AECOM

Updated Phase I Initial Site Assessment

Design and Environmental Services for Islais Creek Bridge Rehabilitation Project – 3rd Street
San Francisco, San Francisco County, California – Caltrans Br. No. 34C0024

Federal-Aid Project Number: BHLO-5934(168)

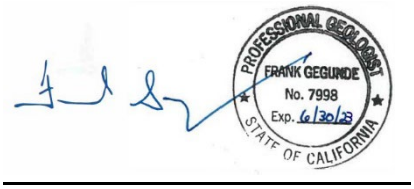
San Francisco Public Works

Project number: 60526895.06.04.01.03

May 6, 2022
Rev 1: June 9, 2022
Rev 2 April 13, 2023

Delivering a better world

Quality information

Prepared by	Reviewed by	Verified by	Approved by
Wanda L. Farmer			
Wanda L. Farmer, REM Environmental Scientist	Frank Gegunde, P.G.		

Revision History

Revision	Revision date	Details	Authorized	Name	Position
May 6, 2022	May 26, 2022	Updated		Peter DeStefano	Project Manager
June 9, 2022v1	June 9, 2022	Version 1		Wanda Farmer	EP
April 13, 2023	April 13, 2023	Version 2		Michael Kay	Project Manager

Distribution List

# Hard Copies	PDF Required	Association / Company Name

Prepared for:

San Francisco Public Works
1155 Market Street
San Francisco, CA 94103

Prepared by:

Wanda L. Farmer, REM
Environmental Scientist

AECOM
300 Lakeside Drive
Suite 400
Oakland, CA 94612
aecom.com

Table of Contents

Tables

Figures

Appendices

Acronyms and Abbreviations

Agreement	San Francisco Public Works/AECOM agreement dated Dec. 2, 2022
AAI	All Appropriate Inquiries
APN	Assessor's Parcel Number
AST	aboveground storage tank
ASTM	American Society of Testing and Materials
Caltrans	California Department of Transportation
Cal-WET	California Waste Extraction Test
CCR	California Code of Regulations
CFR	Code of Federal Regulations
CREC	controlled recognized environmental condition
EDR	Environmental Data Resources, Inc.
HREC	historical recognized environmental condition
kg	kilogram(s)
LQG	large-quantity generator
LUST	leaking underground storage tank
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
pCi/L	picoCuries per liter
RCRA	Resource Conservation and Recovery Act
REC	recognized environmental condition
RWQCB	Regional Water Quality Control Board
Project Site	Islais Creek Bridge located at 3rd Street and Islais Creek in San Francisco, San Francisco County, California
SEMS-Archive	Superfund Enterprise Management System Archive
SFMTA	San Francisco Municipal Transportation Authority
SFPW	San Francisco Public Works (client)
TPH-d	total petroleum hydrocarbons as diesel
THP-g	total petroleum hydrocarbons as gasoline
TPH-mo	total petroleum hydrocarbons as motor oil
USEPA	U.S. Environmental Protection Agency
UST	underground storage tank
VOC	volatile organic compound

Executive Summary

This report presents the results of an Updated Initial Site Assessment (ISA) conducted in March 2017, performed by AECOM for San Francisco Public Work – Design and Environmental Services for Islais Creek Bridge Rehabilitation Project, located on 3rd Street and Islais Creek, San Francisco, San Francisco County, California (Project Site). AECOM understands the ISA is being performed prior to the Islais Creek Bridge rehabilitation and/or replacement for SFPW and Caltrans. The Project Site is situated along 3rd Street and crosses over Islais Creek (**Figure 1**). No Assessor's Parcel Number is associated with the Project Site because it is in a public bridge. This ISA was performed in accordance with the *Caltrans Preparation Guidelines for Initial Site Assessment Checklist for Hazardous Waste* (**Appendix A**), and the American Society for Testing and Materials (ASTM) *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*, and The United States Environmental Protection Agency's standard for All Appropriate Inquiries, Title 40, Part 312, of the Code of Federal Regulations.

AECOM performed the ISA in general conformance with the scope and limitations of ASTM Standard E 1527-13. Any exceptions to or deletions from this standard are described in Chapter 1.0, "Introduction," of this report. This ISA evaluated potential environmental liabilities resulting from past or current land uses.

In summary, this ISA revealed the following:

- The Project Site is a bascule-type drawbridge (Islais Creek Bridge) with four lanes of traffic that run north to south along 3rd Street and cross over the Islais Creek Channel. The bridge has two lanes for each direction of traffic, with two sets of San Francisco Municipal Transportation Agency line tracks running down the middle, and an operations tower on the northeastern side of the bridge. The current bascule-type drawbridge was designed in 1945 and built in 1950. A bridge has crossed over the Islais Creek Channel since at least 1886, according to the Sanborn Maps.

- According to AECOM's review of the U.S. Geological Survey topographic map, the elevation of Islais Creek is at sea level. The bridge crossing the creek and the surrounding area is approximately 10 to 18 feet above sea level. Area topography has an overall gradual slope east toward San Francisco Bay. Local groundwater flow direction beneath the Project Area may vary, but is inferred to follow the general topographic gradient, east toward San Francisco Bay. The shoreline has changed from 1886 to 1940s. Urban fill has been brought in to extend the shoreline on either side of Islais Creek Channel toward San Francisco Bay.

- Based on the review of these historical aerial photographs, the surrounding area has been developed for industrial use from at least 1938 to the present.

- According to the historical information (1851 map of San Francisco [SFSD History online-https://sfplanninggis.org/pim/?pub=true]) and the proximity of the Project Site to the historic waterfront, it is likely that the Project Site has a certain degree of Bay fill material. These fill materials usually contain brick, gravel, concrete, wood, coal, and other rubble, as well as rubble from the 1906 earthquake.

- According to the City and County of San Francisco (CCSF) Assessor's online Geographic Information System (GIS) map, the Project Site is in the Maher Ordinance area. According to the Maher Program, properties with potential subsurface chemical contamination that require a grading or building permit may be regulated under the San Francisco Maher Ordinance: Article 22A of the San Francisco Health Code, and Article 106A.3.4.2 of the San Francisco Building Code. The Maher Ordinance covers areas with current or historical industrial use or zoning; areas within 100 feet of current or historical underground tanks; filled former Bay, marsh, or creek areas; and areas within 150 feet of a current or former elevated highway.

