San Francisco Planning

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

CEQA CATEGORICAL EXEMPTION FORM

Project Name
SFPUC - Lower Alemany Area Stormwater Improvements Project
Project Location
Excelsior & Bayview Hunters Point neighborhoods, near intersection of US 101 and I-280
Case Number
2023-000654ENV
Project Type

- ☑ New Facility
- ☐ Replacement Facility/Equipment
- ☑ Repair/Maintenance/Upgrade
- ☐ Other: _____

1. Exemption Class

- ☑ Class 1 - Existing Facilities
- ☐ Class 2 - Replacement or Reconstruction
- ☑ Class 3 - New Construction or Conversion of Small Structures
- ☐ Class 6 - Information Collection
- ☐ Other: _____

2. CEQA Impacts

For any box checked below, refer to the attached Environmental Evaluation Application with supporting analysis and documentation.

- ☐ **Air Quality:** Would the project affect sensitive receptors (specifically schools, colleges, universities, day care facilities, hospitals, residential dwellings, or senior-care facilities)? Would project construction or operations exceed air quality screening criteria using either the SFPUC Air Quality Screening Tool or CalEEMOD?
- ☐ **Noise:** Would the project conflict with the applicable local Noise Ordinance?
- ☐ **Hazardous Materials:** Would the project be located on a site included on any list compiled pursuant to Section 65962.5 of the Government Code, or impact an area with known hazardous materials such as a former gas station, auto repair, dry cleaners, heavy manufacturing use, or site with underground storage tanks? If the project site is suspected of containing hazardous materials, would the project involve 50 cubic yards or more of soil disturbance?

☐ **Soils Disturbance/Modification:** Would the project result in soil disturbance greater than 2 feet below grade in an archeological sensitive area or 8 feet in a non-archeological sensitive area?

☐ **Slope/Geological Hazards:** If located on slopes of 20% or greater, in a landslide or liquefaction zone, does the project involve excavation of 50 cubic yards of soil or more, new construction, or square footage expansion greater than 1,000 sq. ft. outside of the existing building footprint?

☐ **Hydrology/Water Quality:** Would the project cause flooding impacts, violate water quality standards, result in on- or off-site erosion impacts, or otherwise substantially degrade water quality?

☐ **Biology:** Would the project have the potential to impact sensitive species, rare plants or designated critical habitat? Is the project consistent with the applicable tree protection ordinance?

☐ **Visual:** Is the project located within or adjacent to a designated scenic roadway, or would the project have the potential to impact scenic resources that are visible from public locations?

☐ **Transportation:** Would project construction or operation have the potential to adversely affect existing traffic patterns, transit operations, pedestrian and/or bicycle safety (hazards), or the adequacy of nearby transit, pedestrian and/or bicycle facilities?

☐ **Historical Resources:** Is the project located on a site with a known or potential historical resource?

☐ **Other:** _____

3. Categorical Exemption Determination

☐ **Further Environmental Review Required.**

Notes: _____

☑ **No further environmental review is required. The project is categorically exempt under CEQA. No exceptions to the exemption apply and there are no unusual circumstances that would result in a reasonable possibility of a significant effect.**

Timothy Johnston
Planner's Signature

3/25/2025
Date

Timothy Johnston, senior environmental planner
Name, Title

SFPUC public hearing
Project Approval Action

Once signed and dated, this document constitutes a categorical exemption pursuant to CEQA Guidelines and Chapter 31 of the Administrative Code.

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PUBLIC PROJECT APPLICATION

The purpose of the Public Project Application is to collect all relevant information necessary for the Planning Department to appropriately conduct environmental review for a public agency project that does not require an entitlement decision from the San Francisco Planning Commission and/or review of a building permit by the department's Current Planning division. Unless otherwise specified by your liaison at Environmental Planning, please submit a completed Public Project Application, along with necessary materials to CPC.EPIntake@sfgov.org.

For projects requiring an entitlement and/or review by the department's Current Planning division, please complete a regular Project Application and submit according to the submittal instructions outlined in the application.

Once a project is received, you will be contacted regarding payment and/or any additional materials necessary. When payment and/or all missing materials are received, you will receive an email with the ENV case number and contact information for the assigned planner.

PROJECT INFORMATION

Property Information

ProjectAddress: Alemany Blvd, Gaven St., Industrial St., Bayshore Blvd., Courtland St., Industrial St.

Block/Lot(s):

Applicant Information

Public Agency: SFPUC

Name: Allison Chan

Telephone: 415-554-3186

Email Address: AlChan@sfwater.org

REQUIRED MATERIALS

☐ Electronic set of plans (11x17) Please see the Department's Plan Submittal Guidelines for more information.

☐ Photos of proposed work areas/project site.

☐ Necessary background reports and supplemental applications (specified in Environmental Evaluation Screening Form)

☐ MTA only: Synchro data for lane reductions and traffic calming projects.

PROJECT INFORMATION

PROJECT DESCRIPTION:

Please provide a narrative project description that summarizes the project and its purpose. If additional space is necessary, please attach a seperate document with a complete project description.

The Project proposes to alleviate peak flooding in the Lower Alemany area of San Francisco during a 5-year storm. The project would involve constructing two new sewer lines: a 10-ft internal diameter Alemany Auxiliary Sewer (AAS) and a 6-foot diameter Cortland Auxiliary Sewer (CAS). The AAS would primarily occur along Gaven Street south of I-280 and along Boutwell Street northeast of the I-280/US-101 interchange. The AAS would be an approximately 1.26-mile-long stormwater sewer line that connects to the existing Alemany Sewer upstream and the Industrial Sewer and Islais Creek Transport/Storage downstream. The CAS would be approximately 0.12 mile long and will connect with the existing Cortland Sewer upstream and the Industrial Sewer downstream. At the western terminus of the AAS, a new diversion structure with a weir would be installed to direct stormwater flows from the existing Alemany Sewer to the proposed AAS. When a storm event causes stormwater flows to rise, wet weather flows would flow over the weir and be diverted to the new AAS.

Up to four shafts would be constructed to facilitate construction of the tunnel portion of the AAS using either a tunnel boring machine (TBM) or a microtunnel boring machine (MTBM). If TBM tunnel excavation methods are used, the following shafts would be constructed: the Stoneybrook Shaft, Bayshore Shaft, and Boutwell Shaft. If MTBM tunnel excavation methods are used, an additional shaft (Bowdoin Shaft) would be established between the Stoneybrook Shaft and Bayshore Shaft to receive the MTBM. The diameter of the shafts would range between approximately 16 feet wide and approximately 32 feet wide and the shaft depths would range between approximately 15 feet deep to approximately 85 feet deep.

The CAS would have an inside diameter of 3.5 feet and a 6-foot inside diameter steel casing. The CAS would be constructed using a combination of trenchless and cut-and-cover methods.

Staging areas would occur on paved streets (including Alemany Blvd, portions of Gaven Street), a portion of the I-280 off ramp, and a grassy area that abuts Bayshore Blvd. within Caltrans right-of-way.

APPROVAL ACTION

In accordance with Chapter 31 of the San Francisco Administrative Code, an appeal of an exemption determination can only be filed within 30 days of the project receiving the first approval action.

Project Approval Action: SFPUC approval

Will the approval action be taken at a noticed public hearing? ☑ Yes ☐ No

*If YES is checked, please see below. **Email CPC.EPIntake@sfgov.org the date of approval

IF APPROVAL ACTION IS TAKEN AT A NOTICED PUBLIC HEARING, INCLUDE THE FOLLOWING CALENDAR LANGUAGE:

End of Calendar:
CEQA Appeal Rights under Chapter 31 of the San Francisco Administrative Code. If the Commission approves an action identified by an exemption or negative declaration as the Approval Action (as defined in S.F. Administrative Code Chapter 31, as amended, Board of Supervisors Ordinance Number 161-13), then the CEQA decision prepared in support of that Approval Action is thereafter subject to appeal within the time frame specified in S.F. Administrative Code Section 31.16. Typically, an appeal must be filed within 30 calendar days of the Approval Action. For information on filing an appeal under Chapter 31, contact the Clerk of the Board of Supervisors at City Hall, 1 Dr. Carlton B. Goodlett Place, Room 244, San Francisco, CA 94102, or call (415) 554-5184. If the Department's Environmental Review Officer has deemed a project to be exempt from further environmental review, an exemption determination has been prepared and can be obtained on-line at http://sf-planning.org/index.aspx?page=3447. Under CEQA, in a later court challenge, a litigant may be limited to raising only those issues previously raised at a hearing on the project or in written correspondence delivered to the Board of Supervisors, Planning Commission, Planning Department or other City board, commission or department at, or prior to, such hearing, or as part of the appeal hearing process on the CEQA decision. Individual calendar items: This proposed action is the Approval Action as defined by S.F. Administrative Code Chapter 31.

Individual calendar items:
This proposed action is the Approval Action as defined by S.F. Administrative Code Chapter 31.

ENVIRONMENTAL EVALUATION SCREENING FORM

This form will determine the level environmental review is required. You will be contacted by CPC.EPIntake@sfgov.org with a payment request and planner contact information.

If you are submitting an application for entitlement, please submit the Project Application with either Building Permit or Entitlement Intake Appointment.

