colony. There are no CNDDB records of the pallid bat within 5 miles of the project area.

The Townsend's big-eared bat (*Corynorhinus townsendii*) can be found throughout California in varying elevational ranges. The Townsend's big-eared bat is a nocturnal species that emerges at night to hunt small insects, such as moths and beetles. They are typically found in a mosaic of habitats that contain trees for cover, and feed along habitat edges. This species is not known to move over far distances to hibernation sites. Day roosts are often found in caves, crevices, buildings, and other tall structures that have access to open foraging areas. Night roosts, or hibernation sites, tend to be cooler; natal roosts are warmer. There is one CNDDB record of Townsend's big-eared bat from 2005 within 5 miles of the project site, near Twin Peaks.

The Western Bat Working Group's Regional Priority Matrix shows the pallid bat and Townsend's big-eared bat as "high priority" species.[85] The Western Bat Working Group defines "high priority" bat species as species that are imperiled or in high risk of imperilment, and should be considered the highest priority for funding, planning, and conservation actions. "Medium priority" bat species are species of concern that warrant further evaluation, research, and conservation actions of both the species and potential threats.

MIGRATORY BIRDS

All migratory birds in the project area are protected by the Migratory Bird Treaty Act (MBTA). Many species of migratory birds may inhabit the project. Migratory birds that are unlikely to nest but are likely to forage in the project area include migratory shorebirds and waterfowl. Hundreds of species of migratory shorebirds and waterfowl have been documented to occur in the Bay Area regularly. Several migratory shorebirds and waterfowl that breed in the project area are considered nesting birds and are covered under the MBTA.

[85] Western Bat Working Group, Regional Bat Species Priority matrix, 2007, *https://wbwg.org/matrices/species-matrix/*, accessed November 2014.

During the site survey, several migratory birds were observed in the project area, including multiple gull species, American coot (*Fulica americana*), great blue heron (*Ardea herodias*), and horned grebe (*Podiceps auritus*). A large variety of migratory bird species can potentially nest anywhere in the project area except for paved road surfaces and the active channel of Islais Creek. Several species, including house finch (*Haemorhous mexicanus*), bushtits (*Psaltriparus minimus*), hummingbirds (*Trochilidae sp.*), and black phoebe (*Sayornis nigricans*) can potentially nest on the bridge structure, the landscape trees, and the adjacent buildings. Migratory birds may also forage over open water and in landscape/ruderal habitat.

Impact BI-1: Project construction could have a substantial adverse effect, either directly or through habitat modifications, on 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 Wildlife or U.S. Fish and Wildlife Service. ***(Less than Significant with Mitigation)***

MIGRATORY BIRDS

There would be no removal of trees or other vegetation, or alteration of terrestrial areas associated with the proposed project. However, construction of the proposed project could disturb or destroy nesting birds that are protected under the MBTA. Nesting birds could be temporarily displaced because of habitat alteration or noise disturbance from construction equipment. If any migratory birds are nesting in the remaining trees in the project area or under the existing bridge structure during project construction, direct mortality of eggs or chicks could occur. However, implementation of Public Works standard construction measure #7 –Biological Resources would avoid impacts to nesting birds because this standard construction measure includes implementation of preconstruction surveys for biological resources. Prior to project commencement, a qualified biologist will carry out a survey of the project site to note the presence of general biological resources and to identify whether habitat for special-status species and/or migratory birds is present. If necessary, measures will be implemented to protect biological resources, such as installing wildlife exclusion fencing, establishing work buffer zones, installing bird deterrents, monitoring by a qualified biologist, and other such measures. With implementation of public works standard construction measures, this impact would be less than significant with respect to nesting birds.

SPECIAL-STATUS FISH SPECIES

Potential impacts to green sturgeon, longfin smelt, steelhead, Chinook salmon, and white sturgeon are limited to temporary habitat disturbance from construction. In-water construction activities have the greatest potential to impact these species due to the use of construction barges to serve as work platforms during removal of the existing bridge and the installation of the new bridge span. The removal of existing fender piles may temporarily increase turbidity but would have the long-term benefit of removing a potential source of contaminants from bay waters. During in-water construction activities, the Public Works standard construction measures—such as soil stabilization and sediment control BMPs and waste management and materials pollution control BMPs to prevent sediment and other pollutants from entering the bay during project construction—would be implemented to protect water quality and to maintain water quality standards.

However, even with the implementation of Public Works standard construction measures, in-water work could result in a significant impact to special-status fish species habitat during project construction. With the implementation of **Mitigation Measure M-BI-1: Special-Status Species and Jurisdictional Waters Impact Avoidance**, **Mitigation Measure M-BI-2: Fish and Marine Mammal Protection during Pile Removal**, and **Mitigation Measure M-BI-4: Worker Environmental Awareness Program Training,** significant impacts to special-status fish species, green sturgeon, longfin smelt, steelhead, Chinook salmon, and white sturgeon would be reduced to ***less-than-significant*** levels during project construction.

PACIFIC HERRING

Spawning adult herring are vulnerable to water quality impacts and habitat loss. Herring spawn are also especially vulnerable to impacts from turbidity. During in-water construction activities, Public Works standard construction measures and BMPs described below would be implemented to protect water quality and to maintain water quality standards.

However, even with the implementation of Public Works standard construction measures, in water work could result in a significant impact to Pacific herring during project construction. With the implementation of **Mitigation Measure M-BI-1: Special-Status Species and Jurisdictional Waters Impact Avoidance**, **Mitigation Measure M-BI-4: Worker Environmental Awareness Program Training,** and **Mitigation Measure M-BI-5: Protection of Herring Spawn,** significant impacts to Pacific herring would be reduced to less-than-significant levels during project construction.

MARINE MAMMALS

There is low potential for marine mammal species to occur in the project area during project construction activities. However, these species are sensitive to water quality impacts, habitat loss, and hydroacoustic impacts. In-water construction activities have the potential to cause short-term, temporary behavioral disruptions to marine mammals that may be foraging or hauled out[86] in nearby waters; this would be a significant impact to marine mammals. With the implementation of **Mitigation Measure M-BI-1: Special-Status Species and Jurisdictional Waters Impact Avoidance**, **Mitigation Measure M-BI-2: Fish and Marine Mammal Protection during Pile Removal**, and **Mitigation Measure M-BI-4: Worker Environmental Awareness Program Training**, impacts to marine mammals during project construction would be reduced to a less-than-significant level.

SPECIAL-STATUS BIRD SPECIES

California brown pelican and double-crested cormorant are vulnerable to temporary disturbance from the presence of project-related construction activity and potential impacts to air and water quality. Foraging, loafing, and roosting birds can avoid construction activities, and sufficient habitat is available upstream and downstream of the project site and in the waters of the bay for them to relocate. However, construction activities could result in a significant impact to California brown pelican and double-crested cormorant habitat from temporary construction disturbances. The proposed project includes measures to protect air and water quality (see Sections E.8, Air Quality, and E.17, Hydrology and Water Quality, respectively), debris containment systems (see **Mitigation Measure M-BI-1: Special-Status Species and Jurisdictional Waters Impact Avoidance**), and turbidity minimization (see the Public Works standard construction measures and BMPs listed below). Therefore, impacts to California brown pelican and double-crested cormorant would ***less than significant with mitigation***.

Although there is foraging potential for the American peregrine falcon in the project area, tall structures that would be suitable nest sites are not present. In addition, there are no CNDDB records for the American peregrine falcon in the project area. Therefore, the project would have ***no impact*** on peregrine falcon.

BATS

Implementation of the proposed project could result in the disturbance of suitable roosting and nesting sites for special-status and high-priority bat species, specifically on the underside of bridge. Disruption of suitable roosting and nesting sites would potentially have a ***significant*** impact on bats. Although the proposed

[86] Hauling-out is a behavior associated with seals and sea lions temporarily leaving the water for shore for reasons such as reproduction and rest.

project would result in the partial demolition of the control tower and replacement of the bridge, significant impacts to bats would be ***less than significant*** with the implementation of **Mitigation Measure M-BI-3: Avoidance and Minimization Measures for Bats**, discussed below.

PUBLIC WORKS STANDARD CONSTRUCTION MEASURES AND BEST MANAGEMENT PRACTICES

Public Works has standard construction measures and BMPs that will be implemented during project construction to avoid and/or minimize potential impacts to special-status species and habitats to the greatest extent practicable (see Appendix E).[87] Such practices include soil stabilization and sediment control BMPs; waste management and materials pollution control BMPs to prevent sediment and other pollutants from entering the bay during project construction; and Occupational Safety and Health Administration (OSHA)-required training and protective equipment to further prevent water and soil contamination from hazardous materials that have been identified in the project area.

These standard construction measures (Public Works standard construction measure #7 –Biological Resources) also include implementation of preconstruction surveys for biological resources. Prior to project commencement, a qualified biologist will carry out a survey of the project site to note the presence of general biological resources and to identify whether habitat for special-status species and/or migratory birds is present. If necessary, measures will be implemented to protect biological resources, such as installing wildlife exclusion fencing, establishing work buffer zones, installing bird deterrents, monitoring by a qualified biologist and other such measures.

Additional Public Works standard construction measures (Public Works standard construction measure #3 – water quality) includes the implementation of erosion and sedimentation controls, such as fiber rolls and/or gravel bags around storm drain inlets, installation of silt fences, and other such measures sufficient-to prevent discharges of sediment and other pollutants to storm drains and all surface waterways. As required based on project location and size, a Stormwater Control Plan (in most areas of San Francisco) or a Stormwater Pollution Prevention Plan (SWPPP) (in certain areas of San Francisco) will be prepared.

In addition, **Mitigation Measure M-BI-1: Special-Status Species and Jurisdictional Waters Impact Avoidance** will be implemented to prevent construction material or debris from entering the creek channel, and to protect special-status species and waters of the U.S. These mitigation measures include preconstruction surveys, biological monitoring, buffers around environmentally sensitive areas, and worker trainings on sensitive resources, as follows:

MITIGATION MEASURES

Mitigation Measure M-BI-1: Special-Status Species and Jurisdictional Waters Impact Avoidance

Construction activities shall avoid or minimize adverse effects to special-status species and their habitats, and on jurisdictional waters to the full extent feasible. Specifically:

- A materials management disposal plan shall be prepared by the selected contractor to prevent any debris from falling into the bay during construction to the maximum extent practicable. This plan shall be submitted to the Regional Water Quality Control Board (RWQCB) for review and

[87] Public Works Standard Construction Measures for Public Works Projects, June 26, 2017, Planning Department Case No. 2016-012909ENV.

approval. The measures identified in this plan shall be based on the best available technology, and shall include, but not be limited to, the following measures:

- During construction, the barges performing the work shall be moored in a position to capture and contain the debris generated during any substructure or in-water work. In the event that debris does reach the bay, personnel in workboats in the work area shall immediately retrieve the debris for proper handling and disposal. All debris shall be disposed of at an authorized upland disposal site.

- Debris containment systems shall be implemented for work over water to prevent airborne or falling debris from entering the waters below. An encapsulation containment system shall be used to contain debris for rust, lead paint, and asbestos.

- Measures shall be taken to ensure that fresh cement or concrete shall not be allowed to enter the bay. Construction materials, stockpiles, debris, and all grindings and asphaltic-concrete waste shall be stored in previously disturbed areas absent of habitat and at a minimum of 150 feet from any aquatic habitat, culvert, or drainage feature.

- All equipment and vehicles shall be fueled only in designated areas away from catchbasins and at least 150 feet from the shoreline, fitted with functional, appropriate leak-containment BMPs, including drip pans or other containment beneath each connection point to capture all spills and drips. For small equipment on barges, secondary containment shall also be provided during fueling.

- All hazardous material shall be stored upland in storage trailers and/or shipping containers designed to provide adequate containment. Short-term laydown of hazardous materials for immediate use shall be permitted with the same anti-spill precautions.

Mitigation Measure M-BI-2: Fish and Marine Mammal Protection during Pile Removal

Pile extraction shall be restricted to a work window of June 1 to November 30. Existing fenders and piling would be cut off just below the mudline and removed from the site. When piles or other debris from the existing fender system are removed from the channel, they shall be promptly removed from the water and placed on a barge. The barge shall be configured to contain all sediment that may be adhering to the removed piles to ensure that sediment does not fall into the water.

Mitigation Measure M-BI-3: Avoidance and Minimization Measures for Bats

A qualified biologist (as defined by the CDFW[88]) who is experienced with bat surveying techniques (including auditory sampling methods), behavior, roosting habitat, and identification of local bat species shall be consulted prior to demolition activities or tree work to conduct a preconstruction habitat assessment of the project area to characterize potential bat habitat and identify potentially active roost sites. No further action is required should the preconstruction habitat assessment not identify bat habitat or signs of potentially active bat roosts in the project area (e.g., guano, urine

[88] CDFW defines credentials of a *qualified biologist* within permits or authorizations issued for a project. Typical qualifications include a minimum of four years of academic training leading to a degree and a minimum of 2 years of experience conducting surveys for each species that may be present in the project area.

staining, or dead bats). The following measures shall be implemented should potential roosting habitat or potentially active bat roosts be identified during the habitat assessment:

1. In areas identified as potential roosting habitat during the habitat assessment, initial structure demolition and any tree work (trimming or removal) shall occur when bats are active, approximately between the periods of March 1 to April 15 and August 15 to October 15, to the extent feasible. These dates avoid the bat maternity roosting season and period of winter torpor.[89]

2. Depending on temporal guidance, as defined below, the qualified biologist shall conduct preconstruction surveys of potential bat roost sites identified during the initial habitat assessment no more than 14 days prior to demolition activities, tree trimming, or tree removal.

3. If active bat roosts or evidence of roosting is identified during preconstruction surveys for demolition, the qualified biologist shall determine, if possible, the type of roost and species. A no-disturbance buffer shall be established around roost sites until the qualified biologist determines that they are no longer active. The size of the no-disturbance buffer would be determined by the qualified biologist and would depend on the species present, roost type, existing screening around the roost site (such as dense vegetation or a building), as well as the type of construction activity that would occur around the roost site.

4. If special-status bat species or maternity or hibernation roosts are detected during these surveys, appropriate species- and roost-specific avoidance and protection measures shall be developed by the qualified biologist in coordination with CDFW. Such measures may include postponing the demolition of structures, establishing exclusionary work buffers while the roost is active (e.g., 100-foot no-disturbance buffer), or other compensatory mitigation.

5. The qualified biologist shall be present during demolition if potential bat roosting habitat or active bat roosts are present. Structures with active roosts shall be disturbed only under clear weather conditions when precipitation is not forecast for three days and when daytime temperatures are at least 50 degrees Fahrenheit.

6. Demolition of structures containing or suspected to contain bat roosting habitat or active bat roosts shall be performed under the supervision of the qualified biologist. When appropriate, structures shall be partially dismantled to significantly change the roost conditions, causing bats to abandon and not return to the roost, likely in the evening and after bats have emerged from the roost to forage. Under no circumstances shall active maternity roosts be disturbed until the roost disbands at the completion of the maternity roosting season or otherwise becomes inactive, as determined by the qualified biologist.

Mitigation Measure M-BI-4: Worker Environmental Awareness Program Training

Prior to the start of work, project-specific Worker Environmental Awareness Program (WEAP) training shall be developed specific to aquatic resources and onsite trees and implemented by a qualified biologist and attended by all project personnel performing demolition or ground-disturbing work where landscaping/street trees, natural vegetation, or shoreline habitats are present. The WEAP shall include environmental permit and CEQA mitigation requirements related to biological resources for all

[89] *Torpor* refers to a state of decreased physiological activity with reduced body temperature and metabolic rate.

stages of the project and shall be repeated as necessary to ensure that all personnel on the construction crew receive the training (i.e., when new personnel are added to the crew). The WEAP training shall generally include, but not be limited to, education about the following:

- applicable local, state and federal laws, environmental regulations, project permit conditions, and penalties for noncompliance;
- special-status animal species with the potential to be encountered on or in the vicinity of the project area during construction;
- avoidance measures and a protocol for encountering special-status species, including a communication chain;
- pre-construction surveys and biological monitoring requirements associated with each phase of work and at specific locations in the project area (e.g., shoreline work) because biological resources and protection measures will vary depending on where work is occurring in the site, time of year, and construction activity;
- known sensitive resource areas in the project vicinity that are to be avoided and/or protected, as well as approved project work areas, access roads, and staging areas; and
- BMPs (e.g., straw wattles or spill kits) and their location around the project area for erosion control and species exclusion, in addition to general housekeeping requirements.

Mitigation Measure M-BI-5: Protection of Herring Spawn

To ensure the protection of herring spawn, biological monitoring to identify spawn events shall occur during the herring spawning season, from December 1 through February 28. If herring spawning is observed, in-water work shall be suspended within 500 meters of spawning activity, and the work shall not resume until spawning has ended and eggs have hatched (up to 21 days).

Impact BI-2: The proposed project could have a substantial adverse effect on riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service. ***(Less than Significant with Mitigation)***

The subtidal and intertidal areas in the project area provide essential fish habitat (EFH) as designated in three Fisheries Management Plans (FMPs): Pacific Salmon FMP, Pacific Groundfish FMP, and Coastal Pelagic FMP. Additionally, San Francisco Bay is designated as an Estuarine Habitat Area of Particular Concern (HAPC) in those FMPs. HAPCs are described in the regulations as subsets of EFH that are rare, particularly susceptible to human-induced degradation, especially ecologically important, or in an environmentally stressed area.

Section 305(b)(2) of the Fishery Conservation and Management Act of 1976 requires federal agencies to consult with NMFS on activities that may adversely affect EFH for federally managed fish species. These species include commercial fishes with established FMPs, as managed by regional fisheries management councils. EFH includes those waters and substrate necessary for fish spawning, breeding, feeding, or growth to maturity. In the definition of EFH: “waters” include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; “substrate” includes sediment, hard bottom, structures underlying the waters, and associated biological communities; “necessary” means the habitat required to support a sustainable fishery, and the

managed species contribution to a healthy ecosystem; and "spawning, breeding, feeding, or growth to maturity" covers a species' full life-cycle.

No other special habitats such as sensitive or critical aquatic habitat, limestone outcrops, riparian forests, oak woodlands, or serpentine soils were observed in the project area.

Potential temporary disturbance to EFH could include changes to local water quality due to turbidity; the lack of access to habitat during removal of the existing bridge fenders; and disruption due to the presence of barges and divers. The removal of the existing creosote-treated wood piles from the project area would improve EFH conditions by removing a potential source of contaminants from the project area. Barges used for construction access and support in the channel would remain in aquatic habitat for the entire duration of construction (24 months). These barges may rest on the channel bottom during low tide, and would cause shading, which would result in a ***significant*** impact due to temporary habitat disturbances or changes in use by fish. However, these significant impacts would be less than significant with implementation of Public Work's standard construction measures and mitigation measures described under **Impact BI-1**, including **Mitigation Measure M-BI-1: Special-Status Species and Jurisdictional Waters Impact Avoidance**, **Mitigation Measure M-BI-2: Fish and Marine Mammal Protection during Pile Removal**, **Mitigation Measure M-BI-4: Worker Environmental Awareness Program Training**, and **Mitigation Measure M-BI-5: Protection of Herring Spawn**.