- Additionally, according to the CCSF Assessor's online GIS map, the Project Site is in the Seismic Hazard Zone named Liquefaction. The Seismic Hazard-Liquefaction area is usually found in fill-formed Bay.
- Searches were conducted of the EDR database, the State Water Resources Control Board's online database GeoTracker, and the Department of Toxic Substances Control's online database EnviroStor for facilities on federal and state site lists. The results of these searches were reviewed for information on whether hazardous substances, wastes, or petroleum products have been improperly handled, stored, or disposed of in the Project Area and adjacent properties. The following five sites were identified as potential off-site historic Recognized Environmental Conditions (HRECs) for the Islais Creek Bridge Project Area:
    - Fire Station #25 – 3305 3rd Street, 191 feet from the bridge. The potential contaminant for this site is total petroleum hydrocarbons as diesel (TPH-d) from a leaking underground storage tank (LUST).
    - Piers 92 and 94 – Central Concrete Plant and Supply and Martin Marietta Marine Aggregates – Cargo Way and Amador Street, 1,400 feet from the bridge. The potential contaminant for this site is hazardous waste materials of oil/water separation sludge, unspecified oil containing waste, unspecified solvent mixtures, waste oil, mixed oil, latex waste, unspecified organic liquid mixture, and sulfur sludge.
    - Open Top Sight-Seeing – 3240 3rd Street, 394 feet from the bridge. The potential contaminant for this site is TPH-d as diesel.
    - India Basin Car Wash – 3433 3rd Street, 605 feet from the bridge. The potential contaminant for this site is TPH-g from an LUST.
    - Loomis Armored, Inc. – 1060 Marin Street, 612 feet from the bridge. The potential contaminant for this site is TPH-d as diesel from an LUST.
- All five historical RECs have a status of Case Closed. 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 is currently an open remediation case. These properties are considered to have hazardous materials present and may represent contamination risks to the Project Site. This property is considered a Recognized Environmental Condition (REC).
    - Pier 90 Port of San Francisco (former Exxon Mobil bulk oil facility) – Cargo Way, 1,800 feet from the bridge. The potential contaminant for this site is total petroleum hydrocarbons as gasoline (TPH-g), TPH-d, or TPH as motor oil (TPH-mo); and arsenic, lead, copper, nickel, and zinc from bulk storage tanks.
- The fill that was brought in to extend the shoreline toward San Francisco Bay is typically debris fill from historical events in San Francisco. This fill is known to contain contaminants such as lead, naturally occurring asbestos, TPH-g, TPH-d, or TPH-mo, heavy metals, polychlorinated biphenyls, organochlorine pesticides, and polyaromatic hydrocarbons.

Based on the above-described database and records review, no RECs, controlled RECs, or historical RECs were identified in connection with the Project Site regarding database and records review.

Based on the previous industrial activities in the Project Site's surrounding areas and likely presence of Bay fill material (which likely contains 1906 earthquake debris) in the area, two RECs were identified in connection with the Project Site:

- **Impacts from Former Surrounding Sites Operations:** After a review of the historical sources, the Project Site and surrounding area has operated as an industrial area with maritime ports since the early 1900s. The industrial activities in this area included maritime wharfs, bulk petroleum tank

farms and fuel loading wharf, aluminum plant, gas stations, fire station, cement and materials plant, automotive repair, automotive body shops, warehouses, and railroad lines and spurs. The former presence of these industrial activities with documented on-site impacts from past and present operations in the Project Site's area, combined with the lack of information on cleanup activities or spills at the nearby facilities, is considered an REC.

- **Earthquake Debris:** As previously noted, the Project Site is likely to have a certain degree of Bay fill. The fill underlying the Project Site likely contains 1906 earthquake debris and has the potential to be impacted with lead and other contaminants. AECOM considers the presence of Bay fill and earthquake debris to be an REC.

1. Introduction

AECOM was retained by San Francisco Public Works (SFPW) – Design and Environmental Services for Islais Creek Bridge Rehabilitation Project, located on 3rd Street and Islais Creek, San Francisco, San Francisco County, California (Project Site). AECOM understands that the SFPW intends to rehabilitate and/or replace the Islais Creek Bridge. This Updated Initial Site Assessment (ISA) conducted in March 2017 was performed in general conformance with the scope and limitations of the following: 1) the California Department of Transportation (Caltrans) Initial Site Assessment Specifications; 2) American Society for Testing and Materials (ASTM) Standard Practice E1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process;* and 3) The United States Environmental Protection Agency's (USEPA) standard for All Appropriate Inquiries (AAI), Title 40, Part 312, of the Code of Federal Regulations (CFR). In this document, hazardous substances and petroleum products are referred to jointly as "hazardous materials."

This report has been prepared for use solely by SFPW and Caltrans and shall not be relied on by or transferred to any other party, or used for any other purpose, without the express written authorization of AECOM.

1.1 Purpose

The purpose of this ISA is to provide a professional opinion about the potential for the presence of recognized environmental conditions (RECs) at the Project Site, including potential impacts from known environmental concerns in the surrounding area. The term "recognized environmental condition," as defined by ASTM Standard E 1527-13 (ASTM 2013), means:

> The presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment.

A historical REC (HREC) is defined as:

> A past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority, without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls).

A controlled REC (CREC) is defined as:

> A recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by issuance of a No Further Action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls).

1.2 Project Description

San Francisco Public Works (SFPW) is proposing to replace the superstructure of the Islais Creek Bridge (Bridge No. 34C0024) (officially named the Levon Hagop Nishkian Bridge) along Third Street in the City and County of San Francisco (CCSF). The bridge is approximately 1,700 feet east of Interstate 280, and approximately 3,300 feet west of San Francisco Bay (the Bay). The bridge spans the Islais Creek Channel, a dredged, channelized, tidal embayment with predominantly armored shorelines that extends from the Bay to the site of the former outfall of the now culverted and buried Islais Creek.

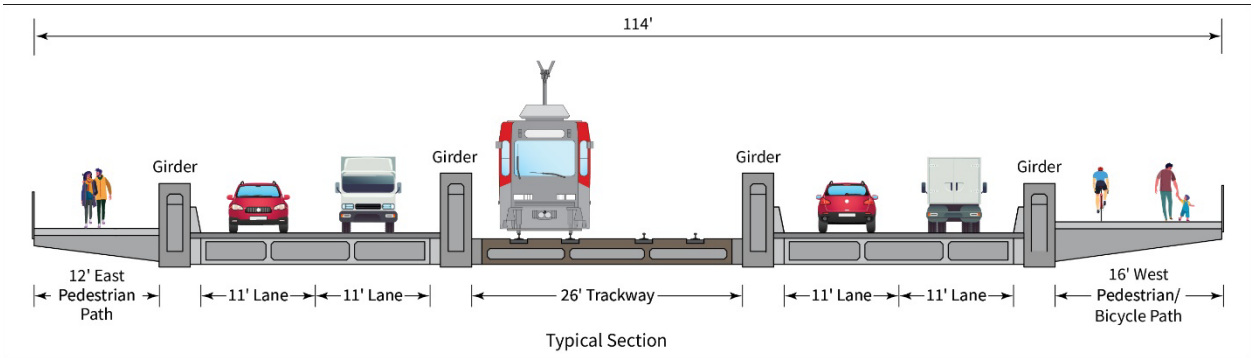
The existing bridge is a double-leaf bascule structure (drawbridge) constructed in 1949 with an open steel-grate roadway draining to the bay, and concrete abutments. It is approximately 114 feet long and 100 feet wide. A California Department of Transportation evaluation in 2004 determined that the bridge was significant as an example of Art Moderne style applied to a 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-levels rise and rising groundwater. The steel sections of the bridge are increasingly subject to the deleterious effects of corrosion and saltwater intrusion.