Environmental Topic	Information	Applicable to Proposed Project?	Notes/Requirements
1a. General	Estimated construction duration (months):	N/A	up to approx. 35 months
1b. General	Does the project involve replacement or repair of a building foundation? If yes, please provide the foundation design type (e.g., mat foundation, spread footings, drilled piers, etc.)	☐ Yes ☑ No	
1c. General	Does Chapter 29 of the San Francisco Administrative Code apply to the proposed project?	☐ Yes ☑ No	If yes, please attach feasibility study to application. If applicant is unclear about Chapter 29 applicability, please contact the city attorney assiged to advise your agency. Planning will not accept the application without applicant verification that Chapter 29 does not apply, or a completed feasibility study.
2a. Transportation	Does the project involve a child care facility or school with 30 or more students, or a location 1,500 square feet or greater?	☐ Yes ☑ No	If yes, submit an Environmental Supplemental- School and Child Care Drop-Off & Pick-Up Management Plan.
2b. Transportation	Would the project involve the intensification of or a substantial increase in vehicle trips at the project site or elsewhere in the region due to autonomous vehicle or for-hire vehicle fleet maintenance, operations, or charging?	☐ Yes ☑ No	
3. Shadow	Would the project result in any construction over 40 feet in height?	☐ Yes ☑ No	If yes, an initial review by a shadow expert, including a recommendation as to whether a shadow analysis is needed, may be required, as determined by Planning staff. (If the project already underwent Preliminary Project Assessment, refer to the shadow discussion in the PPA letter.) An additional fee for a shadow review may be required.
4. Biological Resources	Does the project include the removal or addition of trees on, over, or adjacent to the project site?	☑ Yes ☐ No	If yes: Number of existing trees on, over, or adjacent to the project site: unknown at this time Number of existing trees on, over, or adjacent to the project site that would be removed by the project: unknown Number of trees on, over, or adjacent to the project site that would be added by the project:
5a. Historic Preservation	Would the project involve changes to the front façade or an addition visible from the public right-of-way of a structure built 45 or more years ago or located in a historic district?	☐ Yes ☑ No	If yes, submit a complete Historic Resource Determination Supplemental Application. Include all materials required in the application, including a complete record (with copies) of all building permits.

Please see the Property Information Map or speak with staff at the Planning Counter to determine if this applies.

Environmental Topic	Information	Applicable to Proposed Project?	Notes/Requirements
5b. Historic Preservation	Would the project involve demolition of a structure constructed 45 or more years ago, or a structure located within a historic district?	☐ Yes ☑ No	If yes, a historic resource evaluation (HRE) report will be required. The scope of the HRE will be determined in consultation with CPC-HRE@sfgov.org.
6. Archeology	Would the project result in soil disturbance/ modification greater than two (2) feet below grade in an archeologically sensitive area or eight (8) feet below grade in a non-archeologically sensitive area?	☑ Yes ☐ No	If Yes, provide depth of excavation/ disturbance below grade (in feet*): Max depth of disturbance ~85 feet for Stoneybrook Shaft *Note this includes foundation work
7. Geology and Soils	Is the project located within a Landslide Hazard Zone, Liquefaction Zone or on a lot with an average slope of 25% or greater? Area of excavation/disturbance (in square feet): TBD Amount of excavation (in cubic yards): approx. 65,500 cy of material to be removed	☐ Yes ☑ No	A geotechnical report prepared by a qualified professional must be submitted if one of the following thresholds apply to the project: The project involves: • new building construction, except one-story storage or utility occupancy; • horizontal additions, if the footprint area increases more than 50%; • horizontal and vertical additions increase more than 500 square feet of new projected roof area; or • grading performed at a site in the landslide hazard zone. A geotechnical report may also be required for other circumstances as determined by Environmental Planning staff.
8. Air Quality	Would the project add new sensitive receptors (residences, schools, child care facilities, hospitals residential dwellings, and senior-care facilities) within an Air Pollutant Exposure Zone?	☐ Yes ☑ No	If yes, the property owner must submit copy of initial filed application with the Department of Public Health. More information is found here.
9a. Hazardous Materials	Is the project site located within the Maher area or on a site containing potential subsurface soil or groundwater contamination and would it involve ground disturbance of at least 50 cubic yards or a change of use from an industrial use to a residential or institutional use?	☑ Yes ☐ No	If yes, submit a Maher Application Form to the Department of Public Health and submit documentation of Maher enrollment with this Project Application. Certain projects may be eligible for a waiver from the Maher program. For more information, refer to the Department of Public Health's Environmental Health Division. Maher enrollment may also be required for other circumstances as determined by Environmental Planning staff.
9b. Hazardous Materials	Is the project site located on a Cortese site or would the project involve work on a site with an existing or former gas station, parking lot, auto repair, dry cleaners, or heavy manufacturing use, or a site with current or former underground storage tanks?	☐ Yes ☑ No	If yes, submit documentation of enrollment in the Maher Program (per above), or a Phase I Environmental Site Assessment prepared by a qualified consultant.

Please see the Property Information Map or speak with staff at the Planning Counter to determine if this applies.

San Francisco Water Power Sewer
Services of the San Francisco Public Utilities Commission

Environmental Management
525 Golden Gate Avenue, 11th Floor
San Francisco, CA 94102
T 415.934.5700
F 415.934.5750
TTY 415.554.3488

March 24, 2025

Mr. Timothy Johnston, MP, Senior Environmental Planner
Environmental Planning Division
San Francisco Planning Department
49 South Van Ness Avenue, Suite 1400
San Francisco, CA 94103

RE: CEQA Categorical Exemption Request
Lower Alemany Area Stormwater Improvements Project
Project No.: 10034360
Case No: 2023-000654ENV
COA: 10034360 0001 20715 232146 15730

Dear Mr. Timothy Johnston:

The San Francisco Public Utilities Commission (SFPUC) requests review of the proposed Lower Alemany Area Stormwater Improvements Project (Project) under the California Environmental Quality Act (CEQA). The SFPUC requests San Francisco Planning Department – Environmental Planning Division (EP) concurrence that the proposed Project is categorically exempt under CEQA Section 15301, Class 1 (Existing Facilities) and Section 15303, Class 3 (New Construction or Conversion of Small Structures). Class 1 consists of minor alteration of existing public structures involving negligible expansion of existing or former use. Class 3 consists of construction and location of limited number of new, small facilities or structures, including “water main, sewage, electrical, gas and other utility extensions”.

The following analysis demonstrates the proposed Project qualifies for a Class 1 and Class 3 categorical exemption and none of the exceptions to the use of a categorical exemption applies to the Project. The Project would be conducted in compliance with applicable federal, State, and local regulations and under contractual provisions prohibiting work in violation of applicable regulations and plans.

1. Project Setting

1.1 Introduction, Project Location, and Background

The San Francisco Public Utilities Commission (SFPUC) is proposing to implement the Lower Alemany Area Stormwater Improvements Project (Project) to manage stormwater to meet the SFPUC's Sewer System Improvement Program (SSIP) Level of Service goals in the Lower Alemany neighborhood.

The Project area sits in the Islais Creek watershed and historically floods during large storm events. During such events, flooding typically begins at the intersection of Alemany Boulevard and Ellsworth Street and continues beyond the U.S. 101 / Interstate 280 (I-280) interchange into Industrial Street and Bayshore Boulevard. The Project is generally located along Alemany Boulevard and Gaven Street (south of I-280) and Boutwell Street and Industrial Street east of the U.S. 101 and I-280 interchange.

1.2 Existing Sewer Facilities

The SFPUC maintains a combined sewer system that collects and conveys storm runoff and sanitary sewage to various treatment plants within the City and County of San Francisco (City). A map of the existing sewer system in the Project area is shown in **Figure 1**. Existing stormwater management in the Project area consists of the Alemany sewer, built in 1960, which collects water from an upstream urbanized tributary area of approximately 3,000 acres. The Alemany sewer consists of a two-compartment 6-foot-wide by 11-foot-tall box sewer that crosses under I-280 from eastbound Alemany Boulevard to westbound Alemany Boulevard and then transitions into an approximately 8-foot-wide by 10-foot-tall single compartment box sewer. The single-compartment Alemany sewer continues for about 4,100 feet along Alemany Boulevard, eventually transitioning to a 12-foot-wide by approximately 9-foot-high sewer, which then transitions to a two-compartment 11-foot-wide by approximately 9-foot-high sewer (herein referred to as the Industrial sewer) before reaching the I-280/U.S.101 interchange.

Industrial sewer continues for 1,600 feet, where it connects to the 12-foot-wide by 16-foot-high Islais Creek transport/storage sewer on Barneveld Avenue and Industrial Street. The point at which the Industrial sewer connects to Islais Creek Transport/Storage is herein referred to as the Barneveld-Industrial connection structure. The 11-foot-wide by 9-foot-high two compartment Industrial sewer continues along Industrial Street and Selby Street for another 3,650 feet, where it transitions to a three-compartment 10-foot-wide by approximately 8-foot-high sewer at Selby Street and Galvez Avenue. It then continues for 770 feet along Selby Street and connects to the Islais Creek transfer/storage box system at Selby Street and Davidson Avenue.

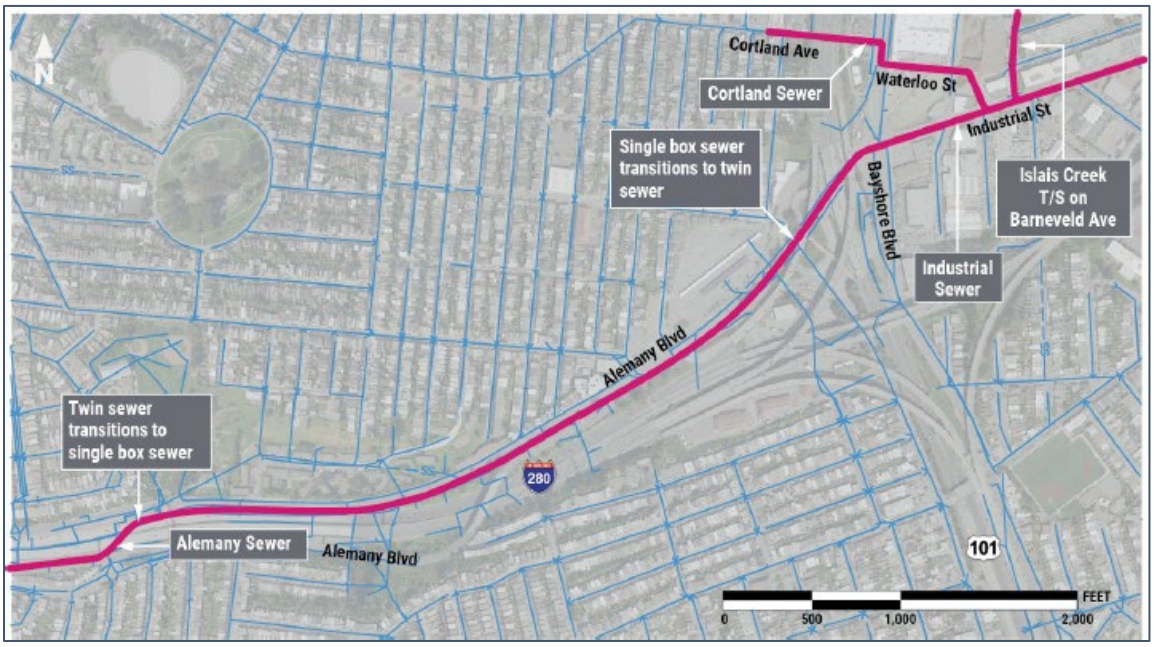


Figure 1. Existing Sewers within Project Area

1.3 Relationship to the Sewer System Improvement Program

After recognizing the need to update the City's aging sewer infrastructure, the SFPUC began a 20-year capital improvement program, the SSIP, in 2011. The SSIP focuses on ensuring reliability, sustainability, and seismic safety for the City's sewer system. This includes managing stormwater and alleviating flooding by implementing grey (primarily focuses on rapid water removal through engineered systems like pipes) and green (manage water through natural processes like infiltration and vegetation, often capturing rainwater where it falls) infrastructure. The Project is one of many projects covered under the SSIP. The Project is intended to address the SSIP Level of Service goals of managing stormwater and protecting streets and properties along the project corridors from a statistically derived 5-year, 3-hour storm.