Impact BI-3: The proposed project would not have a substantial adverse effect on federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal) through direct removal, filling, hydrological interruption, or other means. ***(Less than Significant)***

A wetland delineation was conducted by AECOM in accordance with the guidelines defined in the United States Army Corps of Engineers (USACE) Wetlands Delineation Manual, the USACE Arid West Manual, relevant regulatory guidance letters, and USACE district-specific minimum reporting requirements. Surveys were conducted on November 25, 2016. A total of 14.55 acres of potential waters of the U.S. was identified in the project area, of which 0.28 acre is potentially jurisdictional wetlands, and 14.27 acres are potentially jurisdictional other waters of the U.S. There is no submerged aquatic vegetation in the project area.

During construction, up to 2.3 acres of estuarine habitat would be temporarily impacted due to the presence of work barges being present onsite. Up to 1.26 acres of developed area (sidewalk, roadway, and other areas adjacent to the bridge) may also be used for staging and access during construction. Other potential staging areas, shown in figure 2.G-1 in Section 2.G.2 of the draft EIR, have been identified and would occur on gravel lots or already paved areas.

Due to the removal of the bridge's existing fender system (see Draft EIR Figure 2.F-4), the proposed project would result in a net decrease with respect to fill of estuarine habitat. Areas of the channel would be impacted by construction barges that would be present for the majority of the project's construction period, and would be considered a temporary fill in accordance with the Clean Water Act Regulations.[90] However, there would be no anticipated loss of habitat due to this temporary condition (during project construction), and there is no submerged vegetation in the project footprint that could be impacted. On completion of the proposed project's construction, all temporarily affected areas would be restored to approximately the original site conditions. The

[90] 33 CFR Part 323, Permits for Discharges of Dredged or Fill Material Into Waters of the United States.

proposed project would result in a net decrease in permanent fill of estuarine habitat through the removal of the old creosote-treated timber fendering that currently exists in the channel. Impacts on federally protected wetlands would be ***less than significant***, and no mitigation measures are required.

Impact BI-4: The proposed project could 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. ***(Less than Significant with Mitigation)***

As previously stated, land uses surrounding the Islais Creek Bridge are largely commercial and industrial; the area is highly developed, with little natural habitat for wildlife. The project area consists mostly of urban habitat, which may support bird and mammal species that are generally tolerant of disturbance created by human activities. Common, human-tolerant native species of migratory birds include American crow (*Corvus brachyrhynchos*) and western gull (*Larus occidentalis*). Common, human-tolerant mammals include raccoon (*Procyon lotor*), Virginia possum (*Didelphis virginiana*), fox squirrel (*Sciurus niger*), and other rodents. Many other species of migratory birds and raptors may occur in the project area during their breeding seasons. Migratory birds observed during field surveys were primarily shorebirds and waterfowl, and included gulls (*Larus* sp.), American coot, great blue heron, double-crested cormorant (*Phalacrocorax auritus*), and horned grebe.

The project site is an urban setting that does not contain high-quality terrestrial and estuarine habitat. The proposed project does not include the construction of barriers to native resident or migratory fish or wild species because the proposed project would replace the existing free-span bridge with another free-span bridge of similar dimensions. The proposed project is not on a migratory pathway for terrestrial or aquatic species and would not impede the use of native wildlife nursery sites. Therefore, the proposed project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species, and any potential impacts would occur at less-than-significant levels; no mitigation measures are required.

Public Works standard construction measure #7 (Biological Resources) includes nesting bird protection measures and avoidance of roosting bats, which would ensure that project impacts to nesting birds and roosting bats would be avoided and/or minimized. However, construction of the proposed project could result in temporary disturbance of roosting bats. Disturbance due to construction activities result could in a ***significant*** impact to roosting bats. Any potentially significant impacts to this species would be reduced to less-than-significant levels with the implementation of **Mitigation Measure M-BI-3: Avoidance and Minimization Measures for Bats**, described above under Impact BI-1.

Impact BI-5: The proposed project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. ***(Less than Significant)***

Construction of the proposed project would not conflict with any local policies or ordinances protecting biological resources, including the City's Tree Protection Ordinance, because the project would not require the removal of any protected trees. Therefore, the proposed project would not conflict with local policies or ordinances protecting biological resources. Therefore, the impact would be ***less than significant***, and no mitigation measures are required.

Impact C-BI-1: The proposed project, in combination with cumulative projects, could result in significant cumulative impacts on biological resources. ***(Less than Significant with Mitigation)***

Cumulative projects are identified in Section 4.A.6, Cumulative Impacts, of the draft EIR. The proposed project would result in impacts to biological resources that would be reduced to less than significant with the implementation of mitigation measures. The cumulative projects are expected to largely take place in urban areas that are already developed and contain no habitat for biological resources. None of the projects identified involve in-water work, so no cumulative impacts to biological resources in Islais Creek are expected. Of the identified projects, Pier 94 Grasslands Meadow Enhancement Project, includes components such as a new public access to the waterway, open-space parks, a boat launch, and habitat restoration at the Pier 94 tidal marsh, which would provide benefits for biological resources.

The implementation of Public Works standard construction measures and mitigation measures described under Impact BI-1 would reduce the Islais Creek Bridge's project-related impacts to less-than-significant levels. Therefore, the proposed project in combination with other cumulative projects would not result in cumulative impacts to biological resources and impacts would be ***less then significant with mitigation***.

Topics:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
16. GEOLOGY AND SOILS. Would the project:					
a) Directly or indirectly cause 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.	☐	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐	☐
iv) Landslides?	☐	☐	☒	☐	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐	☐
c) Be located on geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐	☐

Topics:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
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?	☐	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐	☐

The proposed project does not propose the use of septic tanks or alternative wastewater disposal systems; therefore, topic 16 (e) is not applicable.

Impact GE-1: The proposed project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving fault rupture, strong seismic ground shaking, seismically induced ground failure, including liquefaction, or landslides. *(Less than Significant)*

The project site is in a seismically active area and has a high potential to experience very strong shaking during an earthquake.[91] No active fault lines cross the project site, and the site is not in the Alquist-Priolo Earthquake Fault Zone. The Holocene-age Serra fault is the nearest fault to the project site, approximately 6 miles from the project site. The project site is in an area that has very high liquefaction susceptibility.[92],[93] Groundwater levels at the project site are between 7 to 10 feet below ground surface.[94] The landslide hazard for the project area is low because the area is relatively flat, with little to no slopes. The project area is not in an Earthquake-Induced Landslide Zone Area, where previous landslides have occurred.[95]

The proposed project would replace the existing structurally deficient bridge with a new bridge that would have engineering standards incorporated to address ground-failure related to liquefaction and other seismic hazards, thereby improving safety of the bridge conditions from existing conditions. The bridge would incorporate engineering standards that address seismic risks such as liquefaction, lateral spreading, and landslides. The proposed fixed, single-span bridge is expected to provide greater stiffness than the existing drawbridge, and replacement of the bridge superstructure and the removal of the counterweight and trunnion would keep the weight within the allowable capacities of existing pile foundations. Additional new deep foundations using nondriven pile systems would be placed in locations that do not conflict with existing piles, if found to be required in more advanced design.[96] The bridge would be designed in accordance with Caltrans Seismic Design Criteria, which specifies the minimum seismic design requirements

[91] MTC/ABAG, Hazard Viewer interactive map, 2020, *https://abag.ca.gov/our-work/resilience/data-research/hazard-viewer*, accessed October 20, 2023.
[92] City and County of San Francisco, State of California Seismic Hazard Zones, 2000, *https://sfgov.org/sfc/sites/default/files/ESIP/FileCenter/Documents/10438-California%20Seismic%20Hazard%20Zones%20Map.pdf*, accessed February 2, 2023.
[93] Liquefaction occurs when vibrations or water pressure cause soil particles to spread apart and lose contact with each other. When soils temporarily lose strength, they behave as a liquid rather than a solid, resulting in their inability to support the weight of a structure above. Saturated soils that are loose, granular sediment or fill are more susceptible to liquefaction.
[94] AECOM, 2017. Geotechnical Investigations and Seismic Evaluation for Islais Creek Bridge Rehabilitation.
[95] MTC/ABAG, Hazard Viewer interactive map, 2020, *https://abag.ca.gov/our-work/resilience/data-research/hazard-viewer*, accessed February 2, 2023.
[96] AECOM, Draft Type Selection Report for Islais Creek Bridge, prepared for Caltrans, June 2023.

for newly designed "Standard" concrete bridges.[97] Caltrans would be the approving agency for the design of the bridge; the Caltrans Local Assistance Engineer would approve the plans, confirming that the design meets applicable design standards, including for seismic resilience. Construction and operation of the proposed project would not exacerbate the potential for liquefaction or other seismic-related ground failure.

Therefore, with compliance with the Caltrans Seismic Design Criteria, the proposed project would not cause or result in potential substantial adverse geology and soils effects. This impact would be ***less than significant***, and no mitigation measures are required.

Impact GE-2: The proposed project would not result in substantial erosion or loss of topsoil. ***(Less than Significant)***

The project area is generally flat or gently sloping with soils that have a moderate susceptibility to erosion by water and wind. The proposed project would require various excavation activities: excavation to a depth of up to 15 feet to tie into the combined sewer/stormwater system; excavation to a depth of 5 feet behind the existing bridge abutments; and up to 80 feet below the floor of the existing abutments for cast-in-drilled-hole or cast-in-steel-shell piles. No excavation would occur in the Islais Creek channel.

During ground-disturbing activities, soils could be exposed to erosive forces of wind, rain, and stormwater runoff, particularly if construction occurs during periods of prolonged heavy rainfall. Public Works standard construction measure #3 (Water Quality) would be implemented during project construction and would include typical erosion control measures, such as coir rolls and hydroseeding along the base of slopes to the Islais Creek channel. These measures would minimize erosion and the loss of topsoil during construction. Therefore, impacts would be ***less than significant***, and no mitigation measures would be required.

During the project operations, conditions would be the same as existing conditions, because the site would be restored to preconstruction conditions, including revegetation of disturbed areas. Therefore, there would be ***no impact*** during project operation.

Impact GE-3: The proposed project would not result in on- or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse by being on a geologic unit or soil that is unstable, or that could become unstable. ***(Less than Significant)***

Construction activities that could cause a geologic unit or soil to become unstable include soil excavation, construction-related dewatering, and drilled piles. During construction of the proposed project, soil excavation and drilled piles would be required. Soil excavation would be limited to the ends of the bridge approaches near the abutments, as well as localized trenching for new catchbasin connections to the existing combined sewer/stormwater system and trenching for electrical conduits. Excavation depths would range from 5 to 15 feet on the Third Street approaches to the bridge, and up to 80 feet below the floor of the existing abutments if cast-in-drilled-hole or cast-in-steel-shell piles are necessary.

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[97] Caltrans, Caltrans Seismic Design Criteria, Version 2.0, 2019, *https://dot.ca.gov/-/media/dot-media/programs/engineering/documents/seismicdesigncriteria-sdc/202007-seismicdesigncriteria-v2-a11y.pdf*, accessed October 20, 2023.

The project area is susceptible to liquefaction due to the properties of the subsoils, and thereby lateral spreading, or the lateral displacement of gently to steeply sloping ground, which can be induced by liquefaction. The bridge would incorporate engineering standards that address liquefaction, lateral spreading, and other geological risks. As discussed for Impact GE-1, the bridge would be designed in accordance with Caltrans policies, standards and practices, including Caltrans Seismic Design Criteria for concrete bridges.[98] The Caltrans Engineers (administering the federal program funding the Islais Creek Bridge Project) would be the final approvers for the bridge's design. Compliance with these standards and requirements would avoid the potential for adverse impacts related to geologic hazards.

Additionally, soil erosion control measures and BMPs would be implemented during project construction to stabilize the Islais Creek banks where the work would take place, including the use of coir rolls and hydroseeding. The final bridge design would be reviewed by Caltrans for conformance with recommendations in the site-specific geotechnical report prepared for the proposed project. With these project features, project impacts related to unstable geologic units and soil would be ***less than significant*** during construction.

Project operation would not affect the geologic and soil conditions at the site. No mitigation measures are required.

Impact GE-4: The proposed project would not create substantial risks to life or property by being located on expansive soils. ***(Less than Significant)***

The proposed project site is in an area with expansive soils; the project site's soils are classified as clayey and have a high water table and poorly drained soils with very slow infiltration rates.[99] These types of soils tend to have high shrink-swell potentials meaning that the volume of the soils changes as a result of moisture content in the soil. The design of the bridge would incorporate Caltrans engineering standards that would address expansive soils, including design of the existing abutments as necessary to support the new bridge span. Therefore, the impact would be ***less than significant***, and no mitigation measures are required.

Impact GE-5: The proposed project would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. ***(Less than Significant)***

Paleontological resource localities are those sites where the fossilized remains of extinct animals and/or plants have been preserved. Rock formations with paleontological sensitivity are those rock units that have yielded significant vertebrate or invertebrate fossil remains. These include, but are not limited to, sedimentary rock units that contain significant paleontological resources anywhere within its geographic extent.

The local geology of the project site consists of a series of Holocene epoch Quaternary alluvium. Geologic subunits include:

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[98] Caltrans, Caltrans Seismic Design Criteria, Version 2.0, 2019, *https://dot.ca.gov/-/media/dot-media/programs/engineering/documents/seismicdesigncriteria-sdc/202007-seismicdesigncriteria-v2-a11y.pdf*.

[99] NRCS. Web Soil Survey, 2022, *https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx*, accessed February 2, 2023.

- **Artificial fill (af)**: loose to very well consolidated gravel, sand, silt, clay, rock fragments, organic matter, and man-made debris in various combinations.

- **Estuary Deposits [Bay mud (Qhbm)]**: Water-saturated estuarine mud; predominantly gray, green, and blue clay; and silty clay underlying marshlands and tidal mud flats of the SF Bay. The mud also contains a few lenses of well-sorted, fine sand and silt, a few shelly layers (oysters), and peat.

- **Basin Deposits (Qhb)**: Very fine silty clay to clay deposits occupying flat-floored basins at the distal edge of alluvial fans adjacent to the bay mud. Also contains unconsolidated, locally organic, plastic silt and silty clay deposited in very flat valley floors.

Although ground-disturbing activities would occur as a result of the proposed project, the proposed project is not expected to result in the disturbance or overlap with paleontological resources as the soil types present are not thought to harbor fossils or other resources and the project area is entirely underlain by artificial fill and Holocene-age deposits. Artificial fill has low potential to contain paleontological resources. Holocene sedimentary deposits are generally considered too young geologically speaking to contain fossils. Therefore, these deposits have a "low potential" to contain paleontologically sensitive geologic units. Thus, the proposed project would not impact paleontological resources. Furthermore, the soils that would be disturbed were previously disturbed down to deep levels when the existing bridge was constructed in 1950. Therefore, the proposed project is not expected to impact paleontological resources and impacts would be ***less than significant***. No mitigation measures are required.

A unique geological or physical feature embodies the distinctive characteristics of any regional or local geologic principles, provides a key piece of information important to geologic history, contains minerals not known to occur elsewhere in the county, and/or is used as a teaching tool. No unique geological features exist at the project site; therefore, ***no impact*** on unique geological features would occur.

Impact C-GE-1: The proposed project, in combination with cumulative projects, would not result in significant cumulative impacts on geology, soils, or paleontological resources. ***(Less than Significant)***

Geology, soils, seismicity, and paleontological impacts are generally site-specific and highly localized. Therefore, the potential for the proposed project to combine with cumulative projects to result in a significant cumulative impact related to geology, soils, and seismicity would be low. Cumulative projects are identified in Section 4.A.6, Cumulative Impacts, of the draft EIR, and no cumulative projects are within 400 feet of the project site.

Given the distance as well as the type of the projects, the Islais Creek Bridge Project would not combine with these projects to result in cumulative impacts to geology, soils, or paleontological resources. Cumulative impacts would be ***less than significant***, and no mitigation measures are required.

Topics:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
17. HYDROLOGY AND WATER QUALITY. Would the project:					
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	☐	☐	☒	☐	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☐	☐	☒
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 through the addition of impervious surfaces, in a manner that would:					
i) Result in substantial erosion or siltation on- or offsite;	☐	☐	☒	☐	☐
ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or offsite;	☐	☐	☒	☐	☐
iii) 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; or	☐	☐	☒	☐	☐
iv) Impede or redirect flood flows?	☐	☐	☒	☐	☐
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐	☐
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐	☐

Implementation of the project would involve the demolition of the existing Islais Creek Bridge and construction of a new Islais Creek Bridge. The project would not result in an increase in impervious surface that would noticeably interfere with groundwater recharge, nor would the project require any dewatering of groundwater during project construction or operation. Thus, the project would cause no measurable reduction in groundwater recharge or adverse effect on groundwater supplies. For these reasons, topic E.17(b) is not applicable.

Impact HY-1: The proposed project would not violate any water quality standards or otherwise substantially degrade water quality. ***(Less than Significant)***

The project location in southeastern San Francisco is an urban setting with a mix of industrial and commercial areas. The Islais Creek Bridge crosses the Islais Creek channel approximately 0.6 mile upstream from the bay. Historically, Islais Creek flowed approximately 3.5 miles from San Francisco's Twin Peaks to San Francisco Bay.[100] Previously fed by numerous tributaries, springs, and small creeks, the channel has largely been culverted and flows underground through pipes beneath the city streets. The majority of the watershed is now diverted to the southeast water treatment plant, so the channel no longer functions as a creek due to limited freshwater discharges into the channel.

The project site is in the South Bay Basin of San Francisco Bay. Beneficial uses of the South Bay Basin include estuarine habitat, commercial and sport fishing, wildlife habitat, water contact recreation, water noncontact recreation, and navigation. The RWQCB has listed the South Bay Basin as an impaired water body for chlordane, dichlorodiphenyltrichloroethane, dieldrin, dioxin compounds, furan compounds, invasive species, mercury, polychlorinated biphenyls, and trash.[101]

The existing bridge does not have a system that captures stormwater; instead, stormwater falling on the bridge superstructure drains directly to the Islais Creek Channel through the existing open-grate decking. Additionally, there is no component of the existing bridge that displaces incoming tidal waters and rainfall.

CONSTRUCTION ACTIVITIES

As stated in the Draft EIR Project Description, Islais Creek Bridge Project's in-water construction would be minimized by modifying the existing bridge abutments to support the new bridge girders and deck. Therefore, no additional bridge or abutment elements would be constructed in the channel. The existing bridge deck and mechanical and electrical equipment would be demolished; the demolition and removal of these elements would take place behind the abutments and from barges in the channel. Once the existing bridge is removed, the existing fenders and piling would be cut below the mudline and removed from the site. Barges would also support the construction of the new bridge, but no new permanent fill would be placed in Islais Creek channel. As described in Chapter 2, Project Description, of the draft EIR, construction of the proposed project would require various excavation activities outside of the Islais Creek channel and would mostly be limited to the ends of the bridge, where the raised area tapers down to the existing Third Street. There would also be localized trenching for new catchbasin connections to the existing combined sewer/stormwater system, and trenching for electrical conduits.