The Standard Project Alternative will 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 with a concrete deck at a higher elevation to improve freeboard for flood flows and to accommodate sea-level rise.

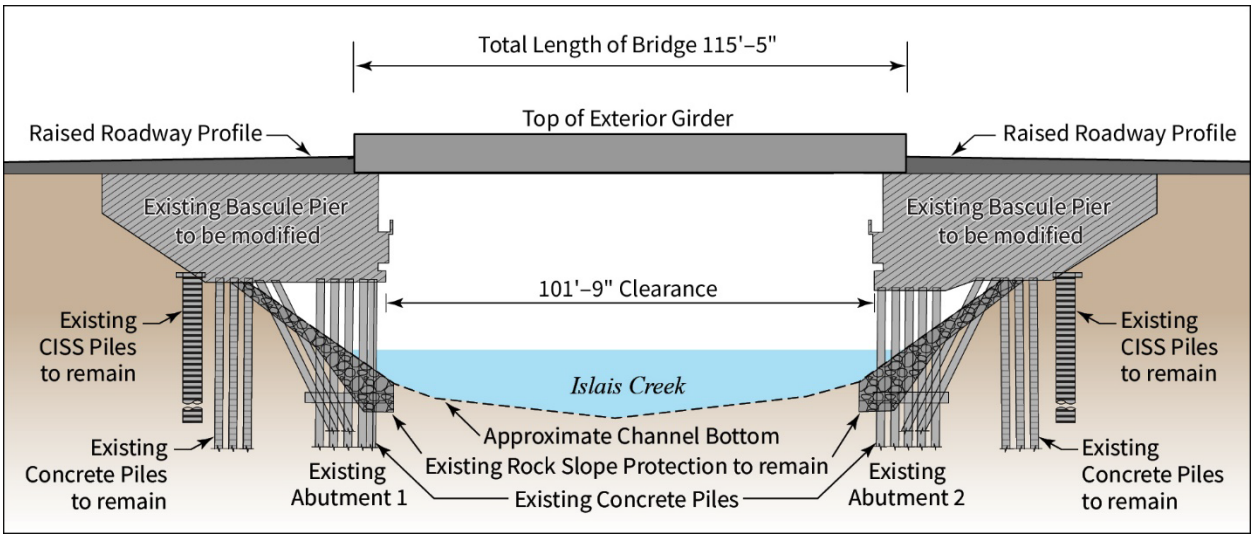
Proposed Bridge Cross Section



Typical Section

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. The reconstructed trackway and roadway will be designed to convey surface runoff to the existing combined sewer/stormwater system. The control tower will be demolished down to the sidewalk level and the remaining portion will be used to create a public observation platform.

Proposed Bridge Longitudinal Section



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 transportation plan that is currently under way and expected to be completed in 2024.

Besides the **Standard** project alternative described above, there are two other alternatives under consideration.

Under the project's **No Build Alternative**, no modifications will be made to the Islais Creek Bridge; only routine maintenance will be performed. Deterioration will continue to be addressed through short-term remedies but existing bridge structural and seismic deficiencies will remain and worsen. There will be no increase in bridge freeboard, so flood risks to the bridge and light-rail operations will remain and will increase with sea-level rise.

The **Partial Preservation Alternative** includes the project features described above for the Proposed Project, but will include salvage, rehabilitation, and reinstallation of as many of the historic character-defining features of the original bridge as feasible. If it is determined that for reasons of safety, construction standards, or sound engineering practice any of the character-defining features are not salvageable for reinstallation, these elements will be replicated with substitute materials to recreate the historic appearance. The Control Tower will be retained, its foundation and window system retrofitted, and its damaged concrete repaired.

A more extensive description of the project and its alternatives is available in the project's Environmental Assessment.

Construction will last 24 months and is assumed to begin no sooner than spring 2025. Bridge closure is expected to last the duration of construction. Detours that will route traffic to arterials that have capacity for the additional vehicles will be established to re-route traffic around the construction site. Detour routes will be developed during final design. The City of San Francisco will develop plans for substitute forms of transit to provide a comparable level of service during construction. The most probable replacement for disrupted light-rail service is a temporary bus service. Construction is anticipated to use typical eight-hour work shifts during daylight hours; nighttime and weekend construction is not anticipated. In addition to staging areas on the bridge approaches and on anchored barges, three potential off-site construction

staging area options owned by the Port of San Francisco that are currently used for Port-related industrial purposes have been identified.

1.3 Scope of Work

During this ISA, AECOM performed the following:

- contacted Environmental Data Resources, Inc. (EDR) to request a regulatory database search of known underground storage tanks (USTs), landfills, hazardous waste generation/treatment/storage/ disposal facilities, and subsurface contamination in the surrounding area and within specified radii of the Project Site;
- reviewed geologic maps and literature from the EDR Historical Topographic Map Report for information about the physical and topographic settings of the Project Site;
- researched the Project Site history by (a) reviewing aerial photographs covering the Project Site and adjoining property; (b) reviewing topographic maps; and (c) researching the availability of fire insurance maps and city directories of the Project Site and vicinity;
- contacted pertinent local regulatory agencies for information about Project Site usage and history, and reviewed the provided information;
- conducted a reconnaissance of the Project Site and the immediately surrounding area for obvious evidence of potential contamination, such as current hazardous materials storage or use, unusually stained soils/slabs/pavements, drains/sumps/drums/tanks/electrical transformers, stressed vegetation, discarded hazardous materials containers, and non-ATSM standard issues such as wetlands, lead-based paint, mold, and potential asbestos containing materials; and
- evaluated the information collected and prepared in this document, which summarizes the findings, opinions, and conclusions.

AECOM's scope of work did not include any other activities not expressly described in the agreement between SFPW and AECOM, dated December 3. 2022 (Agreement).

1.4 Time

The passage of time may result in changes in technology, economic conditions, site variations, or regulatory provisions that can render this report inaccurate. Reliance on this report after the date of issuance as an accurate representation of current site conditions will be at the user's sole risk.