2. Project Description

2.1 Project Objective

The primary objective of the Project is to manage stormwater to meet SSIP Level of Service goals in the Lower Alemany neighborhood.

2.2 Project Components

The Project includes constructing a new, approximately 1.4-mile-long, Alemany auxiliary sewer. The Alemany auxiliary sewer alignment primarily occurs along Alemany Boulevard and Gaven Street (south of I-280), beneath U.S. 101, and along Boutwell Street and Industrial Street east of the I-280/U.S.-101 interchange. The Alemany auxiliary sewer would connect upstream to the existing Alemany sewer and downstream to the existing Barneveld Industrial Connection Structure, which includes the Industrial

sewer and the Islais Creek transport/storage sewer. The Project primarily includes construction of the following components:

- **Alemany Auxiliary Sewer – Tunnel and Shafts**: approximately 6,350 linear feet of 10--foot-inside-diameter tunnel and three associated construction shafts (referred to as Alemany shaft, Bayshore shaft, and Boutwell shaft) as well as five permanent vent shafts (referred to as Bowdoin vent shaft, West View vent shaft, Stonybrook vent shaft, Bayshore vent shaft, and Boutwell vent shaft1).
- **Alemany Auxiliary Sewer – Box Sewer**: approximately 1,000 linear feet of box sewer
- **Upstream and downstream sewer connections**

The Project components and existing sewer infrastructure are shown on **Figures 2 and 3**, respectively. Primary project components are summarized in **Table 1** and described in more detail below.

Figure 2. Project Location and Proposed Project Components

[1] The Bayshore and Boutwell vent shafts are not shown in Figure 2 but would be installed within the footprint of the Bayshore and Boutwell construction shafts near the end of construction.

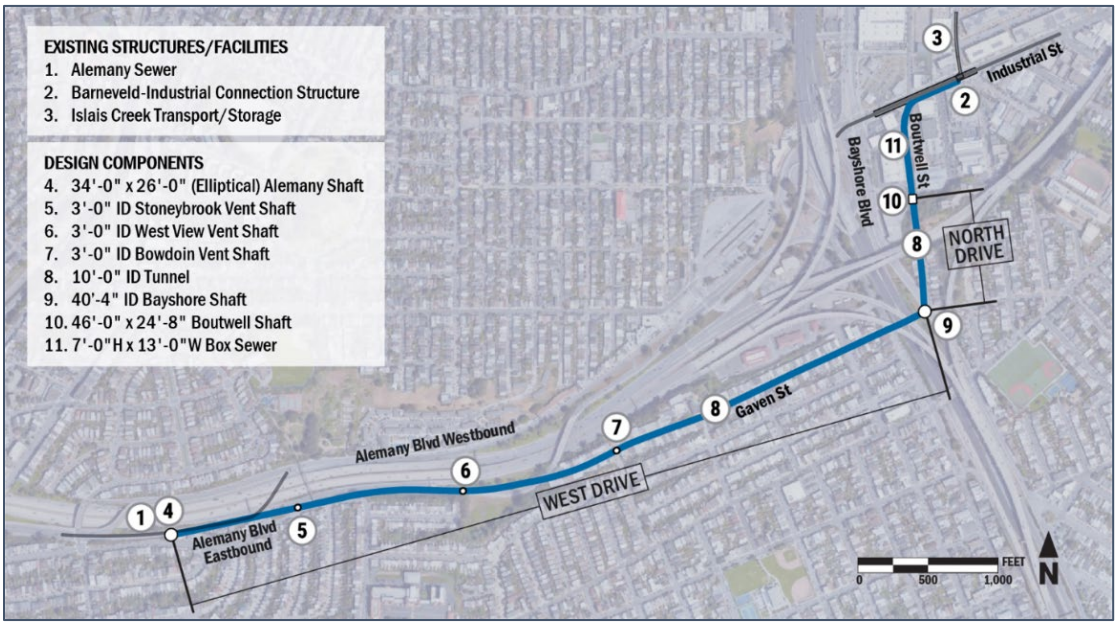


Figure 3. Existing and Proposed Project Components[2]

[2] "ID" in the legend for Figure 3 refers to the "inside diameter" of the proposed vertical shafts.

Table 1. Main Project Components and Associated Soil Disturbance Dimensions

Project Component	Dimensions of Soil Disturbance
Alemany Auxiliary Sewer – Tunnel and Tunnel Lining	Depth to Crown of Tunnel: Approximately 19-91 feet below ground Depth to Bottom of Tunnel: Approximately 31-103 feet below ground
Alemany Auxiliary Sewer – Box Sewer and Foundation	Cut-and-Cover Trench Dimensions: Approximately 20 feet wide and 12.5-17.5 feet deep with sheet piles approximately 25 feet below the base slab of the box sewer Pile Foundations: 2-foot diameter drilled pier concrete piles. Piles would be drilled up to 120 feet below ground.
Alemany Auxiliary Sewer – Shafts	Alemany Shaft: Elliptical approximately 40 feet long, 32 feet wide (outside dimension), 76 feet deep; depth of 3-foot diameter secant piles would be approximately 86 feet. Bayshore Shaft: Approximately 46.5 feet wide (outside diameter) and 66 feet deep; depth of 3-foot diameter secant piles would be approximately 76 feet. Boutwell Shaft: Approximately 51.5 feet long by 30 feet wide by 19 feet deep; depth of 2.5-foot diameter secant and soldier piles would be approximately 36 feet.
Upstream Connection	Diversion Structure: The structure would be about 75 feet long with two new 17- and 18-foot-wide by 8-foot-high openings in the south wall to allow flow from the existing sewer to enter the new connection chamber. Connection Chamber between Diversion Structure and Alemany Shaft (Drop Shaft): Braced excavation would be approximately 16 feet wide, 50 feet long and 31-38 feet deep.
Downstream Connection	Demolished Portion of the Block-Out Structure: Braced excavation approximately 30 feet long, 14.5 feet wide, and 13 feet deep. New Block-Out Connection: Approximately 40 feet long and 20 feet wide with a depth of 16 feet. The braced excavation dimensions would be similar to those of the box sewer trench (20 feet wide and approximately 17.5 feet deep).

To limit traffic disruptions along Alemany Boulevard during construction of the Alemany shaft and upstream connection and retrieval of the tunnel boring machine, a temporary paved road (shoofly) would be constructed (**Figure 4**). The shoofly would allow for construction activities to occur on Alemany Boulevard and avoid temporary closure of the roadway. The shoofly would be constructed north of Alemany Boulevard and south of the I-280 northbound shoulder. The shoofly would shift existing traffic north of the existing road by a width of approximately one lane and shoulder (11 feet wide + 7 feet wide) for a stretch approximately 500 feet long. Guard rail and a retaining wall would be installed along the northern portion of the shoofly to maintain the current grade of Alemany Boulevard.

2.2.1 Alemany Auxiliary Sewer

2.2.1.1 Tunnel and Construction Shafts

Construction of the Alemany auxiliary sewer would involve installation of approximately 6,350 linear feet of 10--foot-diameter tunnel for the Alemany auxiliary sewer and three associated vertical construction shafts. The tunnel would be constructed using a tunnel boring machine, with ground support[3] provided by either precast concrete segmental lining or concrete jacking pipe.[4] Three vertical construction shafts (Alemany, Bayshore, and Boutwell) would be constructed to provide means for the tunnel boring machine to enter or exit the tunnel (Figure 3). The Bayshore shaft would be a launch shaft for the tunnel boring machine, providing a portal for workers, equipment, materials, and supplies entering and leaving the tunnel during construction and removal of tunnel spoils. The Alemany and Boutwell shafts would be tunnel boring machine retrieval shafts.

The tunnel would be divided into two drives: North Drive and West Drive (Figure 3). The North Drive would extend from the Bayshore Shaft to the Boutwell Shaft, and the West Drive would extend from Bayshore Shaft to Alemany Shaft.

[3] The ground support method utilizing precast concrete segmental lining involves use of a tunnel boring machine where concrete segments are installed behind the tunnel boring machine to form a ring, which becomes the support structure of the tunnel.

[4] The concrete pipe jacking support involves constructing a concrete thrust slab in the shaft which would support the tunnel boring machine, allowing the machine to advance through the ground, creating a path for the pipe. The pipe is used to push the tunnel boring machine through the ground.