Construction of the Islais Creek Bridge would result in ground-disturbing activities and work with materials that could adversely affect water quality if sediments or chemicals are carried into the Islais Creek via stormwater runoff. Accidental chemical releases from the project work areas and staging areas could also occur due to the use of concrete, paints, solvents, fuels, and other hazardous materials associated with construction and heavy equipment use.

The project is required to comply with a number of local, state, and federal requirements to ensure that project construction activities would not degrade surface or groundwater quality. Implementation of the

[100] WRECO. Location Hydraulic Study and Sea Level Rise Report, July 2016.
[101] State Water Resources Control Board, 2010 Integrated Report (Clean Water Act Section 303(d) List/305(b) Report) — Statewide, *http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml*, accessed July 13, 2023.

city's construction site runoff control requirements, construction general permit, SWPPP BMPs, water quality protection measures included in resource agency permits (such as the USACE Clean Water Act section 404 permit and RWQCB's section 401 Water Certification), and Public Works standard construction measure #3 (Water Quality) would ensure that project construction activities would not result in substantial amounts of erosion or sedimentation in stormwater runoff, and that hazardous materials used during construction would be managed in accordance with good housekeeping practices to prevent a release that could contaminate stormwater.

Many of the required construction measures that would prevent pollutants from being discharged in stormwater would also be consistent with Public Works standard construction measure #3 (Water Quality), which is implemented for all construction activities. At a minimum, the BMPs would address good housekeeping practices, including those for managing hazardous materials used during construction, nonstormwater management, erosion and sediment control, and run-on and runoff control (e.g., fiber rolls, and/or gravel bags around storm drain inlets, silt fencing, etc.). These BMPs would be implemented during all phases of construction. A qualified professional must inspect the required BMPs at a regular frequency, as determined based on the risk level. Therefore, water quality impacts related to violation of water quality standards or degradation of water quality due to discharge of polluted stormwater runoff during construction-related activities would be ***less than significant***, and no mitigation measures are required.

OPERATION

Once constructed, stormwater falling on the solid deck of the proposed new superstructure would be captured and conveyed to the combined sewer/stormwater system through either existing or upgraded sewer lines under Third Street. The relatively small footprint of the bridge superstructure would have a negligible increase in added stormwater-runoff from the solid bridge deck diverted to the combined sewer system. In contrast, rain on the existing bridge drains through the open-grid deck directly into the bay below it. Given the improvement to water quality from existing conditions by capturing storm water, impacts would be ***less than significant***, and no mitigation measures are required.

Impact HY-2: The proposed project would not alter the existing drainage pattern of the area in a manner that would result in substantial erosion, siltation, or flooding on site or off site. ***(Less than Significant)***

EXISTING CONDITIONS AT ISLAIS CREEK

Islais Creek was historically a wetland along San Francisco Bay, and the flow of water in the Islais Creek channel is almost entirely tidal due to its direct connection to the bay. Islais Creek is currently generally culverted and covered and the portion upstream of the shoreline, approximately 1,700 feet west of Third Street, feeds directly into the city's combined sewer/stormwater system.

The current outfall from the culverted creek is between the northbound and southbound elevated structures of the I-280 freeway. The banks of the existing channel east of the culverted creek outfall were artificially created with fill and now form the low-lying topography around the channel.[102] Figure 9 shows the area in the vicinity of the channel with elevations of less than 11 feet North American Vertical Datum of 1988 (NAVD88),[103] based largely on 2010/11 LIDAR data. The Federal Emergency Management Agency base floodplain elevation for the Islais Creek channel (Zone AE)[104] is 10 feet NAVD88, meaning there is a 1 percent annual chance of flooding. Tidal surges associated with king tides[105] and storm surges have resulted in flooding in this area. Additionally, the low-lying land surrounding the creek channel functions as a basin that fills with tidal water from below rather than stormwater from above. The existing bridge does not have a system that captures stormwater; instead, stormwater falling on the bridge superstructure drains directly to the Islais Creek Channel through the existing open-grate decking. Additionally, there is no component of the existing bridge that displaces incoming tidal waters and rainfall.

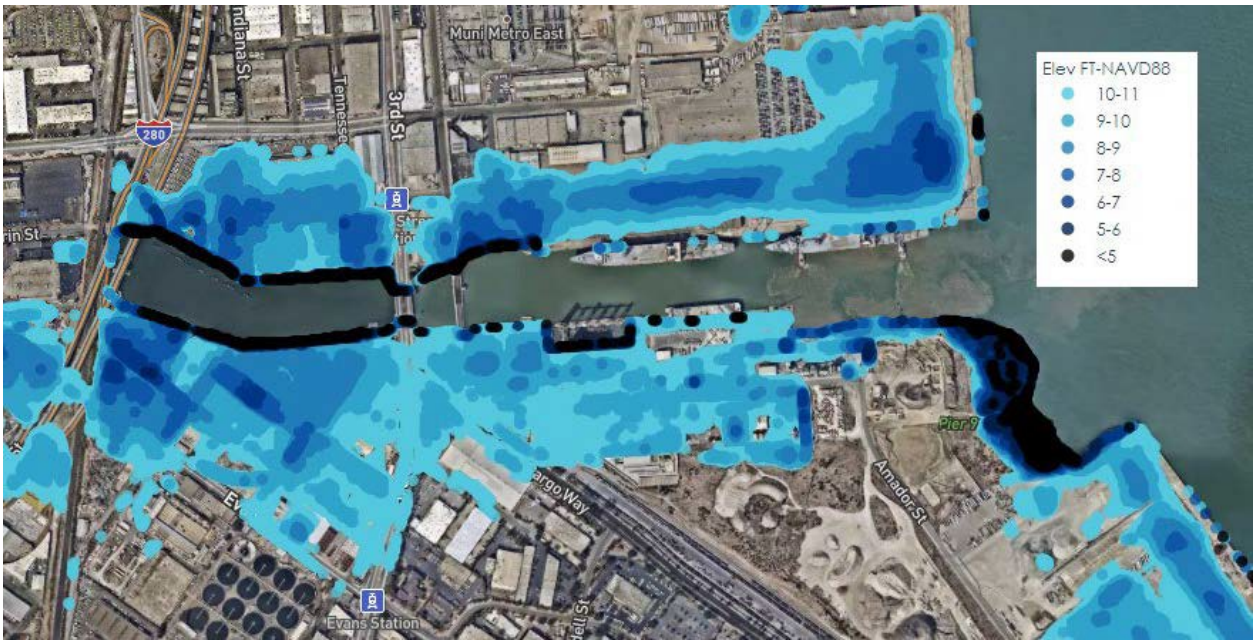

Figure 9 Elevation Map of Islais Creek Channel

[102] Richard, Christopher, Oakland Museum of California (n.d.), Guide to San Francisco Bay Area Creeks *http://explore.museumca.org/creeks/index.html*, accessed December 22, 2022.

[103] NAVD88 is the official standard datum of the National Geodetic Survey (the United States federal agency that defines and manages a national coordinate system).

[104] Zone AE is designated on the Federal Emergency Management Agency Flood Insurance Rate Map. It denotes an area with 1 percent annual chance of inundation where base flood elevation is known.

[105] King tides is a term to describe exceptionally high tides that occur during a new or full moon.

SEA-LEVEL RISE AND ISLAIS CREEK BRIDGE DESIGN

A memorandum summarizing the approach to addressing sea-level rise for the Islais Creek Bridge Project was prepared for the project.[106] Sea levels are rising globally due to climate change, and they are expected to continue to rise at an accelerating rate for the foreseeable future. The City and County of San Francisco relies on the 2018 guidance developed by the State of California to inform sea-level rise planning efforts.[107] The 2018 State of California Sea-Level Rise Guidance provides a science-based methodology for state and local governments to use in analyzing and assessing the risks associated with sea-level rise and to incorporate sea-level rise into planning, permitting, and investment decisions. Projections regarding the extent of sea-level rise use different GHG emission trajectory scenarios and are based on the Intergovernmental Panel on Climate Change's 2014 "Representative Concentration Pathways," or RCPs.[108] These four scenarios are defined as follows:

- RCP 8.5 assumes that anthropogenic global GHG emissions continue to rise over the next century (i.e., there are no significant efforts to limit or reduce emissions).
- RCP 6.0 assumes that anthropogenic global GHG emissions peak in 2080 and then decline.
- RCP 4.5 assumes that anthropogenic global GHG emissions peak in 2040 and then decline.
- RCP 2.6 assumes that stringent emissions reductions, with anthropogenic global emissions declining by about 70% between 2015 and 2050, to zero by 2080, and below zero thereafter (i.e., humans would absorb more GHGs from the atmosphere than they emit).

The City and County of San Francisco has selected RCP 8.5 as the upper range and RCP 4.5 as the lower range for sea-level rise planning.[109] The RCP 4.5 scenario is chosen as the lower range GHG emission trajectory scenario because RCP 4.5 represents a more realistic, or "likely" potential lower range for sea-level rise planning, and because achieving RCP 2.6 requires significant actions at a global scale that are outside of San Francisco's control.

The existing top of Islais Creek bridge deck is at 15.7 feet. This would mean that if the current bridge deck configuration were maintained, the machinery pits and bottom steel girders of the current bridge that support the deck would be submerged between 1.8 feet (under RCP 4.5) and 4.2 feet (under RCP 8.5) during flooding by 2075. Public Works designed the Islais Creek Bridge to account for this range of projected sea-level rise. The Islais Creek Bridge Project would raise the bridge deck elevation as far as possible (i.e., 3 feet

[106] San Francisco Public Works, Memorandum on Project-Related Flooding and Sea Level Rise Analysis for the Islais Creek Bridge Rehabilitation Project, January 11, 2023.

[107] State of California, Sea-Level Rise Guidance, 2018 Update, *https://www.opc.ca.gov/webmaster/ftp/pdf/agenda_items/20180314/Item3_Exhibit-A_OPC_SLR_Guidance-rd3.pdf*.

[108] Intergovernmental Panel on Climate Change, 2018: Annex I: Glossary [Matthews, J.B.R. (ed.)]. In: Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty [Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (eds.)], Cambridge University Press, Cambridge, UK and New York, NY, USA, pp. 541-562, doi:10.1017/9781009157940.008.

[109] Representative Concentration Pathways are used for sea level rise planning because as greenhouse gases trap more energy from the sun, the oceans are absorbing more heat, resulting in an increase in sea surface temperatures and rising sea level. Source: Climate Change Indicators: Oceans | US EPA.

above current bridge deck elevation), given the geometric factors determined by site conditions. Geometric factors constraining the bridge deck elevation include:

- **Deck Elevation**: The maximum elevation to which the deck could be raised is the maximum height to which traversable ramps could be constructed on the approaches along Third Street to the deck.
- **Bridge Abutments**: Factors limiting the distance that the bridge could be raised are 1) right-of-way limitations[110], and 2) the lengths of vertical curves necessary to allow changes in San Francisco Municipal Railway (Muni) Metro track elevation to be traversable by light rail.
- **Right-of-Way Constraints**: To the north of the project on Third Street, the limiting point would be the first driveway (associated with another property) north of the channel because the roadway could not be elevated in such a way that the access to that property is reduced.
- **Railroad Track Crossing**: To the south of the project, the Union Pacific railroad tracks crossing Third Street and access to Fire Station 25 would constrain the existing roadway elevation. Height adjustments to railway tracks require a long distance to construct traversable inclines. Any increased elevation of the bridge deck would require a substantially larger project footprint.

Applying the tightest vertical transitional curve radii from Muni specifications to the distances available, the bridge deck would be raised between 2.5 feet and 3 feet, pending final design. This would achieve a soffit and top of deck minimum elevation of 15.2 feet and 18.6 feet NAVD88, respectively, meaning that the new bridge's soffit and top of deck elevation would be approximately 5.2 feet and 3.0 feet higher, respectively, than the existing bridge. Raising the bridge much more than this would not yield additional benefit without additional major intervention to the areas surrounding the bridge (i.e., the area surrounding the bridge is low-lying and would also need to be built up to accommodate raising the bridge more). Even if the bridge deck were higher than this point, much of the surrounding ground could be flooded, potentially rendering the approaches on Third Street not traversable. Given the geometric and site constraints, the Islais Creek Bridge Project would reduce the likelihood of flooding of the bridge from sea-level rise events, compared to existing conditions.

The Islais Creek Bridge Project would retain and reuse the existing bridge abutments; the project would not place any new structures in the channel that could impede the flow of water in any direction or exacerbate existing or future flooding conditions. The Islais Creek Bridge Project design is also consistent with future planning efforts as part of the Islais Creek Adaptation Strategy[111] and is designed at a compatible elevation to align with future shoreline armoring measures on the channel banks adjacent to the bridge without requiring additional augmentation of the bridge.

CONSTRUCTION ACTIVITIES

As described for Impact HY-1 above, implementation of the city's construction site runoff control requirements, construction general permit SWPPP BMPs, water quality protection measures included in resource agency permits (such as the USACE Clean Water Act section 404 permit and RWQCB's section 401 Water Certification), and Public Works standard construction measures would ensure that project construction activities would not result in substantial amounts of erosion or sedimentation in stormwater

[110] "Right-of-way limitations" refers to driveways to existing structures on private property, the Muni platform to the north, and the freight rail crossing to the south, all of which have fixed elevations that cannot practically be changed.

[111] *Islais Creek Southeast Mobility Adaptation Strategy*. San Francisco Planning Department, June 30, 2021.

runoff. Implementation of water quality protection measures through standard construction measures and permit requirements would ensure that project construction activities would not alter drainage patterns in a manner that would subsequently result in erosion, siltation or flooding on site or off site. Therefore, impacts related to erosion, siltation, or flooding would be ***less than significant***.

OPERATION

As detailed above, the Islais Creek Bridge Project has been designed to adapt to inundation or flooding under future sea-level rise conditions up to year 2075. Using a planning horizon of 2075, and the city's adopted guidance related to planning for sea-level rise, sea-level rise between 1.9 feet and 4.3 feet is anticipated for the project area. The proposed project would raise the bridge deck elevation as far as geometric factors allow between 2.5 feet and 3 feet higher than the existing bridge elevation. This would result in the bottom of the bridge and top of deck having a minimum elevation of 15.2 feet and 18.6 feet NAVD88, respectively. This would reduce the likelihood of flooding of the bridge due to sea-level rise. Additionally, the project would be compatible with the Islais Creek Adaptation Strategy,[112] and is designed at a compatible elevation to align with future shoreline armoring measures on the channel banks adjacent to the bridge without requiring additional modification of the bridge.

As described above, the maximum elevation to which the deck could be raised is the maximum height to which traversable ramps could be constructed on the approaches on Third Street to the deck. All of the landside scope of the project is on areas that are currently paved, so the project would not increase impervious surfaces above existing conditions. The reconstructed trackway and Third Street would be designed to convey stormwater runoff to the curb and gutters along the Third Street, and then to new stormwater collection drains at the bridge approaches that would be conveyed to the combined sewer/ stormwater system. The Islais Creek Bridge Project would not alter the existing drainage pattern of the area in a manner that would result in flooding on site or off site. Therefore, the impact to existing drainage patterns would be ***less than significant***, and no mitigation measures are required.

Impact HY-3: The proposed project would not risk release of pollutants due to project inundation in flood hazard, tsunami, or seiche zones. ***(Less than Significant)***

The proposed project is in both a 100-year flood zone and a tsunami hazard zone. There is a risk of introducing pollutants into the combined sewer system, separate stormwater system, and directly into the Islais Creek channel and San Francisco Bay during the project's 24-month construction period. As mentioned for Impact HY-1, construction of the Islais Creek Bridge would result in ground-disturbing activities and work with materials that could adversely affect water quality if sediments or chemicals are carried into the Islais Creek via stormwater runoff. Accidental chemical releases from the project work areas and staging areas could also occur due to the use of concrete, paints, solvents, fuels, and other hazardous materials associated with construction and heavy equipment use.

As described for Impact HY-1, the project is required to comply with a number of local, state, and federal requirements to ensure that project construction activities would not degrade surface or groundwater quality. Implementation of the city's construction site runoff control requirements, construction general permit, SWPPP BMPs, water quality protection measures included in resource agency permits (such as the

[112] *Ibid*

USACE Clean Water Act section 404 permit and RWQCB's section 401 Water Certification), and Public Works standard construction measure #3 (Water Quality) would ensure that project construction activities would not result in substantial amounts of erosion or sedimentation in stormwater runoff, and that hazardous materials used during construction would be managed in accordance with good housekeeping practices to prevent a release that could contaminate stormwater. With the implementation of these construction practices and the low likelihood of a flood, tsunami, or seiche event during construction, the risk of pollutant release due to project inundation would be low. Therefore, pollutant release during operation is not anticipated, and the impact would be ***less than significant***; no mitigation measures are required.

Impact HY-4: The proposed project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. ***(Less than Significant)***

The applicable water quality control plan for the project area is the San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan). There is no groundwater management plan for the Islais Valley Groundwater Basin. Construction of the project would be required to adhere to all applicable local and state water quality regulations, including policies and objectives of the basin plan. As discussed above for Impact HY-1, project construction and operation would require compliance with the construction general permit and the city's stormwater management ordinance, as well as permits and authorizations for the bridge construction that would include measures to minimize transport of pollutants to receiving waters. Compliance with these mandatory regulatory requirements would ensure that all discharges to waterbodies meet water quality objectives and policies of the basin plan, rendering the potential impact ***less than significant.*** The project would not result in an increase in impervious surface that would noticeably interfere with groundwater recharge, nor would the project require any groundwater during project construction or operation. Thus, the project would cause no measurable reduction in groundwater recharge or adverse effect on groundwater supplies.

Impact C-HY-1: The proposed project, in combination with cumulative projects, would not result in a significant cumulative impact on hydrology and water quality. ***(Less than Significant)***

The geographic scope for cumulative impacts to hydrology and water quality is the Islais Valley Groundwater Basin for groundwater impacts and the South Bay Basin of San Francisco Bay for surface water impacts. As discussed under Impact HY-1, the RWQCB has listed the South Bay Basin as an impaired water body. Although the project would involve the use of heavy equipment and soil disturbances that could result in increased erosion or release of hazardous materials, the Islais Creek Bridge project would have less-than-significant water quality impacts related to violation of water quality standards, alteration of existing drainage patterns, exceedance of stormwater drainage capacity, and risk of release of pollutants due to inundation by tsunami or seiche waves.