1.5 Data Gaps

During this Phase I ISA, data gaps of 5 years or more were identified in the historical documentation; however, these data gaps are not considered to be significant. No other data gaps were identified.

1.6 Conclusions/Limitations

In conducting this due diligence investigation, AECOM has attempted to independently assess the presence of such problems within the limits of the established scope of work as described in the Agreement.

As with any due diligence evaluation, a certain degree of dependence exists on oral information provided by site representatives that is not readily verifiable through visual observations or supported by any available written documentation. AECOM will not be held responsible for conditions or consequences arising from relevant facts that were not fully disclosed during interviews with key personnel at the time this assessment was performed. In addition, the findings in the report are subject to certain conditions and assumptions. The conditions and assumptions are noted in the report, and any party reviewing the findings of the report must carefully review and consider all such conditions and assumptions.

This report and all field data and notes were gathered and/or prepared by AECOM in accordance with the agreed scope of work. The statements, conclusions, and opinions contained in this report are intended to give only approximations of the environmental conditions at the Project Site. This report has been prepared pursuant to the Agreement between the SFPW and AECOM. This report was prepared for the exclusive use of the SFPW and Caltrans. No other party is entitled to rely on the conclusions, observations, specifications, or data contained herein without first obtaining AECOM's written consent and provided any such party signs an AECOM-generated Reliance Letter. A third party's signing of the AECOM Reliance Letter and AECOM's written consent are conditions precedent to any additional use of, or reliance on this report.

2. Property Description

2.1 Site Location

The Project Site is 300 linear feet of bridge on 3rd Street, crossing over Islais Creek Channel. It is approximately 3 miles south of the San Francisco – Oakland Bay Bridge on the west side of the San Francisco Bay. No County Assessor's Parcel Number (APN) exists for the Project Site because it is a public bridge. **Figure 1** shows the general location of the Project Site.

2.2 Site Description

The Project Site is a bascule-type drawbridge (Islais Creek Bridge) with four lanes of traffic running north to south along 3rd Street and crossing Islais Creek Channel. The bridge has two lanes for each direction of traffic, with two sets of San Francisco Municipal Transportation Authority (SFMTA) line tracks running down the middle, and an operations tower on the northeastern side of the bridge. Photographs of the site features are provided in **Appendix B**.

2.3 Adjacent and Surrounding Land Uses

Adjacent and surrounding land uses generally are commercial, industrial, and marine piers. The Project Site is bordered by the following:

- North: industrial warehouses containing mixed-use businesses, Davidson Garage Auto Repair, PDX Productions, Delta Detailing Shop, Mobile Fleet Solutions, Tulare Park, and 3rd Street.
- East: Islais Creek Channel with the Illinois Street Bridge crossing over the creek. Pier 80 with rail spurs, warehouses, and material storage, and CEMEX San Francisco Pier 90/92 concrete plant.
- South: San Francisco Fire Station #25, Islais Creek Park, mixed-use warehouses, and commercial development.
- West: Islais Creek Channel, mixed-use warehouses (Mygrant Glass, Cycon Office Systems, Golden Gate Furniture), parking lots, and Islais Creek Municipal facility (government offices)/SFPW Booster Pump Station with outfall into Islais Creek.

The Project Site is in a well-developed metropolitan area with a long history of industrial and commercial properties, some of which have documented on-site chemical impacts from past site operations. Chapter 4.0, "Historical Documentation," and Chapter 5.0, "Environmental Records Research," discuss the specific sites that may pose environmental concerns for the Project Site.

2.4 Physical Setting

2.4.1 Topography

According to AECOM's review of the U.S. Geological Survey 7.5-minute series topographic maps for the San Francisco South, Oakland West, Hunters Point, and San Francisco North map Quadrangles (USGS 2018), the elevation of the Project Site is approximately 18 feet above mean sea level, and its topography is relatively flat. The topography of the Project Site is consistent with regional topography. The general topographic gradient is east.

2.4.2 Geology

Subsurface. The Project Site is situated along the western margin of San Francisco Bay, which occupies a major structural depression between the San Francisco Peninsula to the west and the East Bay hills to the east. Regional geology includes a series of continental and marine sediments overlying bedrock, which is exposed in the surrounding highlands to the west and consists of Jurassic and Cretaceous Franciscan Complex rocks and Pliocene marine sediments. Local geology consists of a series of Holocene epoch Quaternary alluvium (Brabb, Graymer, and Jones 1998). Geologic sub-units consist of the following:

- 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 San Francisco 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.

Surface. The Natural Resources Conservation Service 2015 soil survey shows the Project Site to be mapped as urban land (USDA 2022), and the surrounding soils are mapped as water and urban land. The soils are classified as clayey and have a high-water table and poorly drained soils with very slow infiltration rates.

2.4.3 Hydrology and Hydrogeology

Surface water. According to the CalWater Watershed Program, the Project Site is in the San Mateo Bayside – South Bay (204.40) Hydrologic Region, Islais Creek Sub-Region (DWR 2022). The Islais Creek Sub-Region covers 3.5 miles that run from Glen Canyon to the San Francisco Bay. The annual precipitation is 22.9 inches, with more rain in the winter months in San Francisco. Land use in the watershed is primarily urban centers, which includes the neighborhoods of Bernal Heights, Hunters Point, Visitacion Valley, parts of the Mission, and Potrero Hills. The Project Site sits on the western side of San Francisco Bay.

Groundwater. The Project Site lies in the Islais Valley (2-033) groundwater basin and subbasin (Ramirez-Herrera et al. 2006 and DWR 2022). Site-specific groundwater data were not available. Watershed groundwater data are available in the *2020 Annual Groundwater Monitoring Report Westside Basin San Francisco and San Mateo Counties, Ca by San Francisco Public Utilities Commission* (SFPUC 2021). The Islais Valley groundwater basin is composed of stream-deposited sediment (alluvium), historical tidal marsh, and mudflats. The majority is now covered with pavement and rooftops and is diverted to the City's combined sewer system. A database search revealed a potable water source well within 0.25 mile of the Project Site. The present-day drainage system outfalls to Islais Creek. According to a groundwater monitoring report for a nearby leaking underground cleanup site, depth to groundwater was measured between 8 and 9.5 feet below ground surface in 2008, and the calculated flow direction was east/southeast (Fugro West, Inc. 2008).

2.4.4 Wells

Water. The EDR Radius Map Report identifies eight water wells within 1 mile of the Project Site (**Appendix C**). These wells do not appear to be associated with the Project Site. No on-site wells were identified in the EDR Radius Map Report or during the site inspection.