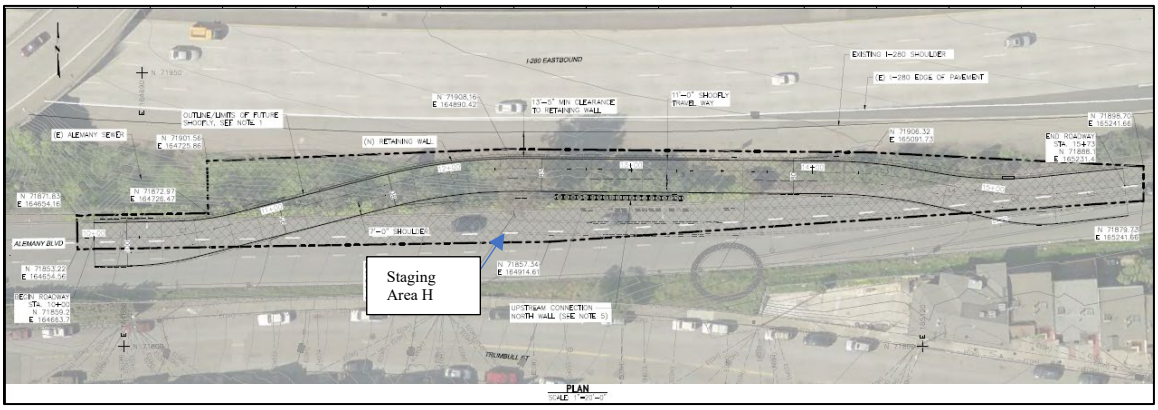


Figure 4. Temporary Paved Road (Shoofly) and Staging Area H

Prior to excavation activities at each shaft location, site preparation and utility relocation (including Pacific Gas and Electric Company [PG&E] gas and electric, power poles, and fiber optic lines) would be performed. Site preparation work would include clearing and grubbing and installation of temporary fencing around the work area. A temporary sound barrier would be installed along the south side of the Alemany staging area due to its proximity to sensitive receptors at this location (**Figure 5**). The temporary sound barrier would consist of H-piles placed in drilled holes (approximately 12 inches in diameter, 6 feet deep) and spaced approximately 8 feet apart. A noise absorbing fabric would be attached to the H-piles. The temporary sound barrier would be approximately 20 feet tall in order to reduce noise levels by a minimum of 10 decibels. The profile view of a typical sound barrier panel is shown in **Figure 6**.

Along the West Drive of the tunnel alignment, three small-diameter vent shafts (Stoneybrook, West View, and Bowdoin) and approximately 10 manholes would be installed via drilling methods. The purpose of these vent shafts is to allow air to enter the tunnel during initial filling (as a result of a large storm event) and when the tunnel is draining after the storm event. The vent shafts also allow air to be exhausted after the downstream end of the tunnel and box sewer fills and the Alemany auxiliary sewer fills to capacity. In addition, once tunneling work is completed, small vent shafts would be installed within the footprint of the Bayshore construction shaft and the Boutwell construction shaft. All above-grade vent shafts would be approximately 3 feet in diameter. The Stoneybrook vent shaft would be at grade, and the West View, Bowdoin, Bayshore, and Boutwell vent shafts would be approximately 3 feet above grade and have a dome-shaped cap. Due to proximity of the Bowdoin vent shaft to residences at the Gaven Street/Bowdoin Street intersection, temporary sound barriers would be installed during construction of the Bowdoin vent shaft in order to reduce noise levels by a minimum of 10 decibels (**Figures 7 and 8**).

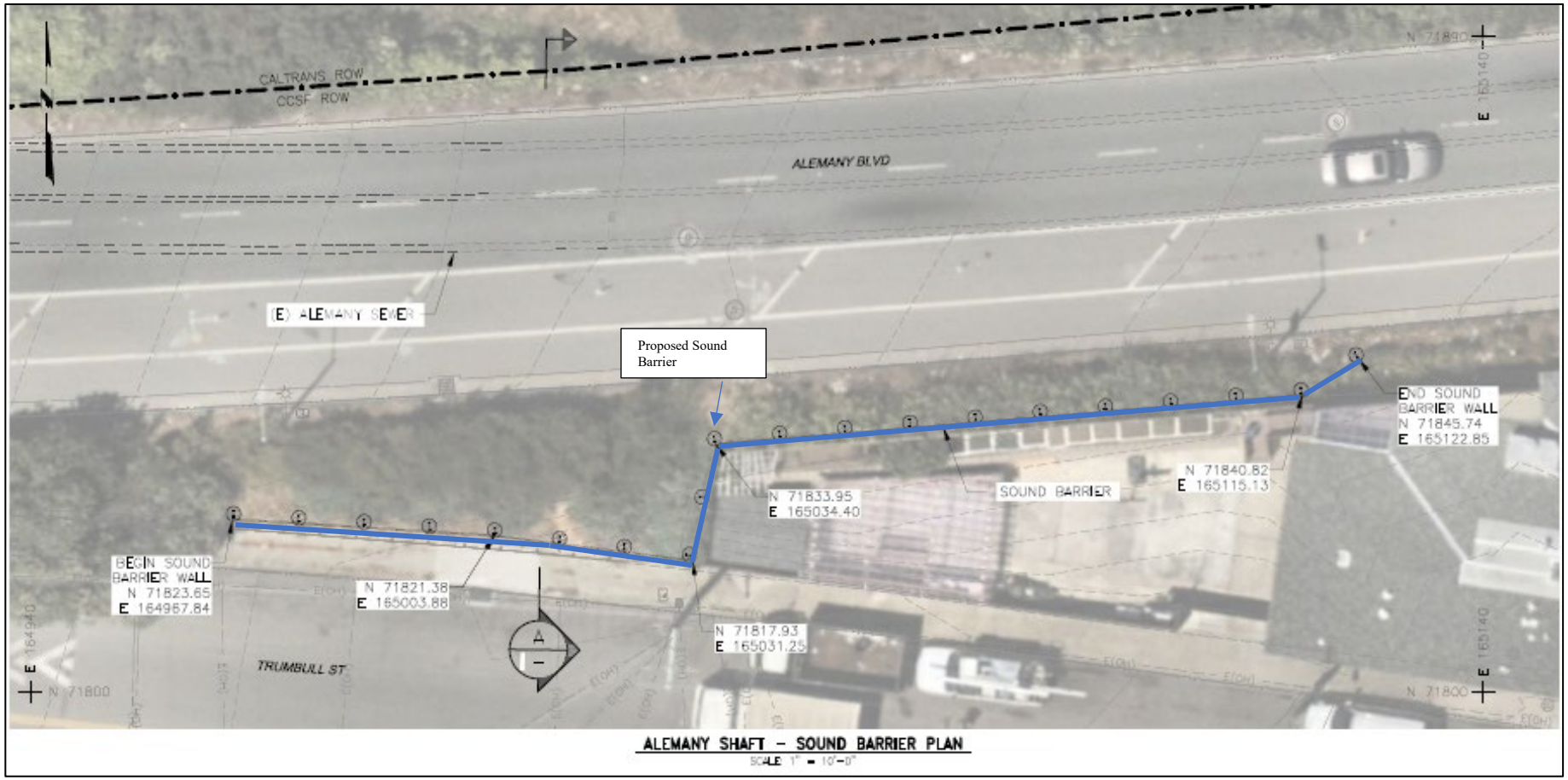


Figure 5. Plan View of Temporary Sound Barrier at Alemany Shaft Work Area

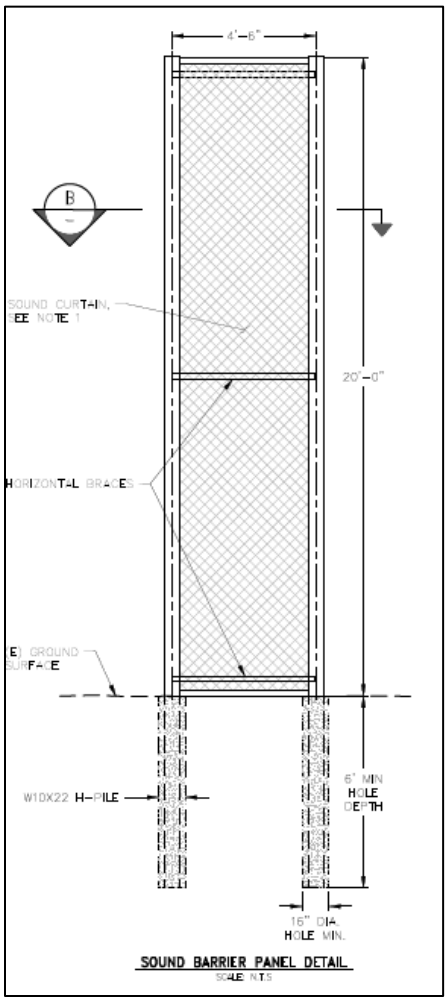


Figure 6. Profile View of Temporary Sound Barrier Panel at Alemany Shaft Work Area