Cumulative projects in the Islais Valley Groundwater Basin and the South Bay Basin of San Francisco Bay may result in increased pollution into the Islais Creek channel and San Francisco Bay. Cumulative project would be required to comply with BMPs to ensure no adverse water quality impacts during project construction and compliance with applicable water quality regulations and permits is anticipated to minimize water quality impacts. Therefore, the cumulative impacts to water quality due to erosion, changes to drainage patterns, flooding, inundation, or other risk of release of pollutants would be ***less than significant***.

Topics:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
18. HAZARDS AND HAZARDOUS MATERIALS. Would the project:					
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐	☐
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?	☐	☐	☒	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☐	☒
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?	☐	☐	☐	☐	☒
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 or excessive noise for people residing or working in the project area?	☐	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐	☐
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	☐	☐	☐	☐	☒

The proposed project is not located within one-quarter mile of a school, is not located on a list of hazardous material sites complied pursuant to Government Code section 65962.5, is not located within an airport land use plan or within two miles of a public airport or public use airport, and is not located within or adjacent to a wildland fire area. Therefore, topics 18(c), 18(d), 18(e), and 18(g) are not applicable.

Impact HZ-1: The proposed project would not create a significant hazard through the routine transport, use, or disposal of hazardous materials or be 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. ***(Less than Significant)***

The proposed project would demolish and construct a new Islais Creek Bridge over a period of approximately 24 months. Constructed in 1950, the bridge likely contains hazardous materials such as lead.

All demolition work would be conducted by an appropriately licensed and certified abatement contractor, and is required by law to comply with all local, state, and federal requirements regarding hazardous materials handling, storage, transport and disposal. Handlers of hazardous materials are required to adhere to OSHA and California Division of Occupational Safety and Health (Cal/OSHA) health and safety requirements. Hazardous materials would be disposed of in an approved offsite landfill that accepts these types of waste. During project construction, the project would require more than 50 cubic yards of soil disturbance to replace existing pavement on Third Street, add piles to existing abutments and implement new catchbasin connections and electrical conduits. The proposed project is in an area that the San Francisco Health Department administers under article 22A of the San Francisco Health Code (also referred to as the Maher Ordinance) and has identified as likely containing hazardous substances in the soil and/or groundwater. These hazardous substances could be released from the soil during soil disturbing activities. Before the project commences, Public Works shall work with the San Francisco Department of Public Health pursuant to San Francisco Administrative Code 22A.17 to implement the requirements of article 22A of the San Francisco Health Code.[113]

As part of the Phase I environmental site assessment prepared for the project site, searches were conducted on the Environmental Data Resources, Inc. (EDR) database,[114] the State Water Resources Control Board's online database GeoTracker, the California Department of Toxic Substances Control's (DTSC's) online database EnviroStor, and city directories for facilities on federal and state site lists. The project site is not included on a list of hazardous material sites compiled pursuant to Government Code section 65962.5 as part of the Cortese program. However, five nearby sites (between 190 feet to 1,401 feet from the project site) were identified as potential offsite historic Recognized Environmental Conditions (HRECs). A HREC refers to a past release that has been remediated. Potential contaminants included petroleum hydrocarbons as diesel (TPH-d), total petroleum hydrocarbons as gasoline (TPH-g), oil/water separation sludge, unspecified oil containing waste, unspecified solvent mixtures, waste oil, mixed oil, latex waste, unspecified organic liquid mixture, and sulfur sludge. All of these sites have a status of Case Closed and, in most cases, closure status was granted with knowledge that contamination remains in soil and/or groundwater, and with land use restrictions in place. Pier 90 Port of San Francisco (former Exxon Mobil bulk oil facility), which is 1,800 feet from the bridge was identified as a Recognized Environmental Condition (REC). An REC is the likely presence of any hazardous substances or petroleum products in, on, or at a property. The potential contaminants include TPH-g, TPH-d, or TPH as motor oil (TPH-mo); and arsenic, lead, copper, nickel, and zinc from bulk storage tanks. No hazardous waste or other contamination was observed at the project site. The site assessment did not find any evidence of HREC or RECs identified in connection with the project site. Therefore, it is unlikely that these contaminants from nearby sites migrated to the project site.

Elevated lead concentrations exist in soils along older roadways as a result of aerially deposited lead (ADL) from the historical use of leaded gasoline. Excavated soils at the project site may contain ADL that exceeds the Soluble Threshold Limits Concentrations (5.0 milligrams per liter [mg/L]) based on the standard California Waste Extraction Test. Pursuant to the Maher Ordinance, any soils designated for removal from the project site would be sampled and analyzed. During construction, all grading operations would be conducted in accordance with applicable Health and Safety Code, Chapter 6.5 (Section 25100, et. Seq.) and Maher Ordinance Requirements including a project-specific worker Health and Safety Plan developed using

[113] Maher Ordinance Screening Request, Islais Creek Bridge Rehabilitation, October 26, 2023.

[114] The radius environmental database in the EDR report, dated April 11, 2022, presents the results of a search for properties within a 1-mile radius of the project site that are listed on federal, state, and/or local environmental databases, as well as EDR proprietary databases. The results of the database search include the following: addresses of known UST/aboveground storage tank (AST) sites; hazardous waste generation, treatment, storage, and/or disposal facilities; and subsurface contamination known to be present in the study area.

the following guidance to minimize worker exposure to volatile organic compounds, semi-volatile organic compounds, and lead-impacted air, dust, or soil.

The proposed project would be required to remediate potential soil and/or groundwater contamination described above in accordance with article 22A of the health code. The health department would oversee this process, and various health protective regulations would apply to any disturbance of contaminants in soil or groundwater that would be encountered during construction to assure that no unacceptable exposures to the public would occur.

Construction of the proposed project would involve the transport, use, and disposal of limited quantities of hazardous materials typically used in construction, including fuels, paints, solvents, adhesives, asphalt, and lubricants. These materials could pose a threat to human health or the environment if not properly managed. If these materials are inadvertently spilled or released into the environment, this could result in a potentially significant impact. Workers who handle hazardous materials are required to adhere to OSHA and Cal/OSHA health and safety requirements. Hazardous materials must be transported in accordance with RCRA and United States Department of Transportation regulations, and disposed of in accordance with RCRA and the California Code of Regulations (CCR) at a facility that is permitted to accept the waste. The use of these materials is regulated by DTSC in CCR Title 22. Adherence to federal and state regulations during project construction reduces the risk of exposure to hazardous materials and accidental hazardous materials releases. Compliance with existing regulations is mandatory; therefore, construction of the proposed project is not expected to create a hazard to construction workers, the public, or the environment through the routine transport, use, disposal, or accidental release of hazardous materials. Furthermore, as part of the Construction General Permit, the contractor would be required to prepare and implement an SWPPP, which would include BMPs to prevent accidental spills of hazardous materials during construction.

For the reasons described above, proposed project would not result in a significant hazard to the public or environment from the disturbance or release of contaminated soil and/or groundwater or release hazardous materials into the environment during demolition and construction activities. Therefore, the project construction would result in a ***less than significant*** impact.

The operation of the project would be the same as existing conditions. Chemicals, such as paints and cleaners, may be used to maintain the new bridge; however, they would be used in limited amounts and according to the label instructions, and with adherence to all applicable regulations. Therefore, impacts related to hazardous materials during operation would be ***less than significant***, and no mitigation measures are required.

Impact HZ-2: The proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. ***(Less than Significant)***

During construction of the project, full closure of the bridge would be required for up to 24 months. Third Street, including the Islais Creek Bridge, is identified as a primary emergency priority route in San Francisco's Emergency Response Plan.[115] The closure of the bridge could result in traffic delays in the vicinity of the project area, which could affect the response times of emergency response vehicles. During

[115] City and County of San Francisco Emergency Response Plan, *https://sf.gov/sites/default/files/2022-06/838-ESF%201%20-%20Transportation%20Annex.pdf*, accessed February 16, 2023.

construction, a traffic management plan would be established by SFMTA that would include a temporary detour plan. The plan would prescribe detour routes for vehicles during full closure of the bridge using portable self-contained variable message signs strategically placed at key decision points both north and south of the bridge. Close coordination with emergency service providers is in the early stages of planning to ensure that the best and most feasible routes for emergency response vehicles is developed prior the start of construction activities.[116] See Section 4.C, Transportation and Circulation, in the draft EIR for more detail regarding emergency access during project construction.

Once the new bridge is built, the current traffic conditions would be restored, and there would be no impacts to emergency response times. Therefore, the proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Impacts during project construction would be ***less than significant***, and no mitigation measures are required.

Impact C-HZ-1: The proposed project, in combination with cumulative projects, would not result in a significant cumulative impact related to hazards and hazardous materials. ***(Less than Significant)***

As discussed for Impacts HZ-1 and HZ-2, the project would constitute less-than-significant impacts related to hazards and hazardous materials, and would be expected to have no impact during project operation. Therefore, there would be no long-term impacts that could contribute to a significant cumulative impact. Therefore, there would be no cumulative impact related to hazards and hazardous materials.

Topics:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
19. MINERAL RESOURCES. Would the project:					
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?	☐	☐	☐	☐	☒
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?	☐	☐	☐	☐	☒

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.[117] The San Francisco General Plan indicates that mineral resources are not found in San Francisco to "any appreciable extent." Mineral resources are therefore not addressed in the general plan.[118] All land in San Francisco, including the project site, is designated Mineral Resource Zone 4 by the California Division of Mines and Geology under the Surface

[116] Email from Nicol Juratovac (SFFD) to Robert Postel (SFFD). SUBJ: RE: Islais Creek Bridge SPW/SFFD Meeting Minutes 3/8/2023, March 9, 2023.
[117] California Department of Conservation (CDC), California Surface Mining and Reclamation Policies and Procedures, Guidelines for Classification and Designations of Mineral Lands, 2004.
[118] San Francisco General Plan, Environmental Protection Element, Environmental Protection | San Francisco General Plan (sfplanning.org), accessed May 19, 2023.

Mining and Reclamation Act of 1975.[119] This designation indicates that there is inadequate information available for assignment to any other mineral resource zone; therefore, the project site is not a designated area of significant mineral deposits. Therefore, this topic is not applicable to the proposed project.

Topics:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
20. ENERGY. Would the project:					
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐	☐

Impact EN-1: The proposed project would not result in wasteful, inefficient, or unnecessary consumption of energy resources during construction or operation. ***(Less than Significant)***

The proposed project would replace the existing structurally deficient bridge with a new bridge built to current engineering standards; this new bridge would improve safety for all users. The proposed project would not increase the vehicle capacity of the bridge, nor would it change the bridge's operations when fully constructed. Therefore, there would not be any resulting wasteful, inefficient, or unnecessary consumption of fuel energy resources during operation.

Nonrenewable energy consumption would occur during construction of the proposed project. Construction energy consumption would primarily be in the form of indirect energy inherent in the production of materials used for construction (e.g., the energy necessary to manufacture a steel beam from raw materials); direct energy consumption in the fuel used by construction equipment and vehicles; and gasoline and diesel fuel consumption from on-road worker commute and vendor trips. Construction-related energy consumption is roughly proportional to the size of the new facilities proposed. The proposed project would be constructed over a 24-month timeframe, so construction-related energy use would be temporary. The proposed project would also comply with the city's Construction and Demolition Debris Recovery Ordinance, which requires all construction and demolition debris material removed from a project to be recycled or reused, thereby conserving its embodied energy.[120, 121]

Therefore, the proposed project would have a ***less-than-significant*** impact on energy resources, and no mitigation measures are required.

[119] California Department of Conservation, California Regional Geologic Maps, available at *https://www.conservation.ca.gov/cgs/rgm/maps*, accessed February 13, 2023.
[120] Embodied energy is the total energy required for the extraction, processing, manufacturing, and delivery of building materials to a project site.
[121] San Francisco Planning Department, Compliance Checklist Table for Greenhouse Gas Analysis for Islais Creek Bridge Project, October 20, 2023.

Impact EN-2: The proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. *(Less than Significant)*

The San Francisco Climate Action Plan (CAP) is the plan that dictates local actions to reduce GHG emissions and increase energy efficiency across the city.[122] An over-arching goal of the CAP is to supply 100 percent renewable electricity by 2025, and by 2040, supply 100 percent renewable energy. This would be achieved by the proposed project, which would enhance pedestrian and bicycle connections through project-related improvements to pedestrian and bicycle paths, thereby aligning with the goals of energy and electricity efficiency of the CAP. Another policy outlined in the CAP that aligns with the proposed project is TU-2: creating a complete and connected active transportation network that shifts trips from automobiles to walking, biking, and other active transportation modes. This goal would be achieved by this project, because the new bridge would improve connectivity between neighborhoods in San Francisco's eastern neighborhoods by constructing pedestrian and bicycle paths.

Energy use during construction would be short-term and temporary and would involve the consumption of fuel (e.g., diesel and gasoline) for construction equipment and on-road vehicles. As described in more detail in Section 9, "Greenhouse Gas Emissions," the proposed project would implement BMPs during construction that would also serve to reduce fuel and the associated energy consumption, including minimizing idling time and requiring that all construction equipment is maintained and properly tuned in accordance with manufacturer's specifications. The proposed project would also implement energy-efficient practices by complying with the city's Construction and Demolition Debris Recovery Ordinance, which requires all construction and demolition debris material removed from a project to be recycled or reused.[123] The proposed project would implement energy efficient street lights, which would conserve energy. Overhead electrical wires would be implemented to power the light rail vehicles. Energy use by these vehicles would be similar to existing conditions. In summary, construction and operation of the proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Therefore, the proposed project would have a ***less-than-significant*** impact on energy resources, and no mitigation measures are required.

Impact C-EN-1: The proposed project, in combination with cumulative projects, would not result in significant cumulative impacts related to the wasteful, inefficient, or unnecessary consumption of energy resources or conflict with or obstruct a state or local plan for renewable energy or energy efficiency. *(Less than Significant)*

The proposed project would not place a large demand on energy resources during project construction or operation. Additionally, statewide efforts are being made to increase power supply and to encourage energy conservation; the demand for energy from the proposed project would be insubstantial in the context of the total demand in San Francisco and the state; and the proposed project would not require a major expansion of power facilities. The city also plans to reduce GHG emissions to 40 percent below 1990 levels by the year 2025, and ultimately to 80 percent below 1990 levels by 2050, which would be achieved through several different strategies, including energy efficiency. Furthermore, much of San Francisco is an area with a per capita level of VMT that is low in comparison to the regional average. Therefore, energy associated with

[122] City and County of San Francisco, Climate Action Plan 2021, 2021, *https://sfenvironment.org/sites/default/files/events/cap_fulldocument_wappendix_web_220124.pdf*, accessed February 21, 2023.
[123] San Francisco Planning Department, Compliance Checklist Table for Greenhouse Gas Analysis for Islais Creek Bridge Project, October 20, 2023.

transportation fuel for the proposed project and cumulative projects would be lower than for comparable land uses elsewhere, and would not result in a wasteful consumption of fuel to support transportation activities. The proposed project would not encourage the use of large amounts of energy, fuel, or water in a wasteful manner, and would have a less-than-significant impact on energy resources. Therefore, the proposed project, combined with cumulative projects in the project vicinity, would not result in a significant cumulative impact on energy resources, and no mitigation measures would be required.

Topics:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
21. AGRICULTURE AND FORESTRY RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:					
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☐	☒
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))?	☐	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☐	☒
e) Involve other changes in the existing environment that, due to their location or nature, could result in conversion of farmland to non-agricultural use or forest land to non-forest use?	☐	☐	☐	☐	☒

The project site is in an urbanized area of San Francisco. Furthermore, 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.[124] The project site does not contain agricultural uses, and is not zoned for such uses; therefore, the proposed 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. The proposed project would not conflict with any existing agricultural zoning or Williamson Act contracts because neither applies to the project site, nor would the project involve any changes to the environment that could result in the conversion of farmland.[125] Therefore, topics 20 (a), (b), and (e) are not applicable to the proposed project.

No land in San Francisco is designated as forest land or timberland by the PRC. The project site does not contain forest land or timberland and is not zoned for such uses; the proposed project would not convert any forest land or timberland to nonforest use; and it would not conflict with existing zoning for forest land or timberland use, nor would the project involve any changes to the environment that could result in the conversion of forest land or timberland. Therefore, topics 20 (c) and (d) are not applicable to the proposed project.

Topics:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
22 WILDFIRE. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:					
a) Substantially impair an adopted emergency response plan or emergency evacuation plans?	☐	☐	☐	☐	☒
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☐	☒
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☐	☒
d) Expose people or structure to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☐	☒

[124] California Department of Conservation, Maps Reports and Data, *https://www.conservation.ca.gov/dlrp/fmmp/Pages/county_info.aspx*, accessed February 13, 2023.

[125] California Department of Conservation Important Farmland in California Map (San Francisco is identified as "Urban and Built-Up Land"), 2012 – updated 2015, *ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/regional/2012/bay_area_2012_fmmp_base.pdf*, accessed December 8, 2018.

The city does not have any state responsibility areas for fire prevention or lands that have been classified as very high fire hazard severity zones.[126] The project site, as well as the entire city, falls under the local responsibility area of the San Francisco Fire Department, and is classified as local responsibility unzoned by the office of the state fire marshal.[127] Therefore, this topic is not applicable to the proposed project.

Topics:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact	Not Applicable
23. MANDATORY FINDINGS OF SIGNIFICANCE. Does the project:					
a) Have the potential to substantially 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?	☒	☐	☐	☐	☐
b) Have impacts that are individually limited, but cumulatively considerable?	☐	☒	☐	☐	☐
c) Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☒	☐	☐	☐	☐

NOTE: Authority cited: Public Resources Code sections 21083 and 21083.05, 21083.09. Reference: Section 65088.4, Gov. Code; Public Resources Code sections 21073, 21074, 21080(c), 21080.1, 21080.3, 21083, 21083.05, 21083.3, 21080.3.1, 21080.3.2,21082.3, 21084.2, 21084.3, 21093, 21094, 21095, and 21151; *Sundstrom v. County of Mendocino* (1988) 202 Cal.App.3d 296; *Leonoff v. Monterey Board of Supervisors* (1990) 222 Cal.App.3d 1337; *Eureka Citizens for Responsible Govt. v. City of Eureka* (2007) 147 Cal.App.4th 357; *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th at 1109; *San Franciscans Upholding the Downtown Plan v. City and County of San Francisco* (2002) 102 Cal.App.4th 656.

As described in Section E.15, Biological Resources, the proposed project would not significantly affect any habitats, plant, or animal communities, or threatened or endangered species with the implementation of Public Works standard construction measures and project-specific mitigation measures. The discussion of cultural resources and tribal cultural resources in Sections E.4 and E.5 shows that, with mitigation, the proposed project would not significantly affect cultural or tribal cultural resources. The discussion of geology and soils in Section E.16, beginning on page 86, shows that the proposed project would not significantly affect unique geologic features or paleontological resources and no mitigation is required. Section 4.B of the Draft EIR addresses the project's impacts on historic architectural resources and concludes that the project would result in a significant impact to built-architectural resources.