Oil and gas. According to the California Division of Oil, Gas, and Geothermal Resources website, no exploratory wells have been mapped on or within 1 mile of the Project Site (DOGGR 2022).

2.4.5 Federal Emergency Management Agency Flood Zone Information

According to Federal Emergency Management Agency information (Map Panel 06081C0035E) in the EDR Radius Map Report, the Project Site is in a 100-year and a 500-year flood zone (**Appendix C**).

2.4.6 Wetlands

No evidence of wetlands was identified on or adjacent to the Project Site. According to the EDR Radius Map Report, the shoreline on either side of the northern side of the bridge is State Wetlands, and the entire Islais Creek Channel is mapped as National Wetland according to the EDR database report. (**Appendix C**).

2.5 Radon

According to USEPA, San Francisco County is in Radon Zone 2, indicating that the average predicted indoor screening level for radon is greater than 2.0 picoCuries per liter (pCi/L), and less than 4.0 pCi/L of air. USEPA's Recommended Action Level for radon in residential dwellings is 4.0 pCi/L. USEPA has not designated a Recommended Action Level for radon in commercial or industrial buildings. The EDR Radius Map Report (**Appendix C**) identified 83 radon tests conducted in San Francisco County postal code 94124, and zero of the laboratory results from the tests were above 4.0 pCi/L. Because the Project Site is in Zone 2, radon is not considered to be a significant concern. No additional radon evaluation has been conducted.

3. Historical Documentation

3.1 Records Reviewed

AECOM reviewed the following historical documents, provided by EDR, to assess the history of the previous uses or occupancies of the Project Site and surrounding area. The EDR historical documentation includes aerial photographs, topographic maps, building permit reports, city directory abstracts, and Sanborn® fire insurance maps. Copies of these documents are provided in **Appendix D**.

- Aerial photographs dated 1938, 1943, 1946, 1956, 1958,1963, 1968, 1974, 1982, 1987, 1993, 1998, 2005, 2009, 2012, and 2016. The aerial photographs are of varying sizes and clarity.
- Topographic maps dated 1899, 1915, 1939, 1947/1949, 1950, 1956/1959, 1968, 1973, 1980, 1995, 1996, 2012, 2015, and 2018. The topographic maps have varying scales.
- Abstracts of information from various city directories, dating from 1910 through 2017, in approximately 3- to 5-year intervals.
- Sanborn® fire insurance maps dated 1886, 1900, 1914, 1950, 1966, 1975, 1987, 1989, 1991, and 1999.

3.2 History of the Project Site and Surrounding Areas

City Directories. The Project Site was not listed in any of the directories searched, because the Project Site is a drawbridge along 3rd Street and not a parcel of land. Surrounding properties listed in the city directories included Firehouse Engine 25, India Basin Car Wash and Service Station, Islais Creek Scales, Pier 90, Port of San Francisco Grain Terminal Inc., Mobil Oil Company area sales and terminal, Barret Larry Truck and Auto Service gas station, Reynolds Aluminum Supply Co. manufacturers, Shell Oil Co. (tanks), Fairbanks Service Station, F.E. Booth Co Inc. (plant), Islais Tug Boat Co., warehouses, restaurants, moving companies, and auto wreckers to the north and south along 3rd Street.

Table 1 summarizes the observations made during AECOM's review of the aerial photographs, topographic maps, and Sanborn® maps provided by EDR.

Table 1 Historical Use of the Project Site and Adjacent Properties

Date	Type of Document	Description	Level of Concern
1890s–1930s	Aerial photographs, topographic maps, and Sanborn® maps	**Project Site:** undeveloped until 1938. A bridge is visible in the 1938 aerial and 1939 topographic map, although it is not the current bridge. The bridge is not shown on the Sanborn maps.	Low
		Adjacent Properties: Developed with wharfs, warehouses, slaughterhouse, saloons, hotels, and a blacksmith shop to the south of the Project Site in the Sanborn maps. Railroad tracks are depicted to the west of the Project Site on the topographic map. The 1938 aerial photograph indicates adjacent barges, lumber storage, and warehouses with aboveground storage tanks (tank farms) to the north and south of the Islais Creek Channel. Large ships are visible along Islais Creek to the east of the Project Site. Third Avenue is depicted crossing over Islais Creek Channel, running north to south.	Low–moderate
		The area shown as Butcher Town is shown directly south of the Project Site; Kentucky Road stretches outward north and south from Islais Creek Channel (1914 Sanborn Map).	
1930s–1950	Aerial photographs, topographic maps, and Sanborn® maps	**Project Site:** Appears to be developed as a drawbridge crossing over the Islais Creek Channel.	Low
		Adjacent Properties: Wharfs are visible to the west and east along the Islais Creek Channel with a large grain warehouse to the southeast, lumber yard storage and rail yard to the northeast, large ships to the west, and warehouses and storage yard to the northwest. Further north and north/northwest are oil and gas tank farms with large warehouses. Further southeast are two additional oil and gas tank farms.	Low-moderate
		Fill has been used to extend the northeastern and southeastern shoreline towards the San Francisco Bay.	
1950–1970	Aerial photographs, topographic maps, and Sanborn® maps	**Project Site:** Is developed as a drawbridge crossing over the Islais Creek Channel.	Low
		Adjacent Properties: Warehouses have increased in size and number along Islais Creek Channel. Wharfs and large ships are visible to the west and east of the Project Site. Mobil Oil Co. is depicted to the southeast, motor freight to southwest, Reynolds Aluminum Supply Co. and Shell Oil Co. loading wharf to the northeast, and general packing and crating warehouses to the northwest (Sanborn 1975).	Moderate-High

Date	Type of Document	Description	Level of Concern
1970–2010	Aerial photographs, topographic maps, and Sanborn® maps	**Project Site:** A steel drawbridge crossing over the Islais Creek Channel. **Adjacent Properties:** Properties to the north, west, east, and southwest are primarily unchanged. Shell Oil Co. pump house and loading wharf is still to the east of the Project Site. However, the oil tank farm to the north of the Reynolds Aluminum warehouse is no longer visible. The large grain warehouse to the southeast is no longer depicted. This area is now container storage, maritime cranes, warehouses, and tall buildings. Two oil tank farms are to the southeast and the northwest along the western wharf.	Low Moderate-high
2010–Present	Aerial photographs, topographic maps	**Project Site:** A steel drawbridge crossing over the Islais Creek Channel. **Adjacent Properties:** Another bridge across Islais Creek Channel has been built to the east of the Project Site. The oil tank farms to the northwest and north are no longer visible. No ships are visible in the channel, and the wharfs to the west appear to be not in use. Several barges are visible along the eastern wharfs. The southeastern maritime port appears to be vacant and not in use. Small docks are visible to the west and east of the bridges. Warehouses, laydown yards, and railroad tracks are still visible to the northwest, north, and northeast, southwest, south, and southeast.	Low Moderate-high

Source: Data compiled by AECOM in April 2022

4. Environmental Records Research

4.1 EDR Search Results

EDR was retained to provide the radius environmental database report for this ISA (**Appendix C**). 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 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 goal of reviewing the database report was to identify facilities with known and documented environmental concerns that may negatively affect the proposed project construction.