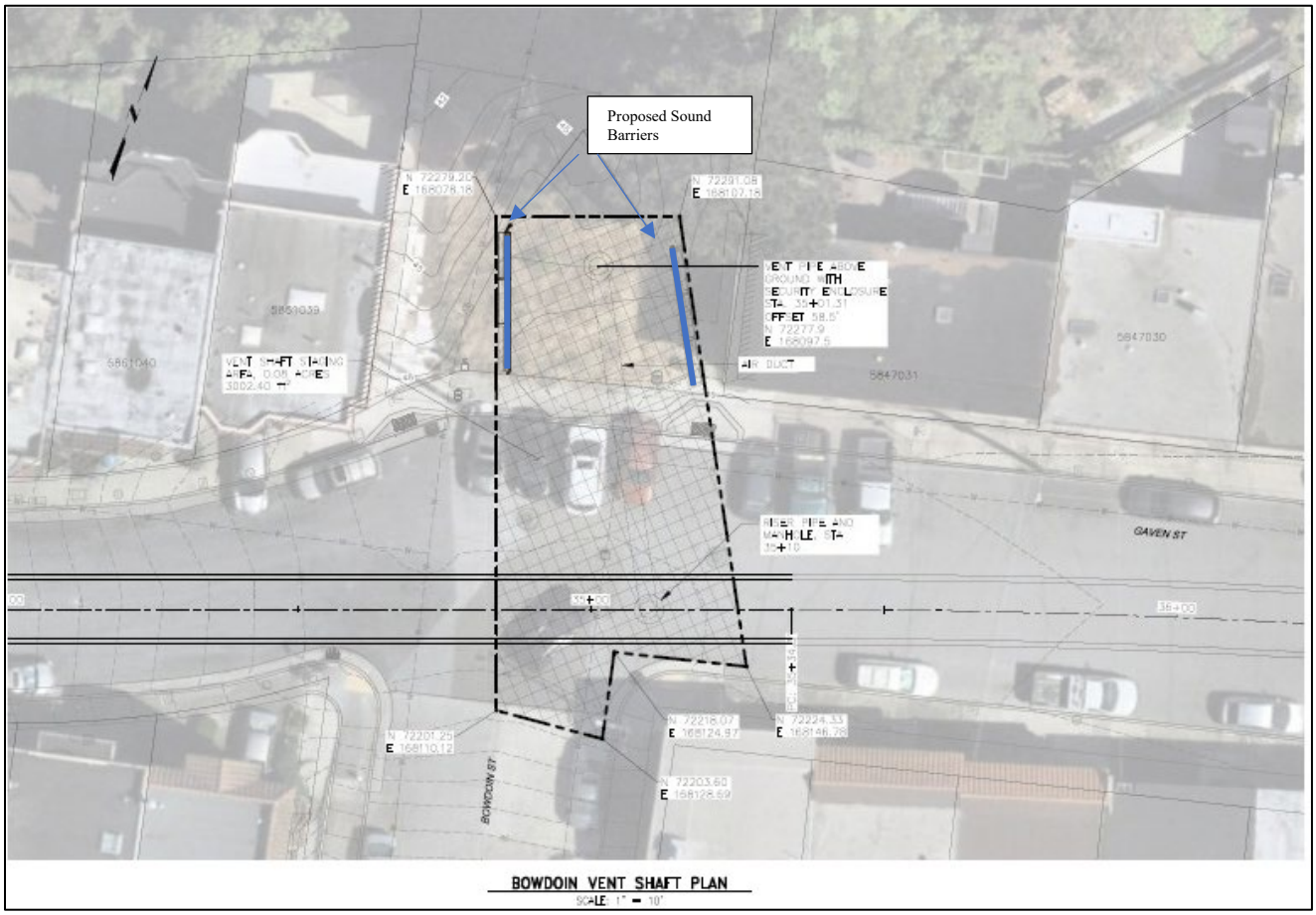


Figure 7. Proposed Sound Barrier Plan at Bowdoin Vent Shaft

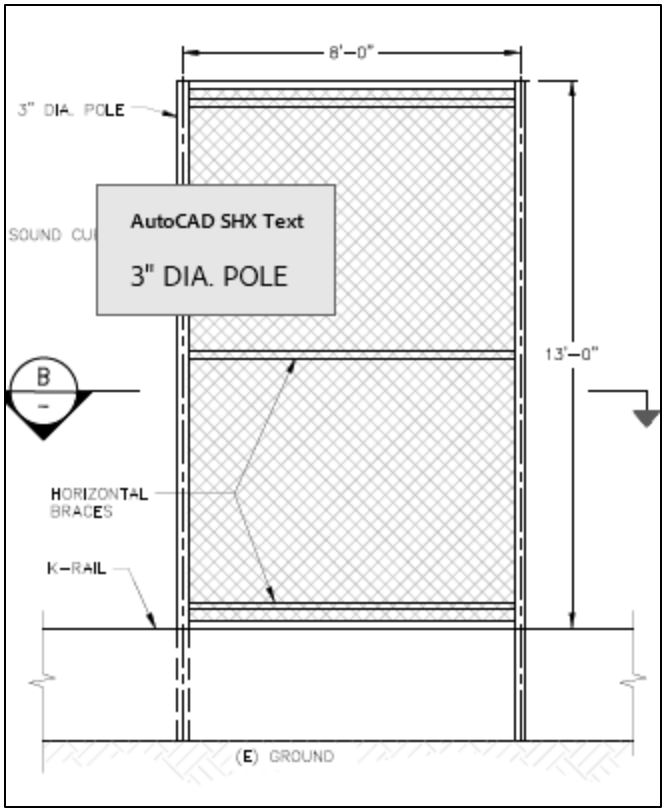


Figure 8. Profile View of Proposed Sound Barrier Panel at Bowdoin Vent Shaft

Approximately 61,800 cubic yards of soil and rock material would be excavated during tunnel and shaft excavation and construction of the shoofly; approximately 140 cubic yards would be reused onsite for the shoofly, requiring that the remaining 61,660 cubic yards be exported. The ground and excavated cuttings would be transported by pumping an engineered drilling fluid and slurry from the tunnel boring machine to the surface (within the Bayshore staging area). At the surface, the slurry would be fed through a slurry separation plant to remove the spoils/cuttings from the fluid. If an earth pressure balance tunnel boring machine is used, excavated material would be extracted via a screw conveyor and then transported underground by muck cars or a belt conveyor to the launch shaft. The muck material would then be placed into haul trucks and would subsequently be disposed of at a landfill (likely the Corinda Los Trancos Landfill in Half Moon Bay) or other designated disposal site. Contaminated muck would be placed in covered haul trucks and hauled offsite to an appropriate classification of landfill.

2.2.1.2 Box Sewer Portion

The box sewer portion of the Alemany auxiliary sewer would extend approximately 1,000 feet along Boutwell and Industrial Streets (between the Boutwell shaft and the existing Barneveld-Industrial connection structure). This portion of the alignment would consist of a single box sewer, 13 feet wide by 7 feet high.

Prior to installing the foundations for the box sewer, the median within Industrial Street near Big City Montessori School (at 240 Industrial Street) would be removed and a temporary sound barrier would be installed in order to reduce construction noise levels associated with drilling activities by a minimum of 10 decibels **(Figure 9)**. The sound barrier would be approximately 13 feet tall and 120 feet long. The sound barrier would be comprised of a noise-absorbing fabric that is attached to 3-inch diameter poles and horizontal braces. The poles would be attached to K-rail barriers that are pinned to the existing median. The temporary sound barrier would be in place during the pile foundation work. Several utilities would be relocated including PG&E gas and overhead electric lines, SFPUC water, sewer, and emergency firefighting water supply lines, and fiber optic lines. An overhead track for electrified buses running along Industrial Street would also be de-energized and relocated to the north side of Industrial Street; this work would be coordinated with the San Francisco Municipal Transportation Agency. Abandoned railroad/trolley tracks in Boutwell Street would also be removed.

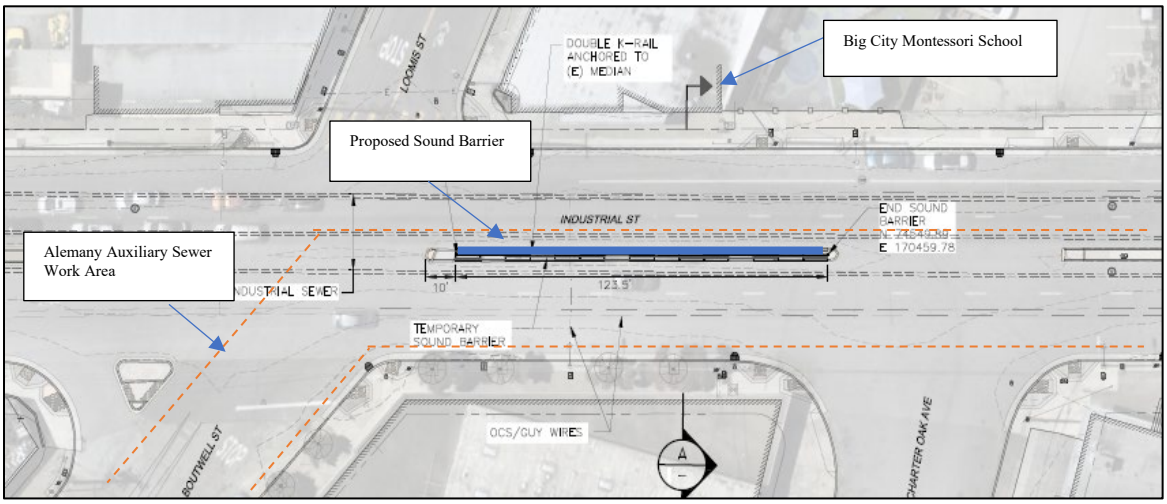


Figure 9. Proposed Temporary Sound Barrier Plan on Industrial Street

After installing the temporary sound barrier and relocating existing utilities, the general construction sequence for the box sewer would include the following:

- drilling and installing concrete pile foundations to support the new box sewer
- pre-drilling augured holes into the ground to minimize vibration effects associated with sheet pile installation
- installing sheet piles in pre-drilled auger holes using a crawling crane with vibratory hammer attachment
- installing the support of excavation for the cut-and-cover trench
- excavating the trench
- installing concrete foundation slab and box sewer via cast-in-place methods
- backfilling the trench, adding overburden fill, and repaving the road surface according to San Francisco Public Works (SFPW) Order No. 187,005.

Construction would start at the Barneveld-Industrial connection structure and advance west along Industrial Street and then south along Boutwell Street, ending at the Boutwell shaft. Some of the above-described construction activities would occur concurrently but at different portions of the alignment. Temporary lane closures would be required along Industrial Street throughout the duration of box sewer construction activities and would occur in coordination with San Francisco Municipal Transportation Agency (SFMTA); specific traffic requirements are summarized in Table 3.

Estimated trench dimensions and pile depths are described in Table 1. Approximately 25,000 cubic yards of spoil would be excavated and hauled off-site from the box sewer portion of the Alemany auxiliary sewer. Imported engineering fill material per San Francisco Public Works standard per SFPW Order No. 187,005 would be used as

backfill around the new box sewer. Approximately five manholes would be installed along the box sewer portion as construction progresses.

2.2.2 Upstream Sewer Connection

After the Alemany shaft is used for tunnel construction, the interior portion of the shaft would be built out, and a 75-foot-long diversion structure/connecting chamber would be built between the existing sewer and the shaft. Openings in the south and center walls of the existing sewer would be cut out to allow flows between the existing sewer and to the new auxiliary sewer. The main function of the diversion structure/connecting chamber and drop structure is to divert wet weather (stormwater) flows from the existing Alemany sewer to the deeper tunnel. The shaft would include a drop structure and an opening space for air release during filling. This opening space would also serve as an access point for inspections and maintenance after the Alemany auxiliary sewer is placed into service. The diversion structure/connecting chamber would be built in a braced trench under Alemany Boulevard.