This initial study has addressed cumulative impacts under each environmental topic and determined that for all topics, the proposed project, in combination with cumulative projects, would not result in significant cumulative impacts. The EIR addresses potential environmental impacts, including cumulative impacts, related to cultural resources and transportation and circulation, and determined that there were no

[126] CalFire, Fire Hazard Severity Zones in State Responsibility Map, Fire Hazard Severity Zones in State Responsibility Area (arcgis.com), accessed May 19, 2023.

[127] California Department of Forestry and Fire Protection, Fire Hazard Severity Zones Maps, *https://osfm.fire.ca.gov/divisions/wildfire-prevention-planning-engineering/wildland-hazards-building-codes/fire-hazard-severity-zones-maps/*, accessed July 22, 2019.

significant cumulative impacts. These topics, along with plans and policies, other CEQA topics, and alternatives, are evaluated in the draft EIR to which this initial study is appended.

This initial study and the Draft EIR together provide a comprehensive discussion of the potential for the project to cause substantial adverse effects on human beings, either directly or indirectly. As discussed in Section E.7, Noise, the proposed project would not have adverse effects on human beings with implementation of Public Works standard construction measures. As discussed in Section E.8, the proposed project would have less-than-significant impacts on human health due to air pollutant emissions, with implementation of Mitigation Measure M-AQ-3.

F. Public Notice and Comment

On May 31, 2023, the planning department mailed a Notice of Availability[128] of a Notice of Preparation of an Environmental Impact Report to property owners and tenants within 300 feet of the project site. The Planning Department also mailed and emailed the Notice of Availability to neighborhood groups in Potrero Hill and the Bayview as well as other citywide organizations who expressed interest in projects citywide.[129] In addition to physical mailings and e-mail notifications, the department physically posted 11-inch by 17-inch posters on each side of the Islais Creek Bridge, posted notices in SFMTA buses and light rail vehicles, and placed an advertisement in the San Francisco Examiner on May 31, 2023 to announce the opportunity for public input on the Islais Creek Bridge Project's environmental review.

The Planning Department received comments regarding:

- Seismic Hazards
- Biological resources
- Historic Resources
- Tribal Cultural Resources
- SFPUC Infrastructure in the Islais Creek channel
- Construction-related impacts to transportation, specifically to the T-Third Street light rail

Impacts related to seismic hazards are discussed in Section E.16, Geology and Soils. Impacts related to biological resources are discussed in Section E.15, Biological Resources. Impacts related to historic resources are discussed in draft EIR Section 4.B, Historic Architectural Resources. Impacts related to tribal cultural resources are discussed in Section E.5, Tribal Cultural Resources. Impacts related to SFPUC infrastructure in the Islais Creek channel are discussed in Section E.7, Noise. Construction-related impacts related to transportation are discussed in draft EIR Section 4.C, Transportation and Circulation.

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[128] Mailed notices were translated into multiple languages and included English, Chinese, Spanish, Filipino, and Vietnamese notices.

[129] The Planning Department maintains a list it uses to distribute planning project notifications to individuals and neighborhood groups that have expressed interest in receiving such notices. Individuals and organizations can register and obtain a complete list of registered neighborhood groups, along with their contact details at https://sfplanning.org/resource/neighborhood-group-organizations. The website contains a link to a neighborhood group notification form, which must be filled out and emailed to planningnews@sfgov.org. It takes approximately two to four weeks to start receiving notices.

G. Determination

On the basis of this Initial Study:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☒ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, no further environmental documentation is required.

_____

Lisa Gibson
Environmental Review Officer
for
Rich Hillis
Director of Planning

DATE_____

H. Initial Study Preparers

Planning Department, City and County of San Francisco
Environmental Planning Division
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San Francisco Planning

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628.652.7600
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MEMORANDUM TO FILE

Date:	July 5, 2023
To:	Elizabeth White, Senior Environmental Planner (628) 652-7557 elizabeth.white@sfgov.org
From:	Justin Greving, Senior Preservation Planner (628) 652-7553 Justin.Greving@sfgov.org
Reviewed by:	Allison Vanderslice (628) 652-7505 allison.vanderslice@sfgov.org
Re:	Historic Resource Status of Islais Creek Bridge (Levon Hagop Nishkian Bridge)
Case No.	2022-000112ENV

The purpose of this memo is to confirm the historic resource status of the Islais Creek Bridge (officially known as the Levon Hagop Nishkian Bridge, "bridge"), identify any historic resources that are immediately adjacent to the bridge, identify impacts to the bridge or adjacent historic resources caused by the proposed bridge project, as well as outline the relevant mitigation measures to reduce impacts to the identified historic resource.

PROPERTY DESCRIPTION

The project site is the Islais Creek Bridge (officially known as the Levon Hagop Nishkian Bridge, "bridge"), a built-up steel double-leaf bascule bridge constructed in 1950 on Third Street over the Islais Creek Channel in the Bayview neighborhood of San Francisco.

CEQA HISTORIC RESOURCES EVALUATION

ISLAIS CREEK BRIDGE

The Islais Creek Bridge was previously found to be eligible for listing in the National Register as a result of a survey and evaluation for the Third Street Light Rail project in 1997.[1] The bridge was found to be eligible under

[1] "Secretary of the Interior's Standards for the Treatment of Historic Properties Action Plan for Islais Creek Bridge Rehabilitation Project," prepared by JRP Historical Consulting, LLC, (October 2017), 5. Findings about the bridge's eligibility

Criterion C at the local level as an outstanding example of a Moderne style drawbridge. The period of significance for the Islais Creek Bridge is 1950 and reflects its date of completion. The bridge is automatically listed in the California Register based on the formal determination of eligibility for listing in the National Register and is therefore considered a historic resource for purposes of CEQA. Per the California Register Criteria the bridge is eligible under Criterion 3.

Integrity

The Islais Creek Bridge retains a moderate degree of integrity. Although the bridge saw some modifications since its completion in 1950 to accommodate Muni tracks in 2006, the modifications were determined to be in conformance with the Secretary's Standards and did not affect the bridge's character-defining features.

Character-defining features

The following is a list of character-defining features of the Islais Creek Bridge:

- bridge type (i.e., bascule type bridge with two spans and concrete abutments);
- above-deck detailing elements on top of, or associated with, the bascule leaves, including:
    - above-deck visible elements of riveted steel side and center box girders;
    - quarter-round and teardrop bascule girder housing units with Art Moderne styling;
    - steel sidewalk guardrails with Art Moderne styling, including the guardrails for the staircase leading to the abutment machinery pit entrance on southeast corner.
- steel hatch door on the east side of the south machinery pit;
- control tower location, design, and materials, including:
    - the oblong plan;
    - two-story (with basement) design;
    - concrete walls;
    - canted window configuration, size, and materials;
    - copper roofing with overhang;
    - walkway and handrails surrounding the top floor; and door locations and configurations.

ADJACENT HISTORIC RESOURCES

3201-3255 3rd Street

Northeast of the bridge along the east side of 3rd Street is 3201-3255 3rd Street (APN 4377/001), a one and two-story industrial building constructed in 1956 for the Reynolds Metals Company as an office and warehouse.[2] The building was surveyed as part of the Central Waterfront Cultural Resources Survey and was identified as being eligible for listing in the California Register under Criterion 1 for its association with industrial development in the Central Waterfront area on San Francisco, and under Criterion 3 as an example of a rare construction technique in which aluminum cladding is attached to a steel frame. Therefore, the building at 3201-3255 3rd Street is a historic resource for purposes of CEQA.

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for listing in the National and California Register, integrity, and character-defining features is based on this previous determination.

[2] "3201-3255 3rd Street" Department of Parks and Recreation form, update, prepared by Page & Turnbull, 11/8/2012.

3210-3240 3rd Street

Northwest of the bridge along the west side of 3rd Street is 3210-3240 3rd Street (APN 4378/006), a one-story industrial building constructed originally as the F.E. Book Company, Incorporated Plan, a sardine canning plant. The building was most recently surveyed in 2012 and identified as a contributor to the Central Waterfront/Third Street Industrial District.[3] Therefore, the building at 3210-3240 3rd Street is a historic resource for purposes of CEQA.

Fire Station No. 25

Fire Station No. 25 is located at 3305 3rd Street (APN 4502A/002), just south of the bridge on the east side of the street. Fire Station No. 25 was constructed in 1927. The Fire Station was most recently identified in the Waterfront Plan DEIR as a historic resource individual-eligible for listing in the National Register and listed in the California Register.[4] Therefore, Fire Station No. 25 is a historic resource for purposes of CEQA.

Auxiliary Water Supply System (AWSS) Historic District

San Francisco's Auxiliary Water Supply System (AWSS) Historic District is a discontinuous historic district composed of buildings, structures, and infrastructure features related to this redundant fire suppression system that was originally constructed between 1906-1913. The AWSS Historic District is eligible for listing in the California Register under Criterion 1 and 3 for its association with the post-1906 Earthquake and Fire reconstruction and engineering in San Francisco.[5] None of the nearby components of the AWSS are contributors to the AWSS Historic District.

PROJECT IMPACTS

Impacts to Islais Creek Bridge

Planning staff find that the proposed project will remove the majority of character-defining features of the Islais Creek Bridge such it would no longer convey its historic significance as an Moderne style drawbridge. The demolition will remove historic materials, features, and spaces that characterize the property and would result in physical destruction, damage or alteration such that the significance of the individual historical resource would be materially impaired. As such, staff finds that the proposed project would result in a significant and unavoidable impact to the Islais Creek Bridge.

Impacts to adjacent historic resources

Although there may be minor alterations to the public rights of way in front of some of the historic resources identified north and south of the Islais Creek Bridge, these would be mainly in the form of modest alterations to the street and sidewalk elevations and slopes in front of these properties. These changes to the sidewalk and roadway in front of 3201-3255 3rd Street, 3210-3240 3rd Street, and Fire Station No. 25, will be minimal and will not have a direct impact on the historic significance of these adjacent historic resources along 3rd Street. Therefore, there will be no indirect impacts to 3201-3255 3rd Street, 3210-3240 3rd Street, and Fire Station No. 25.

[3] "3240 3rd Street" Department of Parks and Recreation form, update, prepared by Page & Turnbull, 11/8/2012.

[4] Port of San Francisco Waterfront Plan DEIR, Appendix D: Waterfront Plan Historic Resources Inventory and Summary Report.

[5] "San Francisco Auxiliary Water Supply System" Department of Parks and Recreation form, prepared by ICF, June, 2018.

MITIGATION MEASURES

Because it is determined that the proposed project will cause a significant unavoidable impact to the Islais Creek Bridge, the Department requires the following Mitigation Measures to reduce impacts to the historic resource. Although these measures may reduce impacts to historic resources through the documentation of the affected property and presentation of the findings to the community, they will not reduce the impact to a less-than-significant-level. Only avoidance of substantial adverse changes would reduce impacts to less-than-significant levels.

Mitigation Measure 1: Islais Creek Bridge Documentation.

Mitigation Measure 2: Salvage Plan.

Mitigation Measure 3: Public Interpretive Plan.

Mitigation Measure 4: Community Memorial Event.

CONCLUSION

The project will result in a significant and unavoidable impact to the individual historic resource, the Islais Creek Bridge. Although the mitigation measures may reduce impacts to historic resources through the documentation of the affected property, salvage, and presentation of the findings to the community, they will not reduce the impact to a less-than-significant-level. Only avoidance of substantial adverse changes would reduce impacts to less-than-significant levels.

AECOM
2020 L Street
Sacramento, CA 95811
aecom.com

Project name:
Islais Creek Bridge Project

Project ref:
2022-000112ENV

To: Historic Preservation Commission

CC: Justin Greving, San Francisco Environmental Planning;

Chelsea Fordham, San Francisco Environmental Planning

Michael Kay, AECOM

From:
Chandra Miller, AECOM Architectural Historian

Date:
May 2023

Preservation Alternatives Memorandum – Islais Creek Bridge Project (2022-000112ENV)

Introduction

The San Francisco Planning Department and the Project Sponsor, San Francisco Public Works (Public Works), are requesting review and comment before the Historic Preservation Commission (HPC) regarding the proposed Preservation Alternative for the project at the Islais Creek Bridge (officially named the Levon Hagop Nishkian Bridge) along Third Street in the City and County of San Francisco (CCSF) (proposed project). The Planning Department is in the process of preparing an Initial Study and Draft Environmental Impact Report (EIR) to evaluate the related physical environmental effects of the proposed project.

This memorandum has been prepared to provide:

- a description of the Islais Creek Bridge and project objectives;
- information on the eligibility, integrity, and character-defining features of the bridge;
- a summary of the potential impacts to the historical resource by the proposed project;
- a description of how the Preservation Alternative was developed;
- the potential feasibility of the Preservation Alternative relative to the project objectives;
- and a description of alternatives that were considered but rejected.

Physical Description

The Islais Creek Bridge is a built-up steel double-leaf bascule bridge[1] constructed in 1949-50 on Third Street over the Islais Creek Channel (the channel) in the Bayview neighborhood of San Francisco (Figure 1). The bridge is approximately 1,700 feet east of Interstate 280, and approximately 3,300 feet west of San Francisco Bay (the bay). The bascule arms, which open to allow boats to pass on the channel, consist of riveted steel box girders

[1] A bascule is type of bridge with a pivoting section that is raised and lowered using counterweights typically used over waterways.

supporting an open grid steel grate roadway. There are three joints of the open grid steel deck where the bascule leaves separate during bridge operations. The bridge is approximately 100 feet wide and spans 114 feet over the channel which is a United States Coast Guard (USCG) regulated navigable waterway. Each leaf consists of three built-up steel box girders, with transverse floor beams, longitudinal stringers, and an open grid steel deck. Each leaf carries four lanes of traffic, two light rail transit tracks, and two cantilevered sidewalks. The leaves are supported by concrete abutments on either side of the channel. The bridge control tower, which houses the controls which the operator uses to raise and lower the leaves, is on the northeast side and immediately adjacent to the bridge. The control tower is a structure consisting of two elevated concrete floors, a basement level, and a steel/wood roof supported by steel pipe columns. The control room on the second floor of the control tower is surrounded by large plate glass windows canted slightly outward. A balcony with metal pipe railings surrounds the second-floor control room. The control tower foundation consists of concrete grade beams that are 3-feet wide by 1-foot-6-inches deep. The grade beams are supported by eight precast concrete piles that are 18-inches square.

As originally designed in 1949, the bridge carried only vehicular traffic and pedestrians. In 2007, the San Francisco Municipal Transportation Agency (SFMTA, or MUNI) retrofitted the bridge to carry two light rail tracks with overhead electric wires and poles to provide power to light rail vehicles. The two light rail tracks have a double “S” curve over the bridge to go around the existing center bascule crossing the three rail joints of the open grid steel deck where the bascule leaves separate during bridge operations. The retrofit added five 48 inch cast-in-steel-shell (CISS) piles at each abutment (Figure 2).

In 2013, following regular inspection, the bridge with control tower was given a National Bridge Inventory Rating of 20 out of 100 (“poor”), with its structural system scoring 0.[2]

[2] The National Bridge Inspection Standards are the standards established by the U.S. Secretary of Transportation over the safety inspections of highway bridges on public roads throughout the United States, following federal policy that periodic and thorough inspections of U.S. bridges are necessary to maintain safe bridge operation and prevent structural and functional failures and to allow bridge owners to make informed investment decisions as part of an asset management program (see *MAP-21*, Public Law 112-141, 126 Stat. 405).

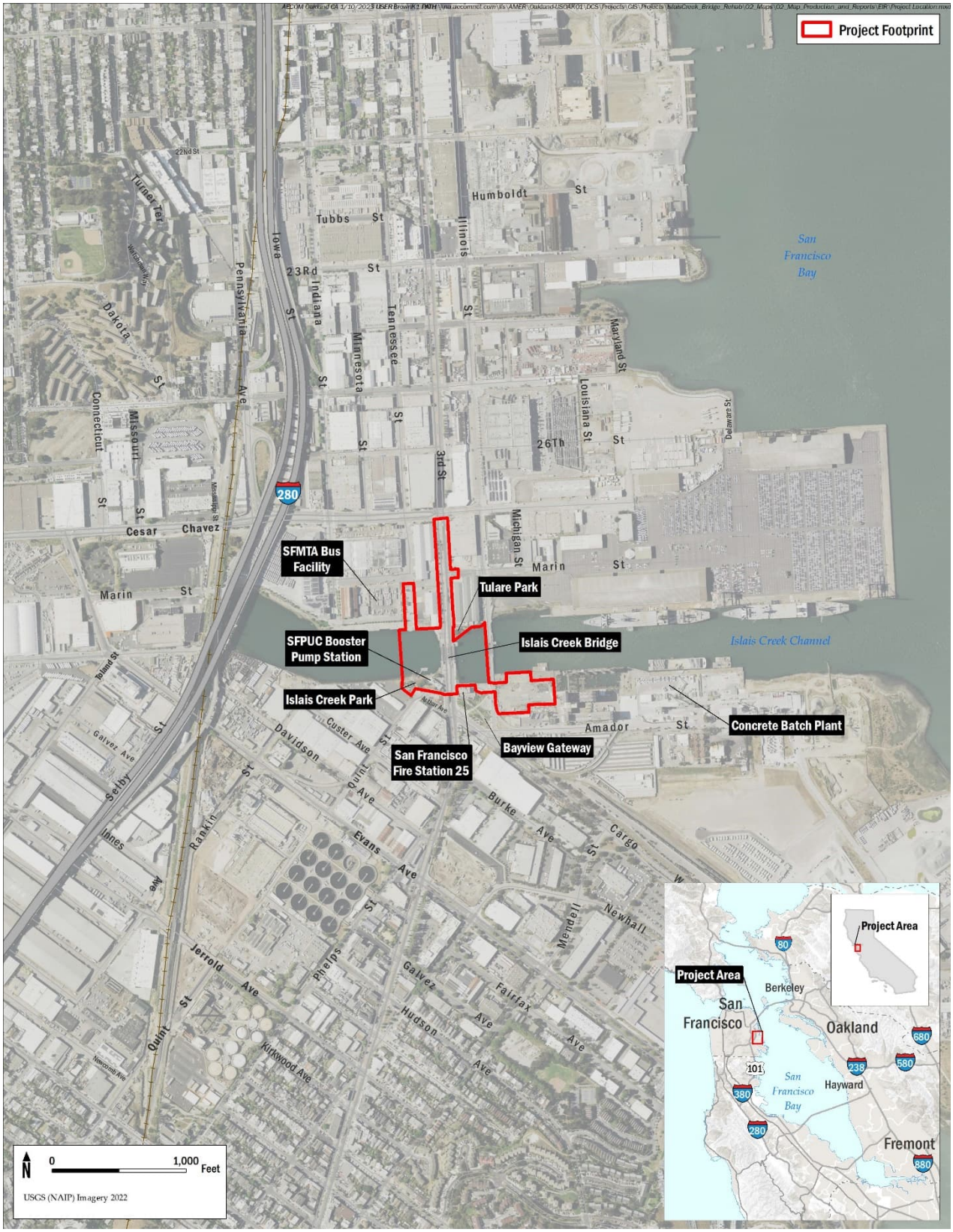


Figure 1. Project Location

Figure 2. Islais Creek Bridge East Elevation

Historical Significance

A California Department of Transportation (Caltrans) evaluation for historic significance in 2004 determined that the Islais Creek Bridge was eligible for listing in the National Register of Historic Places (National Register) at the local level of significance under Criterion C for its distinctive design qualities as an example of Art Moderne-style applied to a bridge. The State Historic Preservation Officer (SHPO) concurred with the finding of eligibility on December 7, 2005. The bridge's period of significance is 1950, its date of completion. Because the bridge was formally determined to be eligible for listing in the National Register it is automatically listed in the California Register of Historical Resources (California Register) under Criterion 3 and is therefore considered to be a historical resource for the purposes of the California Environmental Quality Act (CEQA).