The EDR report identified a total of 337 cases within the study area. Locations of the properties are shown on the map in the EDR Radius Report (**Appendix C**). Note that many properties may be occupied by multiple facilities or have changes in ownership or listing name for the same property. In addition, some properties are listed in multiple databases.

Table 2 summarizes the types of cases listed on federal, state, and/or local databases as presented in the EDR Radius Report.

4.1.1 Screening Criteria

The following screening criteria were used to identify which of the cases listed in the EDR report should be further evaluated based on their potential to have impacted the subsurface below the Project Site:

- The facility is either:
    - within the Project Site; or
    - upgradient of, and within a distance of 1/8 of a mile from, the Project Site; and
- The facility is listed on one of the databases of reported hazardous materials releases (Federal NPL, Federal CORRACTS, Federal CERCLIS, State CORTESE, State leaking underground storage tank (LUST), State SLIC, RESPONSE, EnviroStor, etc.); or
- The facility is listed as a Resource Conservation and Recovery Act (RCRA) large-quantity hazardous waste generator (LQG), a CERCLIS site, a UST operator, an AST operator, a SWEEPS site, a dry cleaner facility or a CCSF Business Industry database site with an underground tank storing a significant volume of hazardous materials; or
- The facility is listed as a solid waste landfill (not including transfer stations).

Table 2 Regulatory Data Base Results within 1 Mile of the Project Area

Agency Database	Cases Identified
SEMS-Archive – Sites with no further interest under the Federal Superfund Program based on available information.	3
CERCLIS NFRAP – Sites which have been removed and archived from the inventory of CERCLIS sites.	1
RCRA-LQG –Federal list of sites which generate, transport, treat and/or dispose of large quantities of hazardous waste. A Resource Conservation and Recovery Act (RCRA) Large Quantity Generator (LQG) generates over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.	7
RCRA-SQG – Federal list of sites which generate, transport, treat and/or dispose of small quantities of hazardous waste. A Small Quantity Generator (SQG) generates between 100 kg and 1,000 kg of hazardous waste per month.	7
CA RESPONSE – Identifies confirmed release sites where DTSC is involved in remediation. These sites are generally high-priority and high potential risk.	3
CA ENVIROSTOR – DTSC's site Mitigation and Brownfields Reuse Program's database.	18
CA SWF/LF – The Solid Waste Facilities/Landfill Sites database contains a listing of solid waste disposal sites in California.	4
CA LUST – State Leaking Underground Storage Tank (LUST) List.	60
CA SLIC – A State Water Resource Control Board source. Includes Spills, Leaks, Investigations and Clean-ups.	6
CA UST – State source of Underground Storage Tank listing containing registered USTs regulated under RCRA's Subtitle I.	11
CA AST – State source of Aboveground Storage Tank location listing.	4
CA VCP – State listing of low threat level properties with either confirmed or unconfirmed releases and the project proponents have requested that DTSC oversee investigation and/or cleanup activities	2
CA SWRCY – State Landfill/Solid Waste Disposal Inventory of recycling facilities in California.	1
CA HIST Cal-Sites – Contains both known and potential hazardous substance sites in California. No longer updated, replaced ENVIROSTOR.	3
CA SWEEPS UST – Statewide Environmental Evaluation and Planning System Underground storage tank listing updated by early 1980s. No longer updated or maintained.	14
CA HIST UST – State Historical UST Registered Database.	11
CA FID UST – Facility Inventory Database containing a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board.	13
CA DEED – State listing of the use of recorded land use restrictions.	7
RCRA-NonGen/NLR – RCRA-Non Generators. Non-Generators do not presently generate hazardous waste	56
FUDS – Formerly Used Defense Sites	3
US MINES – Mines master Index Files	1
CA Cortese – State list designated by LUST, SWF/LS, and Cal-Sites.	47
CA Drycleaners – State listing of drycleaner related facility that have EPA ID numbers.	2
CA HIST CORTESE- Hazardous Waste and Substances Sites List and include sites from LUST, SWF/LS and Cal-Sites. This database is no longer updated by the state agency.	36
CA HWP – State listing with information on permitted hazardous waste facilities and corrective action tracked in EnviroStor.	2
NY Manifest – A document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.	2
CA Notify 65. Proposition 65 Records. This database contains facility notifications about any release which could impact drinking water and thereby expose the public to a potential health risk.	4
EDR MGP – The EDR Manufactured Gas Plant Database includes records of coal gas plants.	1
EDR US Hist Auto Stat list – This list includes potential gas station/filling station/service station sites	3
EDR US Hist Cleaners – This list includes potential dry cleaner sites which included but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash and dry, etc.	1
CA RGA LUST – Recovered Government Archive Leaking LUST sites.	2

4.1.2 Screening Results

The Project Site is not listed in the EDR report or EnviroStor. However, Islais Creek Area, ID # 0901864, EPA ID # CAD980637011 is listed as Superfund Enterprise Management System Archive (SEMS-Archive) and is mapped in the middle of Islais Creek Channel.

- Cargo Way and Amador Street – Near Piers 92 and 94 – Referred to the Regional Water Quality Control Board (RWQCB) in June 1994.
- Historical RCRA 3012 Past Hazardous Waste – oil/water separation sludge, unspecified oil containing waste, unspecified solvent mixtures, waste oil, mixed oil, latex waste, unspecified organic liquid mixture, sulfur sludge (not available).

AECOM believes this area is to the east of the Project Site and consists of Central Concrete Plant and Supply and Martin Marietta Marine Aggregates – Piers 92 and 94, situated along Cargo Way and Amador Street. The RWQCB summary states this past hazardous waste disposal is historical with no specified contamination or chemicals of concern noted. No additional information was available.

Six facilities in the study area met the above screening criteria. Listings for all these facilities can be found in the EDR report (**Appendix C**). Five of the cases listed have been closed; however, there is a potential for the contaminants released to affect the target property. Pier 90 former Exxon Mobil bulk oil facility is still an open case, with recommendation of a site mitigation plan if developed. These listings were determined to be a potential areas of environmental concern. Details of these sites are described in **Table 3**.

4.2 Orphan Sites

Orphan sites are those that lack specific addresses or have limited geographical information that prevents identifying their locations. Nine orphan sites were identified in the EDR Radius Map Report (**Appendix C**); none of these sites were observed during the site reconnaissance, and they are not expected to pose an environmental risk in connection with the Project Site.