2.2.3 Downstream Sewer Connection

A downstream connection would be established to convey stormwater flows from the new box sewer to the existing Industrial sewer and Islais Creek Transport/Storage via the existing Barneveld-Industrial connection structure. A 30-foot-long concrete wall that is part of the Barneveld-Industrial connection structure would be demolished, and the block-out structure south of the existing Barneveld-Industrial connection structure would be modified to facilitate connection with the new box sewer. The roof slab of the connection structure would be repaired in place.

2.2.4 Site Restoration

Following completion of the Alemany auxiliary sewer, construction shafts, upstream and downstream connections, and vent shafts, repaving of affected streets would be conducted. Existing curb ramps, traffic islands, and other surface features would be restored according to San Francisco Public Works Code. Staging areas would be restored to their general pre-construction condition. Staging areas A, H, and E, which would be within California Department of Transportation (Caltrans) right-of-way, would also be restored to their general pre-construction condition (including similar landscaping and irrigation). Fencing along the Caltrans right-of-way would also be restored.

2.3 Construction Details

2.3.1 Construction Schedule

Construction is anticipated to last approximately 38 months, with some overlap of construction phases along the project alignment. The estimated construction phasing schedule is provided in **Table 2**.

Table 2. Forecast Construction Phasing[5]

Construction Phase	Estimated Start Date	Duration (months)	Estimated End Date
Site Preparation – Bayshore Shaft	March 2026	1	March 2026
Utility Relocation at Bayshore	March 2026	1	April 2026
Bayshore Shaft Construction	April 2026	11	March 2027
Site Preparation – Alemany Shaft – Sound Wall	March 2026	0.7	March 2026
Site Preparation – Alemany Shaft	March 2026	1	March 2026
Utility Relocation at Alemany	March 2026	1	April 2026
Alemany Shaft Construction	April 2026	9	January 2027
Alemany Shaft – Shoofly Construction	April 2026	0.5	April 2026
Site Preparation – Boutwell Shaft	January 2027	0.3	January 2027
Utility Relocation at Boutwell	January 2027	1	February 2027
Boutwell Shaft Construction	February 2027	4	June 2027
Secondary Staging Areas Site Preparation	March 2027	2	May 2027
Geotechnical Instrumentation Installation	May 2026	6	October 2026
Geotechnical Instrumentation Removal	November 2028	3	February 2029
Assemble TBM Jacking Station at Bayshore – 1 of 2	February 2027	3	May 2027
Mine/Add Backup/Learning Curve – Bayshore to Alemany	May 2027	3	August 2027
TBM Excavation/Support – Bayshore to Alemany	August 2027	9	May 2028
Remove/Disassemble TBM/Transport – 1 of 2	May 2028	2	July 2028
Remove Utilities and Clean Tunnel – 1 of 2	July 2028	1	August 2028
Assemble TBM Jacking Station at Bayshore – 2 of 2	August 2028	2	October 2028
Mine/Add Backup/Learning Curve – Bayshore to Boutwell	October 2028	3	January 2029
TBM Excavation/Support – Bayshore to Boutwell	December 2028	0.6	January 2029
Remove/Disassemble TBM/Transport – 2 of 2	January 2029	2	March 2029
Remove Utilities and Clean Tunnel – 2 of 2	January 2029	1	February 2029
Site Preparation – Open Cut Work	September 2026	0.5	September 2026
Open Cut Construction and Restoration – Alemany Diversion	September 2026	25	October /2028

[5] "TBM" signifies tunnel boring machine

Construction Phase	Estimated Start Date	Duration (months)	Estimated End Date
Open Cut Construction and Restoration – Barneveld-Industrial Connection Structure	September 2026	25	October 2028
Open Cut Construction and Restoration – Box Sewer	September 2026	25	October 2028
Modification and Connection to Barneveld-Industrial Connection Structure	October 2026	4	February 2029
Upstream Connection Construction	January 2027	6	July 2027
Boutwell Shaft Cast-in-Place Transition Structure	January 2028	1	February 2028
Bayshore Shaft – Permanent Structure	August 2028	5	January 2029
Alemany Shaft – Permanent Structure	June 2028	7	January 2029
Weekend Maintenance[a]	May 2027	20	January 2029
Vent Shaft – Stoneybrook	January 2029	2	February 2029
Vent Shaft – Westview	March 2029	2	April 2029
Vent Shaft – Bowdoin	December 2028	0.8	December 2028
Total [a]	**March 2026**	**38**	**April 2029**

Source: Delve Underground September 2024

Notes:

[a] For the purposes of this analysis, it is assumed limited weekend work may be required (up to 25 percent of Saturdays and 5 percent of Sundays). Weekend work would involve minor surface and underground work, cutter changes to the tunnel boring machine, or work of similar nature.

[b] Due to overlap of phases, as shown in the start and end dates, total duration is not a sum of the individual construction phases. Exact schedule is based on best available information and subject to change.

Project activities would primarily be conducted between 7:00 a.m. and 7:00 p.m., Monday through Friday. Some weekend work (up to 25 percent of Saturdays and 5 percent of Sundays) may be required. Weekend work would involve minor surface or underground work, cutter changes to the tunnel boring machine, or work of similar nature.

Activities associated with connecting a relocated water line to existing 8-inch water mains would occur at night at four areas along Industrial Avenue and Boutwell Street. The connection work would take one night at each location and work is anticipated to take approximately four hours on average but could take up to nine hours. In addition, activities associated with temporarily relocating SFMTA's overhead electric MUNI lines along Industrial Street would occur at night over a total of 50 days. The overhead electric line relocation work would occur in the vicinity of the Boutwell Street and Industrial Street intersection between 12:00 a.m. and 4:00 a.m. and includes approximately 27 consecutive nights to relocate electric lines to the northern side of Industrial Street, 4 consecutive nights to de-energize the lines, and 19 consecutive nights to restore the lines to pre-construction conditions.

In an effort to reduce noise levels at the Big City Montessori School, repaving of Industrial Street would occur on Saturday and Sunday.

2.3.2 Construction Workforce and Equipment Staging Areas

Between six and 32 workers would be required to support each construction phase per day; some construction phases would occur concurrently along the project alignment.

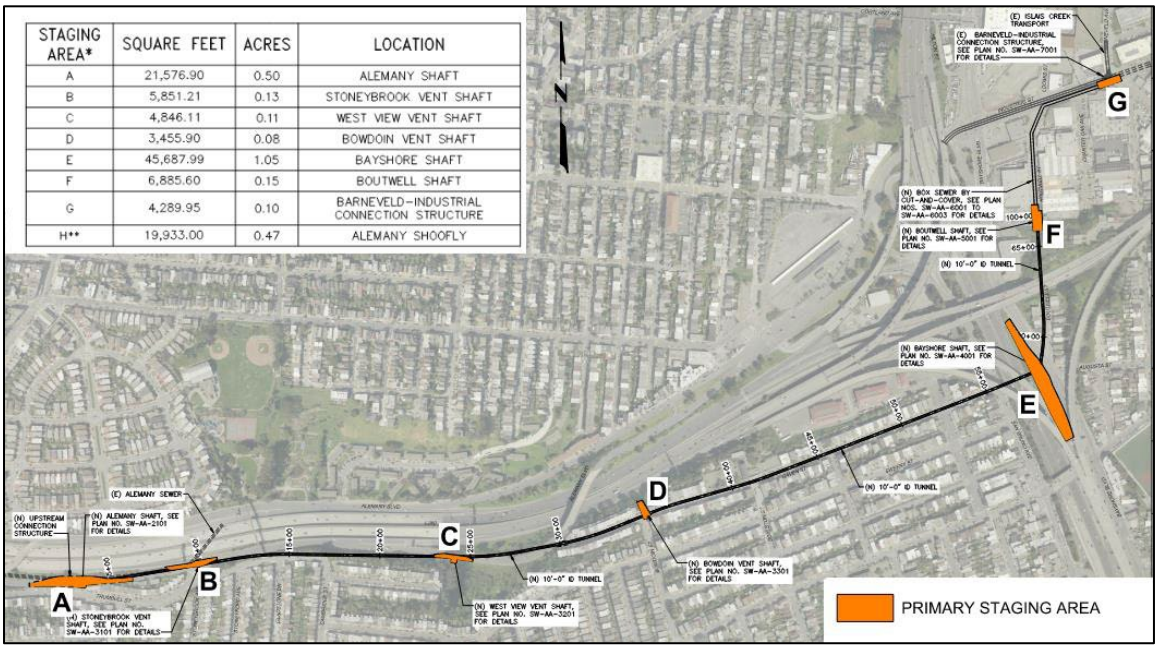
The following types of construction equipment are proposed for use:

- Alimak elevator
- Asphalt truck
- Backhoe
- Bulldozer
- Compressor
- Concrete pump truck
- Crane
- Delivery trucks
- Drill rig / Secant pile drill rig
- Drum roller
- Generator
- Grout plant
- Loader
- Locomotive
- Paver
- Pump
- Scissor lift
- Shaft carousel
- Shotcrete plant
- Tunnel boring machine
- Vibratory roller
- Water treatment plant
- Welder

2.3.3 Site Access and Construction Staging Areas

Access to construction work areas would take place on city streets. Temporary staging areas would be established to store equipment and materials, and to park worker crew members' vehicles at eight primary staging areas (A-H) and at six secondary staging areas (1-6).6 Prior to construction, vegetation clearing, scraping and grading may be needed at staging areas A, C, D, E, H, 1 and 6. Removal of small trees would be required at Staging Areas A, E, and H; tree trimming would be required at Staging Areas C and D. **Figures 10 and 11** show the locations and boundaries of the proposed primary and secondary staging areas, respectively. **Figure 12** shows the anticipated equipment layout for the Bayshore staging area (staging area E) during the tunneling phases. **Figure 13 through 15** show existing condition photos of staging areas A, E and F.