Integrity

The bridge retains historic integrity to its period of significance, 1950, its date of completion. The integrity of the bridge was diminished with the alterations required for adding the light rail features in 2006; however, these constitute relatively minor changes to its overall integrity. The removal of two lanes of traffic, addition of rails, overhead wires, catenary poles, and barrier between the rails and automobile lanes have diminished the integrity of materials, design, workmanship, and feeling. However, the integrity of those aspects largely remain intact, as most of the bridge's character-defining features were not altered by that project. The bridge also retains integrity of location, setting, and association because it has not been moved, the bridge's surrounding built environment remains largely industrial in nature, and the bridge continues to be used as a bridge crossing Islais Creek.

Character-Defining Features

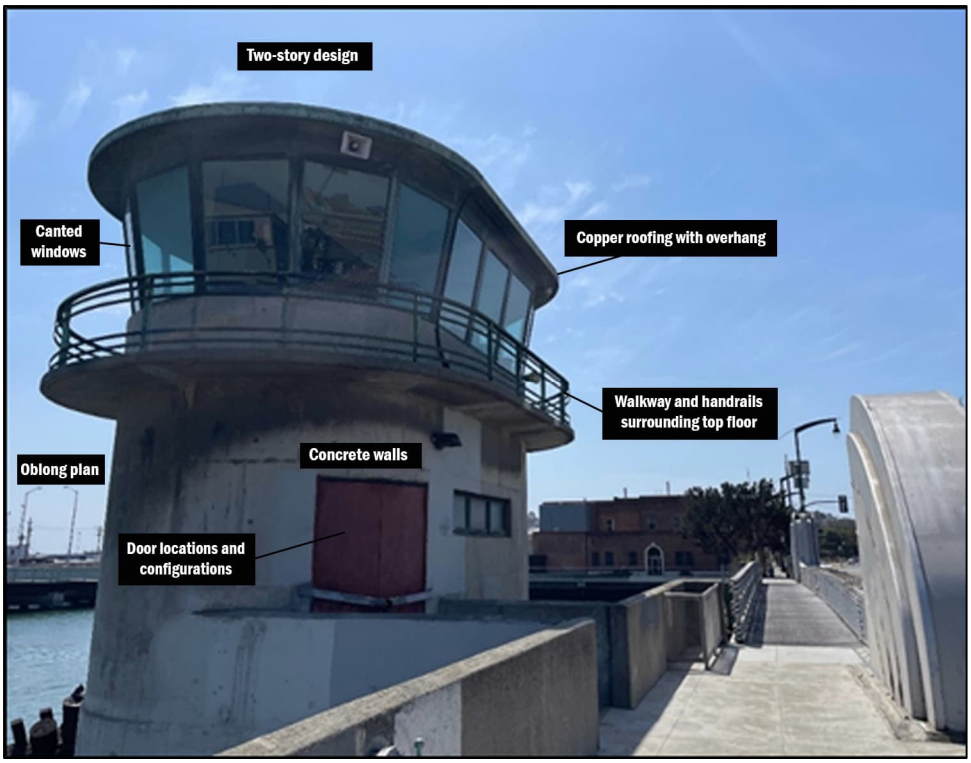
The character-defining features that make it eligible for the National and California Register under Criterion C/3 for its distinctive design qualities include the following (see Photographs 1-4):

- bridge type (i.e., bascule type bridge with two spans and concrete abutments);
- above-deck detailing elements on top of, or associated with, the bascule leaves, including:
  - above-deck visible elements of riveted steel side and center box girders;
  - quarter-round and teardrop bascule girder housing units with Art Moderne styling;
  - steel sidewalk guardrails with Art Moderne styling, including the guardrails for the staircase leading to the abutment machinery pit entrance on southeast corner.
- steel hatch door on the east side of the south machinery pit;
- control tower location, design, and materials, including:
  - the oblong plan;
  - two-story (with basement) design;
  - concrete walls;
  - canted window configuration, size, and materials;
  - copper roofing with overhang;
  - walkway and handrails surrounding the top floor; and
  - door locations and configurations.

Photograph 1. Above-deck character-defining features including quarter-round and teardrop girder housing units with Art Moderne styling and riveted steel center box girder, facing southeast

Photograph 2. Above-deck character-defining features including riveted steel side box girder and steel sidewalk guardrails with Art Moderne styling, facing south

Photograph 3. Character-defining steel staircase leading to abutment machinery pit and sidewalls of concrete abutments at southeast corner leading to steel hatch door, facing northwest



Photograph 4. Control tower character-defining features include the oblong plan, two-story design, concrete walls, canted windows, copper roofing with overhang, walkway and handrails surrounding top floor, and door locations and configurations, facing south

Project Description and Need

The proposed project would replace the existing bridge superstructure of the Islais Creek Bridge with a new bridge. The project area is very susceptible to seismic liquefaction and the condition of the bridge's structural system is poor. The bridge originally carried only vehicular traffic, but now additionally carries MUNI light-rail tracks. The deteriorated condition of the bridge makes the bridge deck susceptible to vibration induced by heavy vehicles, trucks, and light-rail vehicles crossing the span.

The areas surrounding Islais Creek are at risk of flooding from heavy rainfall events, coastal storm surge, and wave hazards, which will be exacerbated by sea-level rise and rising groundwater. The steel sections of the bridge are increasingly subject to the deleterious effects of corrosion and saltwater intrusion.

The proposed project would remove the existing drawbridge leaves, which have not been opened for navigation for over ten years, and all other drawbridge features. These will be replaced by a single-span concrete through-girder bridge[3] with a concrete deck at a higher elevation to improve freeboard[4] for flood flows and to accommodate sea-level rise (Figure 3).

In addition to dedicated light-rail-vehicle trackways and two 11-foot travel lanes in each direction, the bridge will support a 12-foot-wide pedestrian path on its eastern side and a 16-foot-wide Class I shared pedestrian/bicycle path on its western side (see Figures 4 and 5). The reconstructed trackway and roadway will be designed to convey surface runoff to the existing combined sewer/stormwater system. The control tower would be demolished down to the sidewalk level and the remaining portion will be used to create a public observation platform.

[3] A through girder bridge design is where the road deck is supported by the bottom flange of a girder and traffic travels between the supporting girders that project above the deck.
[4] Freeboard is the vertical clearance between the lowest bridge member and the existing channel water elevation.

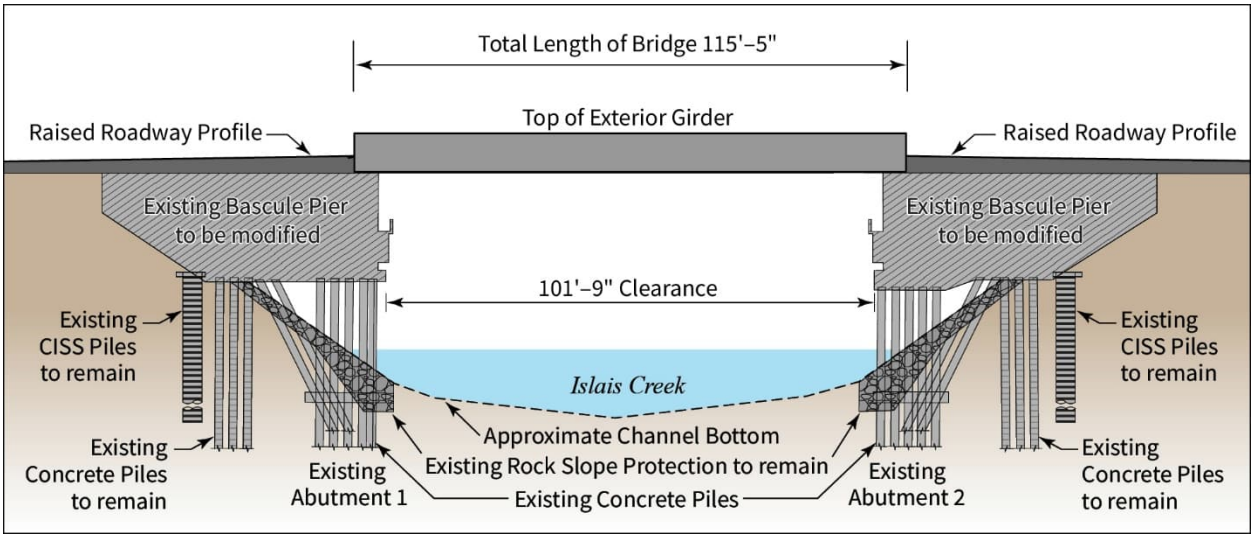


Figure 3. Proposed Through-Girder Bridge Longitudinal Section

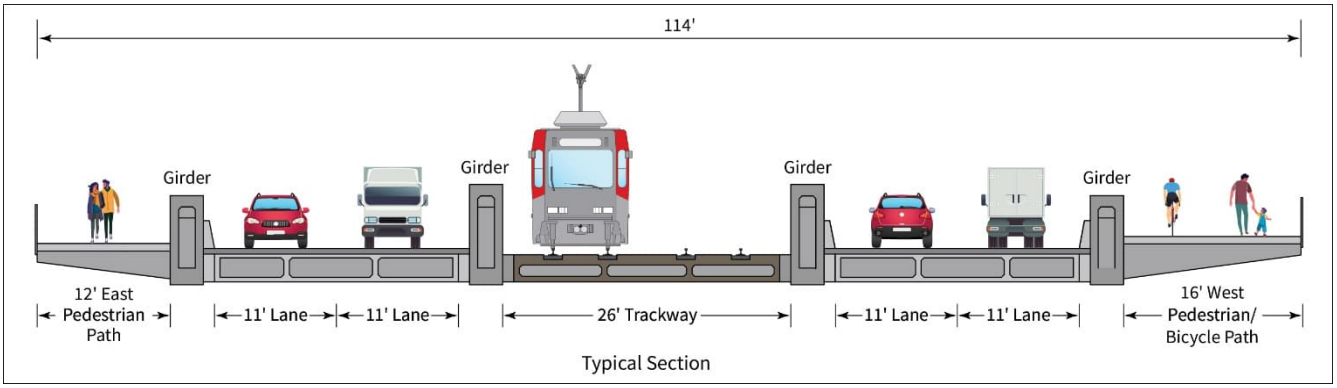


Figure 4. Proposed Through-Girder Bridge Cross Section

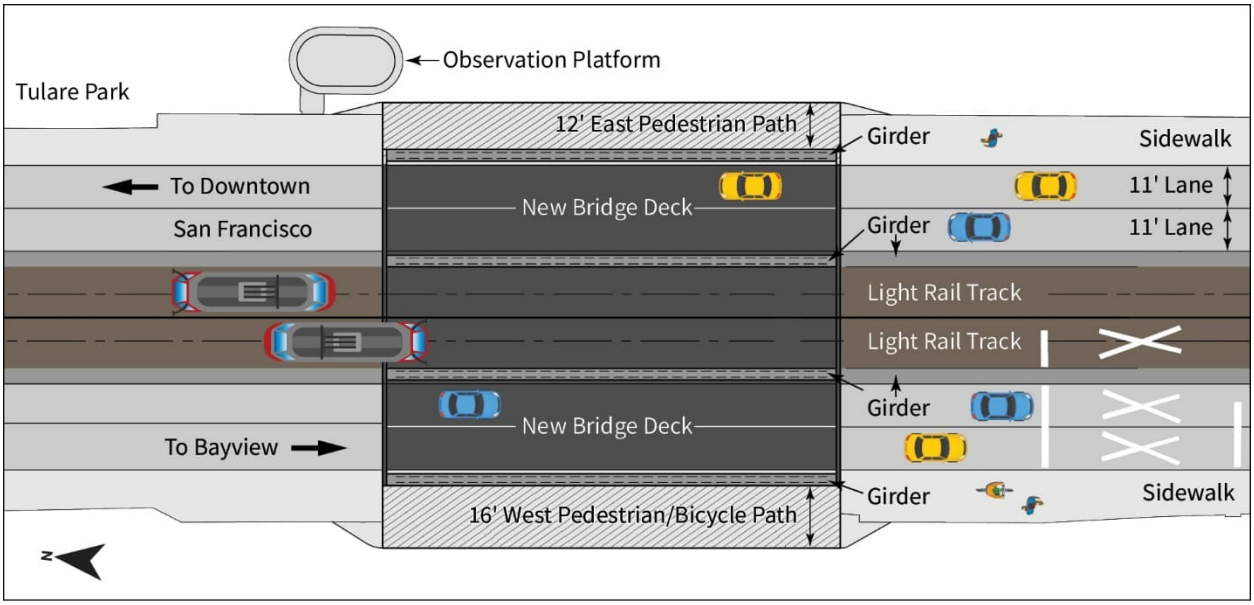


Figure 5. Proposed Through-Girder Bridge Plan View

The project's accommodation of a shared bicycle/pedestrian facility (Class I or Class IV) is based on advanced planning between the San Francisco Public Utilities Commission, Port of San Francisco, and the San Francisco Municipal Transportation Agency in response to opportunities presented by the removal of the bridge's drawbridge function per the City's *Islais Creek Southeast Mobility Adaptation Strategy*. Although not yet officially designated a bicycle facility, the Islais Creek Bridge and portion of Third Street connecting to Cargo Way will be adopted as part of the updated San Francisco Bicycle Network and citywide Active Communities Plan[5] that is currently under way and expected to be completed in 2024.

The structure would consist of four through-girders. As shown in Figure 4, through-girder refers to a bridge type in which girders protrude above the deck and traffic passes between them. The two exterior girders would support the combined pedestrian/bicycle path and half of the vehicle lanes, while the interior girders would support the other half of the vehicle lanes and the light rail trackway. Approximately 3 feet 9 inches of the overall girder depth would be below the deck surface, with 4 feet 9 inches (exterior, facing the sidewalks) and 5 feet 9 inches (interior, facing the roadway) above the deck surface. The portions of the girders above the deck surface would serve as barriers between the trackway, Third Street, and the pedestrian/bicycle paths.

Project Objectives

As the Project Sponsor, Public Works seeks to achieve the following objectives:

- Increase distance between the bridge's lowest point and existing channel's water elevation to the maximum extent practicable. This will extend the useful life of the bridge by improving the bridge's resilience to the impacts of sea-level rise, avoiding the current recurring submersion of the bridge underdeck and flooding of the machine rooms, and reducing the bridge's exposure to seawater and sustained moisture.

- Address the existing bridge's seismic deficiencies by replacing it with a new bridge that is seismically adequate.

- Minimize the project's construction times to the maximum practicable to reduce impacts to Bayview Hunters Point residents. The Bayview Hunters point neighborhood has substantially larger percentage of Black/African American and Latinx residents when compared to the San Francisco as a whole and the per capita income is less than half of the City average.[6] The road and trackway over the bridge provides a vital connection between the San Francisco's downtown and Mission Bay areas and Bayview Hunters Point, who would disproportionately experience transit delays and detours during project construction.

- Increase the serviceability of the bridge to improve multi-modal transportation safety and increase operational utility to Muni light rail operations.

- Maintain current geometric, construction, and structural standards required for the types and volume of projected traffic on the bridge over its design life to ensure continued access from the Bayview Hunters point neighborhood to the rest of the City and the region. This is intended to ensure that the bridge is operationally and structurally adequate, for its entire design life.[7]

- Provide a bicycle facility that can be incorporated into City bicycle route planning as part of the proposed project.

[5] SFMTA. Active Communities Plan. https://www.sfmta.com/projects/active-communities-plan
[6] San Francisco Neighborhoods Socio-Economic Profiles: American Community Survey 2012–2016. San Francisco Planning Department, September 2018.
[7] Design life is the period of time as intended by the bridge designers after which the bridge may need to be replaced.

Preservation Alternatives

This section describes the overall process the San Francisco Planning Department staff and Public Works (the project sponsor) took to develop the preservation alternatives for the proposed project.

Development of Preservation Alternatives

Alternatives were explored to identify strategies that would address the significant and unavoidable impact of the proposed project while still accomplishing most of the project objectives. In preparing the preservation alternatives, the Planning Department and Public Works explored several different approaches while considering the project objectives, character-defining features, and feasibility. Some of the design constraints discussed included the existing location and height of the control tower. Because the proposed project raises the height of the bridge and widens the sidewalk, it would affect the bridge's relationship and connection to the tower, which is a character-defining feature. Some early alternative explorations included cutting the tower at the basement level to relocate the tower onto the shore, or raising the tower to match the elevated height of the bridge, or demolishing and rebuilding the tower in the same location but at a higher elevation to match the new elevation of the bridge.

Another existing design constraint discussed included the current double “S” curve over the bridge to go around the existing center bascule. Currently, light-rail vehicles must slow considerably to safely pass through the horizontal alignment reverse curve at the approaches and across the three rail-joints of the open grid steel deck where the bascule leaves separate during bridge operations. The proposed replacement bridge has four girders, and to replicate the center girder including the rivetted steel center box girder and Art Modern-style teardrop bascule girder housing units, was considered in the development of alternatives. However, retention of a center girder would not increase operational utility to MUNI light rail operations because it would replicate the existing jog in the rail tracks that slows trains. Retention of an additional center girder, which would require a total of five girders, would also result in a thicker deck structure making the bridge more susceptible to sea level rise because the space between the bottom of the bridge and the channel water elevation would be reduced (also known as freeboard). Inclusion of a faux center girder would also require a wider bridge which may in turn require the narrowing of the proposed pedestrian/bicycle paths to conform to the bridge approaches. To avoid widening the bridge to accommodate a center girder, a three-girder bridge was considered. However, this design would require a thicker bridge deck to support the increased span between the girders. Again, a thicker bridge deck would reduce bridge freeboard compared to the proposed project and be more susceptible to sea level rise.

As described in more detail below under the Alternatives Considered and Rejected section, the planning department and project sponsor explored the feasibility of including rehabilitation of the existing bridge as an alternative. This rehabilitation alternative was determined to be infeasible for a number of reasons including the bridge’s susceptibility to sea level rise, the fact that the drawbridge function is no longer necessary, and inefficiency of Muni operations on the bridge, and is no longer under consideration.

Planning Department staff and Public Works ultimately identified two alternatives: a Preservation Alternative that meets most of the project objectives while still retaining the majority of the bridge’s character defining features, and a no project alternative that would include no demolition, construction, or any improvements to the Islais Creek Bridge. Both alternatives are described below.