4.3 Vapor Encroachment

The ASTM Standard E 1527-13 states that “for the purposes of this practice, ‘migrate’ and ‘migration’ refer to the movement of hazardous substances or petroleum products in any form, including, for example, solid and liquid at the surface or subsurface, and vapor in the subsurface.” Therefore, this section assesses the potential environmental risk of vapor migration by identifying off-site properties within 30 and 100 feet of the Project Site that have documented volatile petroleum hydrocarbon contamination or chlorinated volatile organic compound (VOC) contamination, respectively.

The EDR VEC App™ identified 27 nearby sites that are likely to contribute to vapor encroachment issues for the Project Site. However, the Project Site is a bridge over the Islais Creek Channel; therefore, vapor encroachment does not apply to this project.

4.4 Regulatory Agency Records

AECOM contacted appropriate regulatory agencies to conduct file reviews or interviews for information regarding environmental permits, USTs, environmental violations, or incidents, and/or the status of enforcement actions at the Project Site, using the assigned APN or location on online mapping software. A listing of the various public agencies contacted, and a summary of the relevant findings, are presented in the following subsections.

Table 3 Historic REC Sites Within 1/8 Mile of the Site

Figure #	EDR No. 1	Source of Information	Owner or Occupant/Site Listing (present and past)	Address	Description	Distance from Project Area	Database Listings
1	5 6 7	EDR Report GeoTracker	• -Fire Station #25 • SFFD Station #25 • SFFD/Fire Station #25	3305 3rd St., San Francisco	One UST containing diesel located on site. Leak detected in 1997 during tank closure. Status: Completed – Case closed as of 8/27/2008	0 to 1/8 mile	HIST UST LUST HIST CORTESE SWEEPS UST CA FID UST
2		GeoTracker	• -Pier 90 – Port of San Francisco • Former Exxon Mobil bulk oil facility	Cargo Way San Francisco	Open – Remediation 3/1/2022 Loc Case # 0860 COCs arsenic, copper, diesel, gasoline, lead, nickel, total TPHs, zinc. Tanks removed 1989.	0 to 1/8 mile	Cleanup Program Site
3		EnviroStor	• -Piers 92 and 94 – Central Concrete Plant and Supply and Martin Marietta Marine Aggregates	Cargo Way and Amador Street San Francisco	Historical RCRA 3012 Past Hazardous Waste – oil/water separation sludge, unspecified oil containing waste, unspecified solvent mixtures, waste oil, mixed oil, latex waste, unspecified organic liquid mixture, sulfur sludge (not available).	0 to 1/8 mile	SEMS-Archive
4	10	EDR Report GeoTracker	• Skyline Coach Inc. • Open Top Sight Seeing • Commercial • Commercial Property	3240 3rd St., San Francisco	Leak discovered in tank during closure. Contents of tank: Diesel. Leak detected 6/14/2010. Status: Completed – case closed as of 7/16/2010.	0 to 1/8 mile	FINDS LUST RCRA-SQG HAZNET
5	18	EDR Report GeoTracker	• India Basin Car Wash • Former Gas Station	3433 3rd St., San Francisco	Former gas station. Release discovered 5/7/1999. Contents of tank: Gasoline. Status: Completed – case closed as of 5/7/1999.	0 to 1/8 mile	HIST UST LUST Cleanup Site
6	21 22 23 24	EDR Report GeoTracker	• Loomis Armored, Inc. Loomis, Fargo and Loomis Armored	1060 Marin St., San Francisco	Release discovered 10/12/1989. Contents of tank: Diesel. Status: Completed – case closed as of 9/22/1995.	0 to 1/8 mile	LUST UST SWEEPS UST CA FID UST HIST CORTESE

4.4.1 City or County Agencies

City of San Francisco Public Records Request: On April 14, 2022, a request for information was submitted online; on April 14, 2022, the department indicated there were no records for the Project Site and surrounding area. Records are available by APN number only; no documents were found for the Islais Creek Bridge.

4.4.2 State Agencies

State Water Resources Control Board: AECOM accessed the State Water Board's GeoTracker database (State Water Board 2022) to review any files maintained for the Project Site. No files were found.

California Department of Toxic Substances Control: AECOM accessed the EnviroStor database (DTSC 2018) to review any files maintained for the Project Site. No files were found.

California Office of Emergency Services Spills Database: AECOM accessed the Spill Release Archive (OES 2022) to review any files maintained for the Project Site. No files pertaining to the Project Site were found.

4.4.3 Federal Agencies

USEPA: AECOM searched USEPA's ECHO database (USEPA 2022), which consists of the USEPA compliance history at a site. No files pertaining to the Project Site were found.

4.5 Prior Assessments

The Project Site was not listed in any of the environmental regulatory database searches conducted for this report.

5. Site Reconnaissance and Interviews

The Project Site and surrounding area reconnaissance was conducted on Tuesday, April 26, 2022, by Juan Aldecoa of AECOM's Oakland office. The weather was partly cloudy, with an ambient temperature of 70 degrees Fahrenheit.

5.1 Interviews

The AAI User questionnaire was not completed by SFPW at the time of this Phase 1 ISA. Although this omission is considered a data gap, it is not expected to affect AECOM's conclusions.

5.2 Site Features

The Project Site is a drawbridge that crosses over the Islais Creek Channel, known as Islais Creek Bridge, which runs along 3rd Street in San Francisco, California. The bridge consists of four lanes of traffic—two in each direction—with two sets of SFMTA tracks down the middle. The bridge has a pedestrian walk on each side and a control tower on its northeastern side.

5.3 Utilities

Utilities appear to be constructed overhead along the middle of the bridge. Stormwater drains were observed, as well as many municipal water, sewer, and stormwater access ports.

5.4 Storage Structures and Pipelines

No evidence of USTs (e.g., vent pipes or fill ports) or other underground containment structures, sumps, surface tanks, ponds, or basins were observed at the Project Site at the time of the site reconnaissance.

5.5 Hazardous Materials

No hazardous materials were observed on the Project Site.

5.6 Contamination

Discarded solid waste, such as food wrappers, cardboard, and bottles, were observed along the shoreline at the Project Site. No oil sheens, odors, or vegetation damage was observed. An encampment of displaced persons appears to be located under the southern side of the bridge.

5.7 Hazardous Waste

No hazardous waste was observed on the Project Site.

5.8 Polychlorinated Biphenyl-Containing Equipment

No polychlorinated biphenyl-containing equipment was observed on the Project Site; however, one pad-mounted transformer was observed. No information was found regarding ownership of the transformer.