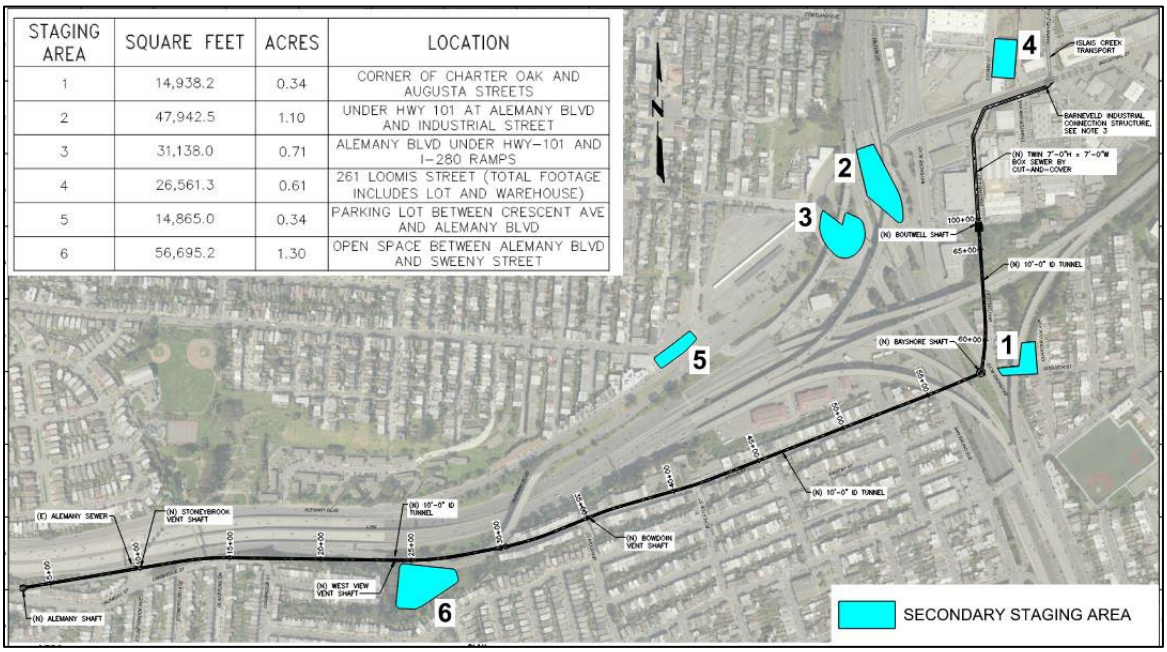
[6] Primary staging areas would be used for equipment laydown for various construction activities including shaft construction, launching and receiving of the tunnel boring machine, construction of the shoofly and upstream and downstream sewer connections. Potential off-site secondary staging areas have been identified for temporary storage of additional construction materials (not all secondary staging areas would be utilized).



STAGING AREA*	SQUARE FEET	ACRES	LOCATION
A	21,576.90	0.50	ALEMANY SHAFT
B	5,851.21	0.13	STONEYBROOK VENT SHAFT
C	4,846.11	0.11	WEST VIEW VENT SHAFT
D	3,455.90	0.08	BOWDOIN VENT SHAFT
E	45,687.99	1.05	BAYSHORE SHAFT
F	6,885.60	0.15	BOUTWELL SHAFT
G	4,289.95	0.10	BARNEVELD-INDUSTRIAL CONNECTION STRUCTURE
H**	19,933.00	0.47	ALEMANY SHOOFLY

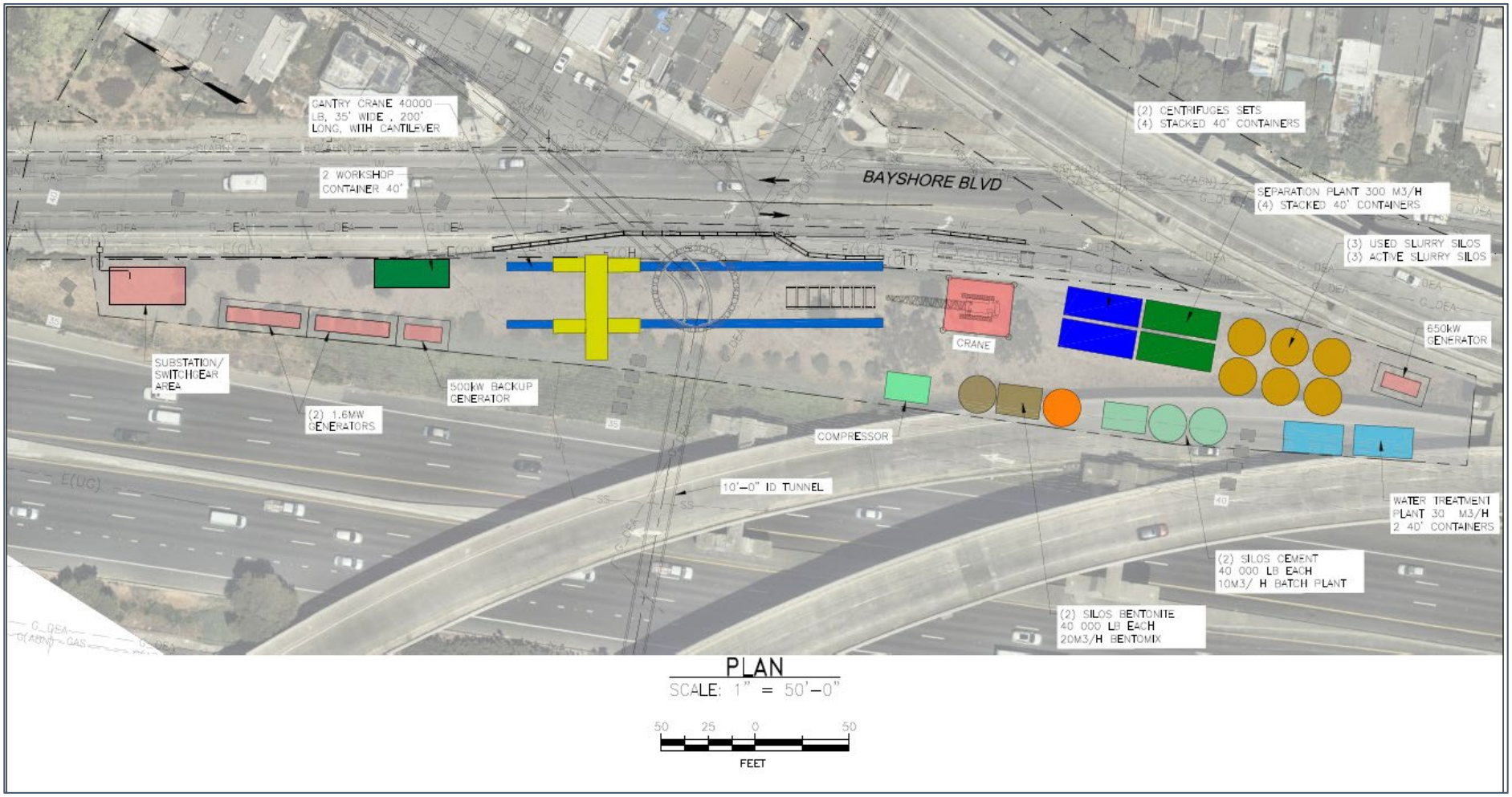
** Staging Area H not shown for clarity; limits of Staging Area H shown in Figure 4.

Figure 10. Primary Staging Areas



STAGING AREA	SQUARE FEET	ACRES	LOCATION
1	14,938.2	0.34	CORNER OF CHARTER OAK AND AUGUSTA STREETS
2	47,942.5	1.10	UNDER HWY 101 AT ALEMANY BLVD AND INDUSTRIAL STREET
3	31,138.0	0.71	ALEMANY BLVD UNDER HWY-101 AND I-280 RAMPS
4	26,561.3	0.61	261 LOOMIS STREET (TOTAL FOOTAGE INCLUDES LOT AND WAREHOUSE)
5	14,865.0	0.34	PARKING LOT BETWEEN CRESCENT AVE AND ALEMANY BLVD
6	56,695.2	1.30	OPEN SPACE BETWEEN ALEMANY BLVD AND SWEENY STREET

Figure 11. Secondary Staging Areas



Note: Colors in figure represent types of equipment that would be laid out onsite.

Figure 12. Bayshore Shaft Staging Layout for Tunneling

Figure 13. Photos of Staging Area A (Alemany Staging Area) Looking East (left) and Northeast (right)

Figure 14. Photos of Staging Area E (Bayshore Staging Area) Looking North (left) and South (right)

Figure 15. Photos of Staging Area F (Boutwell Staging Area) Looking North (left) and South (right)

2.3.4 Traffic Requirements

Pursuant to SFPUC Standard Construction Measure 4 (also see sections 2.5 and 3.4, below), site-specific traffic control measures would be developed in coordination with SFMTA to manage traffic during project construction. Table 3 summarizes the SFMTA's traffic requirements along the Alemany auxiliary sewer alignment, which are based on the Analysis Alternative Report issued by SFPUC in 2020 and the 2022 traffic counts conducted along Alemany Boulevard and surrounding streets. Lane requirements are based on the Project's conceptual plans and are subject to change. Impacts to local MUNI lines are anticipated and coordination with SFMTA would continue during the design phase in order to meet the SFMTA requirements identified in Table 3.