Preservation Alternative- New Bridge and Retain Control Tower in Place

Under the Preservation Alternative, the bridge would be replaced at a higher elevation, the same as the proposed project, but would include salvage, rehabilitation, and reinstallation of as many of the character-defining features of the original bridge as feasible (Figures 6 and 7). For comparison purposes, Figures 8 and 9 depict the proposed project. If it is determined that any of the character-defining features are not salvageable for reinstallation, these elements would be replicated with substitute materials to recreate the historic appearance and reproduce historic paint colors and finishes based on physical evidence, per the Secretary of the Interior’s Standards for the Treatment of Historic Properties.

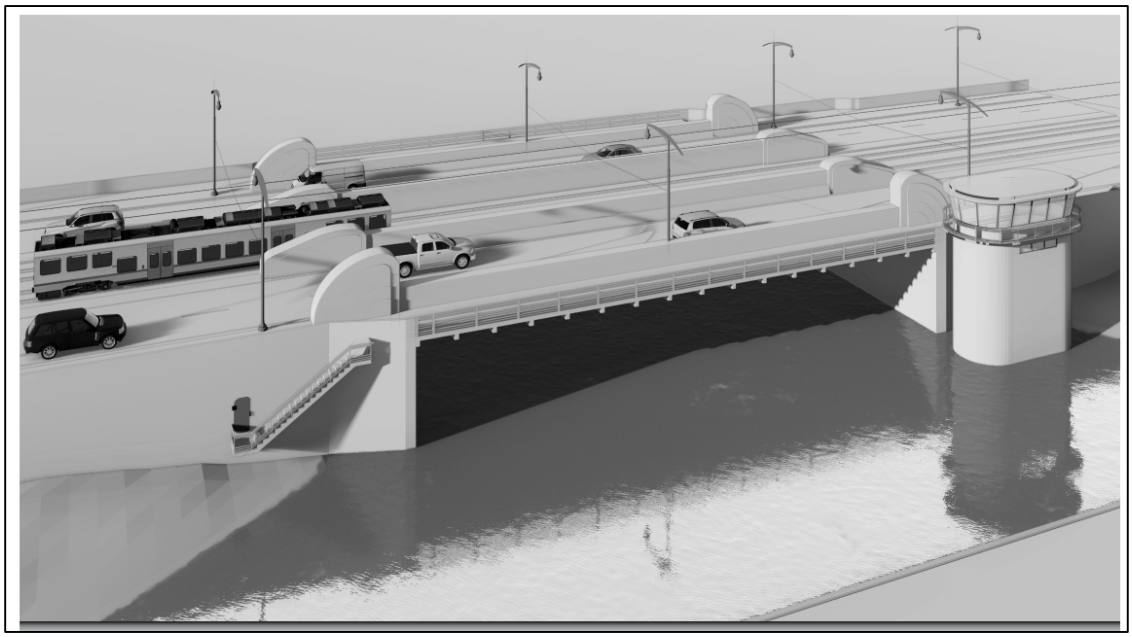


Figure 6. Oblique view of Preservation Alternative

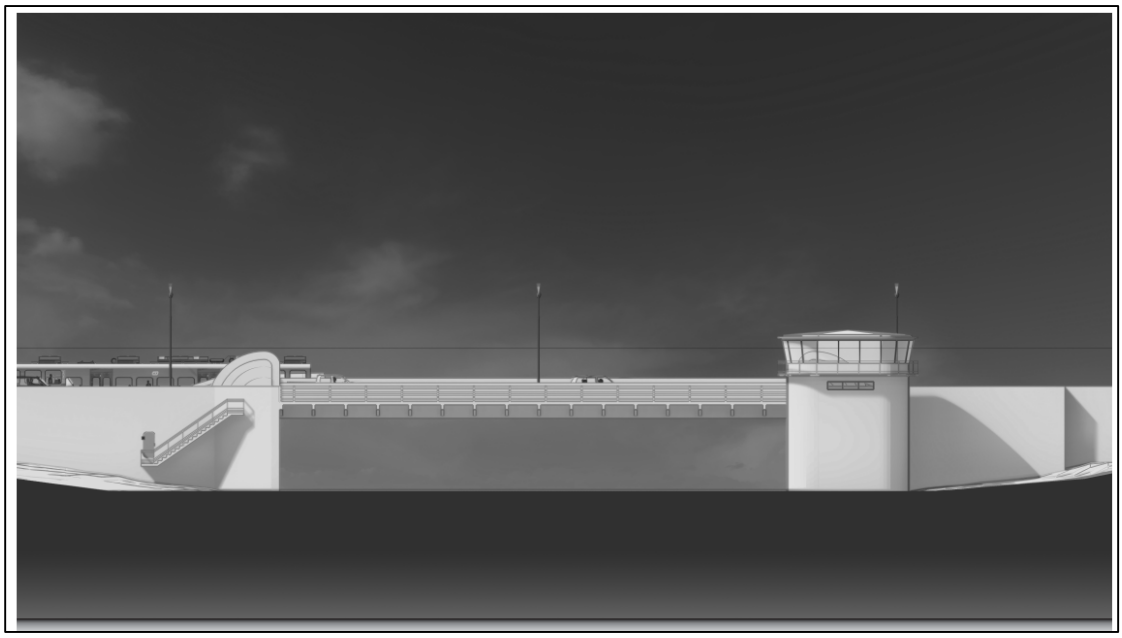


Figure 7. View of east elevation of Preservation Alternative

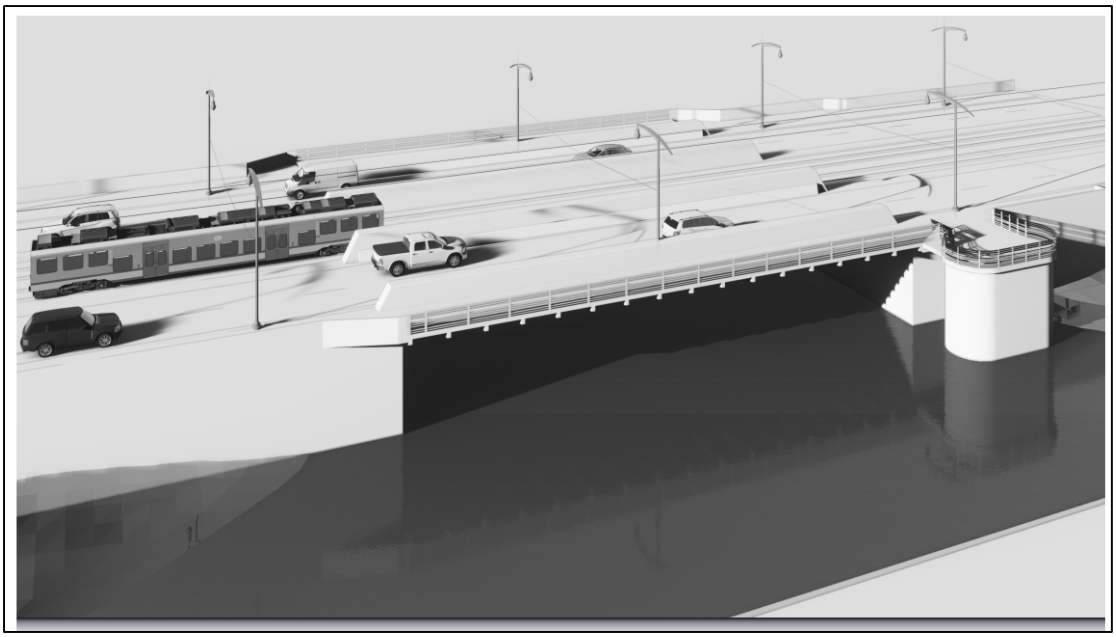


Figure 8. Oblique view of Proposed Project

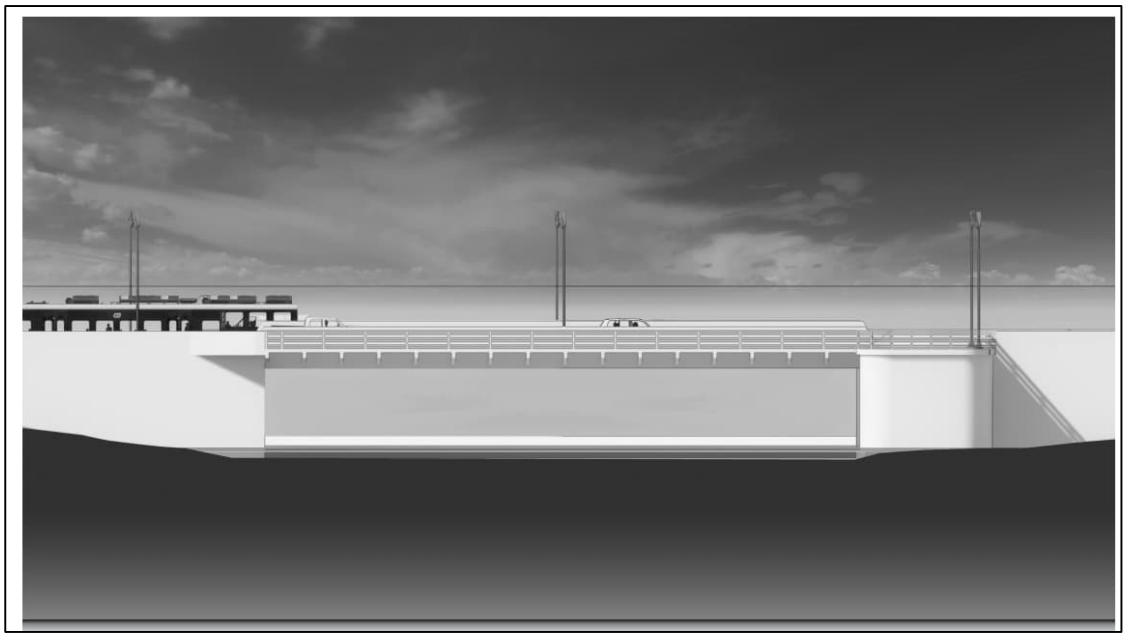


Figure 9. View of east elevation of Proposed Project

Under the Preservation Alternative, the Control Tower would be retained. As feasible structurally and economically, the control tower room with canted window configuration, copper roofing with overhang, walkway and handrails surrounding the top floor, door locations and configurations, and the electrical and mechanical equipment inside the control tower room would be retained. Spalled and damaged concrete would be repaired and window systems replaced as feasible. The extent of the retention of the tower features listed above is dependent on further condition assessments and economic analysis, which would be conducted once the full extent of structural deterioration of the tower and of the corresponding extent of repairs needed are known.[8]

[8] Foundation work is currently assumed to consist of adding four five-foot-diameter, in-water Cast in Drilled Hole (CIDH) piles to the four corners of the existing control tower foundation, and increasing the size of the grade beams.

Whether access into the tower can be maintained and the extent of retrofit needed to address the Americans with Disabilities Act to enable the rehabilitation of the tower would be included in this assessment. This retention would maintain the overall relationship of the bridge and the control tower by retaining its location, design, and materials as a character-defining feature; however, the bridge would be at a higher elevation.

The existing bridge sidewalks do not meet the Americans with Disabilities Act or City and County of San Francisco requirements because the sidewalks contain gaps and vertical displacements greater than requirements allow. The Preservation Alternative would provide a 12 foot-wide Class I pedestrian path on the eastern side of the bridge, and a 16 foot-wide Class I shared pedestrian/bicycle path on the western side of the bridge. Both paths would be cantilevered off the exterior girders and would include a pedestrian/bicycle railing. The 12-foot-wide Class I pedestrian path on the eastern side of the bridge would maintain its width and transition to the width of the approach walkway/path as it passes the retained tower. However, the distance between the face of the tower and the edge of the path would be about approximately 2.5 feet and because the walkway would be at approximately the same elevation as the new bridge deck, or about 4.5 feet up the door from the existing walkway surface, the existing access to the door into the tower would not be functional and the possibility of moving the access door will be considered in the conditions assessment discussed above. The existing Art Moderne-style sidewalk guardrails on the original bridge include horizontal gaps larger than allowed by current safety requirements, therefore, the sidewalk railings will be replaced with replicated railings meeting current gap opening requirements. These railings would be fabricated out of painted aluminum and will reproduce the finish of the existing railings based on physical evidence.

The existing Art Moderne-style quarter-round and teardrop bascule girder housing units would be removed from the bridge for salvage, rehabilitation, and reinstallation. Upon removal, inspection, and evaluation regarding the deterioration of materials and/or lead paint contamination, these elements would be assessed for reuse. Only if it is determined the elements are not salvageable for reinstallation, the elements would be replicated with substitute materials to recreate the historic appearance and reproduce historic paint colors and finishes based on physical evidence.

The concrete abutment of the original bridge would remain in place under this alternative. The doorway void behind the steel hatch door on the east side of the south machinery pit of the abutment would be infilled with concrete to prevent water intrusion and the steel hatch door would be re-installed.

The riveted steel side box girders would also be removed and replaced with four new concrete through-girders. Although the new girders are slightly wider and would rise higher above the bridge deck than the existing girders, their overall shape and details would be replicated so as to imitate the appearance of the original girders. Form liners would be used such that the new concrete girders would recreate the historic appearance of the riveted steel girders and historic paint colors and finishes would be used based on physical evidence, per the Secretary of the Interior’s Standards for the Treatment of Historic Properties.

The Preservation Alternative would meet most of the basic objectives of the proposed project while retaining some of the character-defining features, where feasible, and replication where necessitated by reasons of safety, operational functionality, and accessibility. While the Preservation Alternative would not retain the bascule bridge type, the above deck elements such as the riveted steel box girders with Art Moderne quarter-round and teardrop bascule girder housing units would be retained/replicated, the Art Moderne steel sidewalk and machinery pit guardrails would be replicated, the steel hatch door on the south machinery pit in the concrete abutment would be sealed and retained in place, and the control tower would remain in place though closer in relation to the bridge. Therefore, the Preservation Alternative reduces the impact on the bridge. Preservation measures such as salvaging original above-deck character-defining features for retention would require additional time to remove the elements from the bridge and work to rehabilitate the features for retention and re-use would require removal of lead paint, repair of any inadvertent damage to the features during removal with like and in-kind materials and finishes. In addition, for features that are determined to be unsalvageable for re-use and require replication, the process to fabricate these replicated features would also increase project construction time. Therefore, these measures as part of the Preservation Alternative would increase the total construction time beyond the proposed project, thus impacting residents with transit delays and detours for a longer time period. The Preservation Alternative would increase the elevation of the bridge from the existing channel to address sea level rise and

moisture issues, address the seismic deficiencies with a seismically adequate bridge, would increase the serviceability of the bridge to improve multi-modal transportation safety and increase operational utility to Muni light rail operations, and would maintain current geometric, construction, and structural standards required for the types and volume of projected traffic on the bridge over its design life to ensure continued access from the Bayview Hunters Point neighborhood to the rest of the City and the region. Overall, the Preservation Alternative partially meets the project objectives.

No Project Alternative

As required by CEQA, a no project alternative was also evaluated by the planning department and the project sponsor. The No Project Alternative would involve no demolition, construction, or any improvements to the Islais Creek Bridge; therefore, all of the character-defining features of the historical resource would be retained. However, the No Project Alternative would not meet the project objectives which generally revolve around reconstruction of the bridge to address safety, transportation, and climate change goals.

Retention of Character-defining Features

The following table compares the retention of character-defining features of Islais Creek Bridge in the proposed project and the two alternatives.

Character-Defining Features of Islais Creek Bridge	Proposed Project	No Project Alternative	Preservation Alternative
Bascule type bridge	Demolished	Retained	Demolished
Above deck element - Riveted steel center box girder	Demolished	Retained	Demolished. Original center girder will be replicated as two girders to flank light rail tracks along center of bridge
Above deck element - Riveted steel side box girders	Demolished	Retained	Replicated
Above deck element - Art Moderne quarter-round and teardrop bascule girder housing units	Demolished	Retained	Retained if feasible, Replicate if not. Replication of teardrop units for girder housing
Above deck element - Art Moderne steel sidewalk guardrails	Demolished	Retained	Replicated with modifications to meet current safety standards.
Steel hatch door on the east side of the south machinery pit	Demolished	Retained	Retained
Control tower design and materials	Demolished	Retained	Retained and Rehabilitated if feasible
Control tower location	Demolished	Retained	Retained but somewhat diminished with the increase in bridge deck width

Ability of Alternatives to Meet Project Objectives

The following table lists the objectives of the proposed project and whether the objective would be met in the proposed project, the No Project Alternative, or the Preservation Project. Overall, the preliminary assessment is that the Preservation Alternative meets the project objectives with the exception of reducing construction impacts.

Project Objectives	Proposed Project	No Project Alternative	Preservation Alternative
Increase bridge freeboard (i.e., the distance between the bridge's lowest point and existing channel's water elevation) to the maximum extent practicable.	Meets	Does Not Meet	Meets
Address the existing bridge's seismic deficiencies by replacing it with a new bridge that is seismically adequate.	Meets	Does Not Meet	Meets
Minimize the project's construction times to the maximum practicable to reduce impacts to Bayview Hunters Point residents.	Meets	N/A	Does Not Meet
Increase the serviceability of the bridge to improve multi-modal transportation safety and increase operational utility to Muni light rail operations.	Meets	Does Not Meet	Meets
Maintain current geometric, construction, and structural standards required for the types and volume of projected traffic on the bridge over its design life to ensure continued access to the City and the region.	Meets	Does Not Meet	Meets
Provide a bicycle facility that can be incorporated into City bicycle route planning as part of the proposed project.	Meets	Does Not Meet	Meets

Alternatives Considered but Rejected

Full Preservation Alternative - Bridge Rehabilitation

Public Works previously proposed a Full Preservation Alternative (the Islais Creek Bridge Rehabilitation – Federal Aid Project No. BHLO-5934(168) and Planning Department Case No. 2017-006843ENV). This project was developed through 65% design and obtained both NEPA and CEQA approvals; however, the project was paused for several months due to "significant increases in design cost and scope, ballooning construction cost estimates, and concern regarding unresolved coordination and constructability risks," (see attachment).[9] In addition, new information regarding sea-level rise at the site, budget constraints, and stakeholder interests resulted in a re-examination of the project objectives and functional need for continued drawbridge operability. Public Works concluded a fixed-span bridge "aligns better with the interests of the department and the City as a whole, addresses sea-level rise concerns, and would be more economical to construct to reduce future maintenance needs and costs."