5.9 Wastewater/Stormwater

No wastewater was observed on the Project Site.

5.10 Wells

No wells were observed on the Project Site or in the immediate vicinity.

6. Conclusions and Recommendations

AECOM performed this ISA at the Project Site in accordance with the Agreement (AECOM 2022) and ASTM's *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* (ASTM 2013). Any exceptions to or deletions from this practice are described in Chapter 1.0, "Introduction."

No evidence of HREC, RECs or CRECs were identified in connection with the Project Site.

6.1 Waste Disposal/Soil Reuse

Regulatory criteria to classify a waste as "California Hazardous" for handling and disposal purposes are contained in the California Code of Regulations (CCR), Title 22, Division 4.5, Chapter 11, Article 3, subsection 66261.24. Federal criteria to classify a waste as "RCRA Hazardous Waste" are contained in Chapter 40 of the Code of Federal Regulations (40 CFR), Section 261. For a waste containing lead, the waste is classified as California Hazardous when:

- The total lead content exceeds the Total Threshold Limits Concentration (1,000 milligrams per kilogram [mg/kg]).
- The soluble lead content exceeds the Soluble Threshold Limits Concentrations (5.0 milligrams per liter [mg/L]) based on the standard California Waste Extraction Test (CA-WET).

Therefore, for the purposes of excavation and construction, based on the proposed rehabilitation and/or replacement of the bridge, AECOM concludes that all soil excavated within the Project Site limits may be reused with no cover restrictions. Soils with concentrations of total lead not exceeding 320 mg/kg and extractable lead less than 5 mg/L, as determined by the CA-WET, may be removed from the Project Site without disposal in a landfill. Therefore, AECOM recommends that any soil designated for removal from the Project Site be sampled and analyzed; and if the resulting lead concentrations exceed 320 mg/kg, and/or extractable lead is greater than 5 mg/L as determined by the CA-WET, then it is to be handled pursuant to the hazardous waste management standards of Health and Safety Code, Chapter 6.5 (Section 25100, et. seq.), and regulations adopted thereunder.

6.2 Health and Safety Requirements

AECOM recommends that the contractor conduct all grading operations in accordance with applicable California Occupational Safety and Health Administration (Cal-OSHA) requirements, including a project-specific worker Health and Safety Plan developed using the following guidance to minimize worker exposure to VOC, semi-volatile organic compound, and lead-impacted air, dust, or soil:

- Before the start of excavation activities, a "competent person" in accordance with 29 CFR Section 1926.650 (a person who has the knowledge and training to identify hazards and the authority to correct the hazards) will assess the toxicological (health) hazards associated with exposure to organic and inorganic chemicals and metals during the project. Chemicals that may be encountered are described in the sections above.
- CCR, Title 8, Subchapter 7. General Industry Safety Orders, Group 16. Control of Hazardous Substances, Article 107. Dusts, Fumes, Mists, Vapors and Gases.
- Cal-OSHA standards addressing this issue under General Industry (29 CFR 1910) (1910.1025 – Lead).
- Caltrans requirements for a project-specific Lead Compliance Plan (CCR Title 8, Section 1532.1, the "Lead in Construction Standard").

We declare that, to the best of our professional knowledge and belief, we meet the definition of an Environmental Professional as defined in 40 CFR Section 312.10. We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the Project Site.

Wanda L. Farmer

Signature: _____

Wanda L. Farmer, REM – Environmental Scientist
Assessor

We have developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Signature: _____

Frank Gegunde, P.G.
Reviewer

7. References

AECOM. 2022. *San Francisco Public Works Task Authorization*. December 2.

ASTM (American Society for Materials Testing). 2013. *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*. E 1527-13.

California Department of Conservation. 2018. California Geological Survey *Interactive Geologic Map of California 2010.* Available online: https://www.conservation.ca.gov/cgs/publications/gmc. Accessed 2022.

City of San Francisco. 2022. Online Property Search. Available: Property Search | CCSF Office of Assessor-Recorder (sfassessor.org).

DWR (Department of Water Resources). 2022. Groundwater sustainability agencies (GSAs) Map viewer, Available online: https://sgma.water.ca.gov/webgis/index.jsp?appid=gasmaster&rz=true.

DOGGR (California Department of Oil, Gas, and Geothermal Resources). 2022. *DOGGR Database*. Available online: http://www.conservation.ca.gov/dog/Pages/Wellfinder.aspx. Accessed April 14, 2022.

DTSC (California Department of Toxic Substances Control). 2016. Soil Management Agreement for Aerially Deposited Lead-Contaminated Soils; Health and Safety Code Section 25187(b)(5). Available online: http://www.dot.ca.gov/env/hazwaste/docs/dtsc-ct-adlfinal-063016.pdf. Accessed July 1, 2016.

DTSC (California Department of Toxic Substances Control. 2018. *EnviroStor Database*. Available online: http://www.envirostor.dtsc.ca.gov. Accessed April 14, 2022.

Fugro West Inc. 2008. *Subsurface Investigation Report, Fire Station #25, 3305 3rd Street, San Francisco, Ca, LOP Site Number 10875*. May.

Kearney Foundation. 1996. *Background Concentrations of Trace and Major Elements in California Soils*. March.

Ramirez-Herrera, M.T., J.M. Sowers, and C.M. Richard, and R. Grossinger. 2006. *Creek & Watershed Map of San Francisco*: Oakland Museum of California, Oakland, CA. 1:25,800 scale. Available online: http://explore.museumca.org/creeks/images/TitleBlockSF.gif. Accessed April 14, 2022.

SFPUC (San Francisco Public Utilities Commission). 2021. *2020 Annual Groundwater Monitoring Report Westside Basin San Francisco and San Mateo Counties, Ca by San Francisco Public Utilities Commission* (South San Francisco District). April. COVER SHEET (sfpuc.org).

State Water Board (State Water Resources Control Board). 2018. *GeoTracker Database*. Available online: https://geotracker.waterboards.ca.gov/. Accessed April 14, 2022.

USDA (U.S. Department of Agriculture). 2017. *Soil Conservation Service, Web Soil Survey*. Available online: http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx. Accessed April 14, 2022.

USGS (U.S. Geological Survey). 2018. 7.5-minute Series Topographic Maps for the San Francisco South, Oakland West, Hunters Point, and San Francisco North, California Quadrangles.

USGS (U.S. Geological Survey). 2018 Geology of the Palo Alto 30x60 minute. Quadrangle, California: Derived from the Digital Database open-file 98-348, Brabb, Graymer, and Jones 1998.

Figures

Appendix A Project Site Supporting Documentation

Appendix B Representative Site Photographs

Appendix C EDR Radius Map Report

Appendix D EDR Historical Documentation

aecom.com