The Full Preservation Alternative, where possible, would repair deteriorated features of the bridge rather than replace them. If the severity of the deterioration required replacement, new materials would match the original in design, color, texture, and materials, where possible, and would be substantiated by documentary and physical evidence. The bridge's design would remain largely unchanged, including the structure's movable leaves, its

[9] San Francisco Public Works. 2021. Memorandum re: Islais Creek Bridge Rehabilitation – Federal Aid Project No. BHLO-5934(168) Public Works Authorization to Change to a "Fixed-Span" Bridge Design. August 18.

machinery pit, and control tower. The Full Preservation Alternative would replace in-kind the bascule leaves, including the structural steel girders, transverse floor beams, and longitudinal stringers. The new bascule leaves would be fabricated with higher-grade steel and would match the original in dimensions and shape with button head or capped bolts that mimic the appearance of rivets on the existing structure. The structure would remain a bascule bridge, the movable leaves and open grate roadway deck would be replaced in kind, and the Art Moderne-style elements on top of the bridge would be rehabilitated in a manner consistent with the Secretary of the Interior's Standards.

The existing railings do not meet current safety and code requirements and cannot be repaired in a manner that does not substantially diminish the historic or structural integrity of the railings. The railing would be replaced with railings that are historically appropriate and retain their Art Moderne design. The new railings would match the existing to the extent possible.

The bridge's Art Moderne-style teardrop and quarter-round girder housings, which are attached to the abutment machinery pits, would be removed, and repaired or replaced in kind.

The Full Preservation Alternative would retrofit the control tower window system, control tower foundation, and repair spalled and damaged concrete on the control tower. Four, 5-foot Cast in Drilled Holed (CIDH) piles would be added to the four corners of the existing tower foundation and the existing grade beams would be increased in size to seismically retrofit the foundation. The new CIDH piles would need to be structurally connected in the east-west and north-south direction with a concrete infill wall to increase lateral strength. The bridge abutments would only require minor repairs for spalled concrete on the exterior of the abutments.

The Full Preservation Alternative also proposed to add alternative power feed, install vehicle and pedestrian safety gates, remove lead paint, and repaint the bridge.

Public Works evaluated the Full Preservation Alternative's design to determine if there was capacity to adapt to future sea level rise. The existing lowest point of entry to the counterweight pits at the girder slots of the Islais Creek bridge is currently at approximately 9.9 feet NAVD88, meaning that it is below the base floodplain elevation. The existing top of deck is at 15.7 feet. This means if the current deck configuration were maintained, the machinery pits and bottom of steel girders that support the deck would be submerged between 1.8 feet and 4.2 feet during flooding by 2075.

Islais Creek Bridge Charette

On February 10, 2022, a planning charette was conducted with representatives from several CCSF departments to discuss possible design options to increase the flood resilience of the Islais Creek Bridge Project.[10] The primary objective of the charette was to deepen the collective understanding of constraints, benefits, and opportunities of different bridge design concepts, and to better understand the needs and uses of the concepts relative to each CCSF department. As part of the charette, 22 different bridge configuration combinations were used to facilitate an initial screening process. The options were then narrowed to four options plus a "No Build" option for more detailed analysis. The options analyzed included construction of a new bascule bridge[11], construction of a new through girder bridge[12] at the same elevation of the existing bridge, construction of a new standard girder bridge[13] at a raised elevation and construction of a new through girder bridge at a higher elevation. The latter is the option that was advanced in the proposed project. The No Build option was deemed to pose an excessive safety risk and thus eliminated from the charette discussion. The rehabilitation of the existing bridge is described as the Full Preservation Alternative. The remaining three options carried forward for further analysis and discussion during the charrette, as well as the reasons these options were rejected, are described below. None of these options would avoid the removal of all the character-defining features of the bridge.

[10] CH2MHill/Arcadis. 2022. Memorandum. Islais Creek (Third Street) Bridge Charette. Prepared for Port of San Francisco. April 12.
[11] Bascule is type of bridge with a pivoting section that is raised and lowered using counterweights typically used over waterways.
[12] A through girder bridge design is where the road deck is supported by the bottom flange of a girder and traffic travels between the supporting girders that project above the deck. See Figure 4.
[13] A standard girder bridge design includes a road deck supported by two or more horizontal girders built upon piers or abutments that support the bridge span.

Option 1: New Bascule Bridge

Under this alternative, a new bascule bridge (with either operable or non-operable draw bridge functions) would be constructed to replace the existing bridge. The new bascule bridge would be constructed at the same elevation of the existing bridge and would include a center dedicated light rail trackway, two travel lanes in each direction, and a shared pedestrian/bicycle path on both sides of the bridge. The street work included in this alternative would be minimal and would include the abutments or approaches and street deck over the bascule pier on both sides of the bridge.

While replacing the bridge as is has potential schedule and budget benefits, it was eliminated from future consideration for reasons similar to the Rehabilitation Alternative. Because this alternative would be constructed at the same elevation as the existing bridge, it would not increase freeboard or the lifespan of the bridge relative to sea level rise. It would retain the same flood risk as the existing bridge despite being a new replacement bridge. The operable bridge option would be more vulnerable to flood risk due to the low elevation of the mechanical equipment. The seismic performance of this alternative is likely inferior to the fixed-bridge alternative. Therefore, this option has a higher risk of bridge closure after an earthquake, which would impede disaster response functions that require bridge throughput. This alternative would also have a higher construction cost due to the type and material of the bridge, as well as higher operations and maintenance cost under the operable bridge option. This increase in cost would be hard to justify when considering the alternative's inherent flood risk. The proposed project would better address additional City needs, including sea-level rise resilience.

In addition, the draw bridge was operated regularly for large ships to pass through the Islais Creek channel to access the copra cranes upstream of Third Street. That industry ceased operations in the mid-1970s after which there was no longer any maritime functions necessitating drawbridge access. Review of the past 10 years of logs from the Bridge Stationary Engineer indicate no requests for drawbridge lifts other than used for routine inspection of the drawbridge function itself.

Option 2: New Through-Girder Bridge, Same Elevation

This alternative would include the construction of a new through-girder bridge similar to the proposed project, but with the same length and elevation as the existing bridge. Similar to the proposed project, the new bridge would include a center dedicated light rail trackway, two travel lanes in each direction, and a shared pedestrian/bicycle path on both sides of the bridge. However, the new cross section of the bridge would allow for a wider roadway than the existing bridge. The street work for this alternative would include the abutment modifications to support the new girders at both sides of the bridge, as well as a haunch to support the additional width of the new cross section. While the bridge under this alternative would be constructed at the same elevation as the existing bridge, it would have a higher clearance due to the use of through girders.

While this alternative would increase freeboard and the lifespan of the bridge relative to sea level rise and increase the structural seismic resiliency and serviceability of the bridge, it was eliminated from future consideration because it would not increase bridge freeboard to the maximum extent feasible when compared to the proposed project.

Option 3: New Standard-Girder Bridge, Raised

This alternative would include the construction of a new standard-girder bridge at a higher elevation than the existing bridge. Similar to the proposed project, the new bridge would include a center dedicated two light rail trackway, two travel lanes in each direction, and a shared pedestrian/bicycle path on both sides of the bridge. However, the cross section of the proposed bridge would be wider than the existing bridge. The street work included in this alternative would include abutment modifications to support the new girders, and to strengthen the deck over the existing bascule pier to support the fill at both sides of the bridge. Because the bridge would be raised, the approaches would also need to be regraded.

While this alternative would increase freeboard and the lifespan of the bridge relative to sea level rise and increase the structural seismic resiliency and serviceability of the bridge, it was eliminated from future consideration because it would not increase bridge freeboard to the maximum extent practicable when compared to the proposed project.

Conclusion

A wide variety of alternatives were explored for the Islais Creek Bridge Project. The proposed project would remove all the character-defining features of the bridge; however, it would meet all of the project objects including addressing sea-level rise, structural and seismic deficiencies, increase the serviceability of the bridge to improve safety and operational facilities of light rail operations, among other objectives. The Preservation Alternative would retain or replicate the majority of bridge's character-defining features while meeting the majority of project objectives.

Attachments

San Francisco Public Works. 2021. Memorandum re: Islais Creek Bridge Rehabilitation – Federal Aid Project No. BHLO-5934(168) Public Works Authorization to Change to a "Fixed-Span" Bridge Design. August 18.

Public Works Standard Construction Measures

1. SEISMIC AND GEOTECHNICAL STUDIES: The project manager shall ensure that projects that may potentially be affected by existing soil, slope and/or geologic conditions at the project site will be screened for liquefaction, subsidence, landslide, fault displacement, and other geological hazards at the project site, and will be engineered and designed as necessary to minimize risks to safety and reliability due to such hazards. As necessary, geotechnical investigations will be performed.

2. AIR QUALITY: All projects will comply with the Construction Dust Control Ordinance (see Attachment A). Major construction projects that are estimated to require 20 or more days of cumulative days of work within the Air Pollutant Exposure Zone must comply with the additional clean construction requirements of the Clean Construction Ordinance (see Attachment B).

3. WATER QUALITY: All projects will implement erosion and sedimentation controls to be tailored to the project site, such as fiber rolls and/or gravel bags around stormdrain inlets, installation of silt fences, and other such measures sufficient to prevent discharges of sediment and other pollutants to storm drains and all surface waterways, such as San Francisco Bay, the Pacific Ocean, water supply reservoirs, wetlands, swales, and streams. As required based on project location and size, a Stormwater Control Plan (in most areas of San Francisco) or a Stormwater Pollution Prevention Plan (SWPPP) (in certain areas of San Francisco) will be prepared. If uncontaminated groundwater is encountered during excavation activities, it will be discharged in compliance with applicable water quality standards and discharge permit requirements. Groundwater contamination is addressed in item 6 below.

4. TRAFFIC: All projects will implement traffic control measures sufficient to maintain traffic and pedestrian circulation on streets affected by construction of the project. The measures will also, at a minimum, be consistent with the requirements of San Francisco Municipal Transportation Agency (SFMTA)'s Blue Book. Traffic control measures may include, but not be limited to, flaggers and/or construction warning signage of work ahead; scheduling truck trips during non-peak hours to the extent feasible; maintaining access to driveways, private roads, and off-street commercial loading facilities by using steel trench plates or other such method; and coordination with local emergency responders to maintain emergency access. Any temporary rerouting of transit vehicles or relocation of transit facilities would be coordinated with SFMTA Muni Operations.

5. NOISE: All projects will comply with local noise ordinances regulating construction noise. Public Works shall undertake measures to minimize noise disruption to nearby neighbors and sensitive receptors during construction. These efforts could include using best

available noise control technologies on equipment (i.e., mufflers, ducts, and acoustically attenuating shields), locating stationary noise sources (i.e., pumps and generators) away from sensitive receptors, erecting temporary noise barriers, and other such measures.

During nighttime construction activities, the following shall apply: impact tools and vibratory pile drivers shall have intake exhaust mufflers and/or acoustically attenuating shields or shrouds recommended by the manufacturers and approved by the Director of Public Works; the construction contractor shall avoid using water blasters; and the use of vehicles that are legally required to be equipped with backing warning alarms will be reduced to the extent feasible; and administrative controls as defined in the California Code of Regulations, Title 8 Sec. 1592 will be used for worker protection for backing movements by other vehicles. Hours of vibration-intensive activities, such as vibratory pile driving, shall be restricted to between 7:00 a.m. and 8:00 p.m.

6. HAZARDOUS MATERIALS: Projects that involve excavation of 50 cubic yards of soil in the Maher Z will comply with the Maher Ordinance (see Attachment C). Projects on sites that are not currently located in the Maher Zone but have the potential to contain hazardous materials in soil and/or groundwater will be referred to the Department of Public Health as newly identified Maher sites.

7. BIOLOGICAL RESOURCES: Public Works will comply with all local, State, and federal requirements for surveys, analysis, and protection of biological resources (e.g., Migratory Bird Treaty Act, Federal and State Endangered Species Acts, etc.). All project sites and the immediately surrounding area will be screened to determine whether biological resources may be affected by construction. If biological resources are present, a qualified biologist will carry out a survey of the project site to note the presence of general biological resources and to identify whether habitat for special-status species and/or migratory birds is present. If necessary, measures will be implemented to protect biological resources, such as installing wildlife exclusion fencing, establishing work buffer zones, installing bird deterrents, monitoring by a qualified biologist and other such measures. If tree removal is required, Public Works will comply with any applicable tree protection ordinance.

8. VISUAL AND AESTHETIC CONSIDERATIONS, PROJECT SITE: All project sites will be maintained in a clean and orderly state. Construction staging areas will be sited away from public view, and on currently paved or previously disturbed areas, where possible. Nighttime lighting will be directed away from residential areas and have shields to prevent light spillover effects. Upon project completion, project sites on City-owned lands will be returned to their general pre-project condition, including re-grading of the site and re-vegetation or re-paving of disturbed areas to the extent this is consistent with Public Works Bureau of Urban Forestry policy and San Francisco Code. Project sites on non-City land will be restored to their general

pre-project condition so that the owner may return them to their prior use, unless otherwise arranged with the property owner.

9. CULTURAL RESOURCES: All projects that will alter a building or structure, produce vibrations, or include soil disturbance[1] will be screened to assess whether cultural resources are or may be present and could be affected, as detailed below.

Archeological Resources. No archeological review is required for a project that will not entail soil disturbance. Projects involving soil disturbance will initially be screened by Public Works Regulatory Affairs staff to identify whether there is demonstrable evidence of prior soil disturbance at the project site to the maximum vertical and horizontal extent of the current project's planned disturbance. Public Works will complete the Public Works Preliminary Archeological Checklist (PAC), Part I only (see Attachment D). For projects where prior complete soil disturbance has occurred throughout areas of planned work, Public Works will provide evidence of the previous disturbance in the environmental application to be reviewed by EP Archeological staff.

1) For projects that are on previously undisturbed sites or where the depth/extent of prior soil disturbance cannot be documented, or where the planned project-related soil disturbance will extend beyond the depth/extent of prior soil disturbance, additional screening will be carried out as detailed below and shown on the flow chart titled "Public Works Standard Construction Measure #9 Archeological Assessment Process" (see Attachment E). The EP Archeologist will complete the Preliminary Archeological Checklist, Part II (PAC) for the project, which will include recommendations for one of three Standard Archeological Measures (I - Discovery, II – Monitoring, or III – Testing/Data Recovery) to be implemented by Public Works to protect and/or treat significant archeological resources identified as being present within the site and potentially affected by the project (see Attachments F, G, and H). Additional research and documentation, such an Archeological Research Design and Treatment Plan (ARDTP), Archeological Sensitivity Study (ASA), or an archeological field survey, may also be requested by the EP Archeologist. These documents should be completed by a qualified consultant from the EP Archeological Resources Consultant Pool and should by scoped, reviewed, and approved by the EP Archeologist.

2) Public Works shall implement the PAC recommendations prior to and/or during project construction consistent with Standard Archeological Measures I, II, and III, and shall consult with the EP Archeologist in selecting a qualified archeological consultant from

[1] **Soil is defined as native earthen deposits or introduced earthen fill. Soil does not include materials that were previously introduced as part of the roadway pavement section including asphalt concrete wearing surface, roadway base, and subbase.**

the EP Archeological Resources Consultant Pool, as needed, to implement these measures.

3) Soil-disturbing activities in archeologically sensitive areas, as identified through the above screening, will not begin until required preconstruction archeological measures of the PAC (e.g., preparation of an Archeological Monitoring Plan, Archeological Treatment Plan, and/or an Archeological Research Design and Data Recovery Plan) have been implemented.

Public Works, the EP Archeologist and the ERO will revisit the PAC process outlined above one year after these measures are finalized.

Historic (Built Environment) Resources. Public Works will consult with CCSF Planning Department Preservation staff to determine if projects that would modify an existing building, structure, or landscape feature require preservation review and if a Historic Resource Evaluation (HRE) will be required. The HRE will be prepared by a qualified architectural historian and will be scoped with CCSF Planning Department Preservation staff. Where the potential for the project to have adverse effects on an historical resource is identified by CCSF Planning Department Preservation staff, the CCSF Planning Department Preservation Planner will consult with Public Works to determine if the project can be conducted as planned or if the project design can be revised to avoid the significant impact. If these options are not feasible, the project will need to undergo further environmental review with the CCSF Planning Department and mitigation may be required. If so, the project would not qualify for a Categorical Exemption from CEQA review.

Within historic districts established by ordinance, and/or mapped by the San Francisco Planning Department as eligible for or on the California Register of Historic Resources and/or the National Register of Historic Places, all distinctive sidewalk elements such as brick surfacing, brick gutters, granite curbs, cobblestones and non-standard sidewalk scoring, and streetscape elements that may include, but are not limited to, streetlights, sidewalk lights, sidewalk elevators and chutes, benches, and utility plates, that appear to be 45 years or older will be treated as potentially character-defining features of their respective historic districts. For those locations, historic materials will be protected in place (preferred method), salvaged and re-installed, or replaced in-kind to match the existing color, texture, material, and character of the existing condition.

Where construction will take place in proximity to a building or structure identified as a significant historical resource but would not otherwise directly affect it, Public Works will implement protective measures, such as but not limited to, the erection of temporary construction barriers to ensure that inadvertent impacts to such buildings or structures are avoided. These measures shall require the development of a Construction Best Practices for

Historical Resources Plan and a plan outlining the Construction Monitoring for Historical Resources Program to be reviewed and approved by CCSF Planning Department Preservation staff.

If a project includes or is directly adjacent to historic buildings or structures susceptible to vibration (such as but not limited to unreinforced masonry, earthen construction, lathe and plaster, or fragile architectural ornamentation) as determined in consultation with CCSF Planning Department Preservation staff, Public Works will determine if vibrations associated with proposed construction activities has the potential to cause damage to such buildings or structures. Generally, vibration below 0.12 inches per second peak particle velocity does not have the potential to damage sensitive buildings or structures. A vibration study may be necessary to determine if such vibration levels will occur. If Public Works determines in consultation with CCSF Planning Department Preservation staff that vibration damage may occur, Public Works will engage a qualified historic architect or historic preservation professional to document and photograph the pre-construction condition of the building and prepare a plan for monitoring the building during construction. The monitoring plan will be submitted to and approved by CCSF Planning Department Preservation Planner prior to the beginning of construction and will be implemented during construction. The monitoring plan will identify how often monitoring will occur, who will undertake the monitoring, reporting requirements on vibration levels, reporting requirements on damage to adjacent historical resources during construction, reporting procedures to follow if such damage occurs, and the scope of the preconstruction survey and post-construction conditions assessment.

If any damage to a historic building or structure occurs, Public Works will modify activities to minimize further vibration. If any damage occurs, the building will be repaired following the Secretary of the Interior's Standards for the Treatment of Historic Properties under the guidance of a qualified historic architect or historic preservation professional in consultation with CCSF Department Preservation Planner.

cc: Lisa Gibson, Environmental Review Officer, San Francisco Planning Department

ATTACHMENTS

A. Construction Dust Measures
B. Clean Construction Measures
C. Maher Compliance
D. Public Works Preliminary Archeological Checklist (PAC)

E. Flow Chart: Public Works Standard Construction Measure #9 Archeological Assessment Process
F. Public Works Archeological Measure I (Archeological Discovery)
G. Public Works Archeological Measure II (Archeological Monitoring)
H. Public Works Archeological Measure III (Archeological Testing/Data Recovery)