Table 3. Traffic Requirements and Restrictions During Construction

Site and Street	Traffic Requirements
Alemany Shaft	
Alemany Boulevard (approximately 400 feet between Congdon Street and Stoneybrook Avenue)	Maintain one through lane on Alemany Boulevard eastbound via the proposed shoofly (temporary road to the north) at all times during construction. Bike lane on Alemany Boulevard between Congdon St. and Stoneybroook Ave. will be moved to Trumbull Street with new signals at Congdon Street.
Bayshore Shaft	
Bayshore Boulevard/ Caltrans-Owned Shoulder	One traffic lane and one bike lane in each direction (northbound and southbound) at all times.
West View Vent Shaft	
Gaven Street	Two-way traffic maintained at all times.
Box Sewer	
Boutwell Street between Boutwell Shaft (end of block) and Industrial Street	Street closed during working hours (7:00 am – 7:00 pm, Monday through Friday and some weekends); coordinate with local businesses for local access via adjacent streets (Bayshore Boulevard and Charter Oak Avenue).
Industrial Street between Boutwell Street and Barneveld Avenue	Work will require converting one westbound lane into an eastbound lane to ensure one lane in each direction at all times. Some median demolition will be required for proper transitions for bus maneuver (Muni 24 bus runs over 24-hour period); coordination with Muni would be ongoing during construction. Parking on either side of street prohibited during construction.
Industrial Street between Boutwell Street and Bayshore Boulevard	One lane open eastbound; full roadway westbound at all times (portion of westbound lanes would be temporarily affected by the median removal).
Charter Oak Avenue	Two-way traffic maintained at all times.

In addition to the temporary lane and street closures shown in Table 3, other traffic control measures would include parking restrictions. Temporary signage and flaggers would be used, and temporary barriers could be erected on heavily trafficked streets. While lanes on certain streets would be closed to the public, local access to residences and businesses would be coordinated and maintained for property owners and emergency services. Local access would be prioritized for emergency vehicles and property owners without alternative access on the opposite blocks such as the property owner at 1 Boutwell Street. As noted in Table 3, the SFPUC and the construction

contractor would coordinate with the SFMTA to minimize disruption and delay of traffic movement and transit service on affected streets.

2.4 Operations and Maintenance

Once construction is completed, SFPUC staff would inspect the Alemany auxiliary sewer approximately once per year before the start of the wet season or when a problem is detected after a large storm event. SFPUC staff would access the auxiliary sewer via a removable panel on Boutwell Street, which would be constructed as part of the project. The sewer has been designed with a slope to maintain a flow velocity to keep the sewer free of debris. However, if large debris has entered the tunnel (e.g., wood, bikes, shopping carts), occasional debris removal may be required.

Limited sediment removal work may need to be performed an estimated frequency of once every 10 to 20 years. Such work would involve use of a skid steer loader, crane, winch, blowers, and/or jetter or vacuum truck. Each maintenance event would last approximately one to three days and involve removal of approximately 10 cubic yards of sediment and debris. The removeable panels into the box sewer along Boutwell Street would be used as the main entry point. As described above, manholes would be installed at various vent shaft locations along the tunnel; they would be used for venting and communicating with the workers in the auxiliary sewer. The small-diameter manholes and/or vent shafts could be used to lower small tools if needed in the tunnel portion. Manholes would be provided at a general spacing every 300 feet along the box sewer for access. Clearing accumulated sediment in the Alemany auxiliary sewer would be done entirely from the Boutwell Street box sewer.

2.5 SFPUC Standard Construction Measures (SCMs)

The SFPUC requires the Standard Construction Measures issued July 1, 2015 (on file at the Environmental Planning Division) be implemented for all projects, as applicable. The objectives of the SCMs are to reduce adverse environmental effects on existing resources during construction. The SCMs include activities such as early identification of sensitive environmental resources in the project area and incorporation of standard environmental best management practices into construction, such as implementing dust control measures to protect air quality, sediment and erosion control measures to protect water quality, and compliance with all local, State, and federal requirements regarding the transport, use, and hazardous materials disposal. These measures would be applied to this Project as well.

2.6 City Ordinances

The Project would be subject to compliance with the City and County of San Francisco's ordinances. There are multiple ordinances designed to minimize environmental effects during construction. Principal among these applicable to the Project would be:

- San Francisco Environment Code Chapter 25, Clean Construction Ordinance, which establishes requirements for project sites in the Air Pollutant Exposure Zone;

- Ordinance No. 27-06, Construction and Demolition Debris Recovery Program, which requires that a minimum of 65 percent of a project's mixed construction and demolition debris be diverted from landfills (i.e., brought to a registered facility for recycling);
- San Francisco Health Code Article 22B: Construction Dust Control Ordinance;
- San Francisco Health Code Article 22A: Maher Ordinance (addressing subsurface hazardous materials); and
- Article 29 of the San Francisco Police Code, Noise Ordinance, which limits noise level from any one piece of equipment to 80 dBA at 100 feet (except impact equipment) and establishes allowable construction hours as 7 a.m. to 8 p.m.

2.7 Regulatory and Other Project Permits and Approvals

There are no waters of the U.S. or State within the Project footprint. Therefore, the Project would not require a Clean Water Section 404 permit, Clean Water Act Section 401 Water Quality Certification, or Streambed Alteration Agreement. The Project is applying for Clean Water State Revolving Fund financing from the State Water Resources Control Board, which could include consultation with the U.S. Fish and Wildlife Service and State Historic Preservation Officer, as it deems necessary. The Project may also apply for funding from the U.S. Environmental Protection Agency (EPA) through the Water Infrastructure Finance and Innovation Act.

Prior to conducting work within Caltrans right-of-way, the project would be required to obtain an encroachment permit from Caltrans. The construction contractor would also obtain a construction site runoff control permit and batch wastewater discharge permit from the SFPUC's Wastewater Enterprise/Collection System Division (to protect water quality).

3. Environmental Information

3.1 Introduction

The following sections describe the potential environmental effects of the Project and were selected to provide context and to determine whether the Project meets any of the exceptions to using a categorical exemption listed under CEQA Guidelines Section 15300.2.

First, CEQA Guidelines Section 15300.2 states "Classes 3, 4, 5, 6, 11 and 32 are qualified by consideration of where the project is to be located... Therefore, these classes are considered to apply (sic) all instances, except where the project may impact an environmental resource of hazardous or critical concern where designated, precisely mapped, and officially adopted pursuant to law by federal, state, or local agencies." Based on the analysis presented in Sections 3.2 through 3.11, the Project is not located in an area of special significance; therefore, this exception does not apply.

Secondly, CEQA Guidelines Section 15300.2 states that a categorial exemption shall not be applied when the cumulative impact of successive projects of the same type in the same place, over time is significant. As described in Section 3.7 (Air Quality), the closest cumulative project is a residential development project (4100 Mission Street) that is approximately 1,800 feet (0.34 mile) away from the Project site. There are no cumulative sewer infrastructure projects of the same type within the Project site; therefore, this exception does not apply. For additional discussion regarding cumulative health risk impacts, see Section 3.7.3.1.

CEQA Guidelines Section 15300.2 also states that a categorical exemption shall not be applied to a project in the following circumstances: (1) a project which may result in damage to scenic resources, including but not limited to, trees, historic buildings, rock outcropping, or similar resources, within a highway officially designated as a scenic highway; (2) a project located on a site which is included on any list of hazardous waste sites compiled pursuant to Section 65962.5 of the Government Code; and (3) a project which may cause a substantial adverse change in the significance of a historical resource. Sections 3.2 (Aesthetics), 3.11 (Hazards and Hazardous Materials), and 3.4 (Cultural Resources), address these topics respectively, and describe how the Project would not meet the above-listed circumstances for exceptions.

In addition, the CEQA Guidelines Section 15300.2 states that a categorical exemption shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances. The Project would be located within paved streets, underneath U.S. 101, parking lots, vacant industrial lots, or in open space within the public right-of-way. The Project is similar to other pipeline construction projects throughout the City, including recent tunnel constructions such as the WW-711 Wawona Area Stormwater Improvement and Vicente Street Water Main Replacement Project and the Folsom Area Stormwater Improvements Project. Based on the nature of the Project and its location, there are no unusual circumstances surrounding the Project that would suggest a reasonable possibility of a significant effect.

3.2 Land Use

The Project is in the Lower Alemany neighborhood of San Francisco. Land uses in the project vicinity vary given the linear nature of the Project's footprint along two major transportation highways. A mix of commercial, industrial, single-family and multi-family residential uses surround the eastern portion of the Project (east of U.S. 101). West of U.S. 101 and south of I-280, land uses surrounding the Project are predominantly residential, with some commercial uses mixed in.

The Project would be constructed in accordance with the City's existing plans, policies, and regulations, such as the Clean Construction Ordinance, Construction and Demolition Debris Recovery Ordinance, Construction Dust Control Ordinance, San Francisco General Plan, the Bayview Hunters Point Area Plan of the San Francisco General Plan, and all other applicable local, State and federal laws such that there would be no conflict with applicable land use policies and objectives. The project would include construction of a new belowground auxiliary sewer to address historic flooding issues and meet the SFPUC's Level of Service goals in the Lower Alemany neighborhood. The

only permanent aboveground infrastructure would be four vent shafts (approximately 3 feet tall and 3 feet wide). These minor facilities would not physically divide a community or conflict with any plan, policy or regulation adopted for avoiding or mitigating an environmental impact.

For these reasons, no significant impacts to land use would occur.

3.3 Aesthetics

There are no designated scenic vistas in the project vicinity from which the Project site would be visible. There are no officially designated scenic highways near the Project site, though the portion of I-280 near the Project site is considered eligible for designation as a State scenic highway.[7]

Construction activities and materials such as equipment and excavated spoils would be temporarily stored at staging areas described in the project description. Due to the speed of travel, motorists traveling on I-280 would have fleeting views of construction activities occurring within the Alemany staging area (staging areas A and H) and the temporary road realignment (shoofly). Motorists, bicyclists and pedestrians passing by the work areas would also have temporary views of staging areas and construction activities along Alemany Boulevard, Bayshore Boulevard, Gaven Street, Boutwell Street, and Industrial Street. In addition, the Project would implement SFPUC Standard Construction Measure 8, which would require the site and staging areas to be maintained in a clean and orderly state. With implementation of Standard Construction Measure 8 and because public views of the work areas would be fleeting (for motorists traveling on I-280) and temporary (for other passerby motorists, bicyclists, and pedestrians), the change in the aesthetic environment during construction would be temporary, and much of the work would be below grade and would not be visible. Therefore, no significant impacts related to damage to scenic resources and aesthetics during construction would occur.

Once construction is completed, most permanent Project facilities would be belowground and, as indicated above, the road surface would be restored to SFPW standards. The only aboveground project elements include four vent shafts that would be approximately 3 feet tall and 3 feet in diameter. As described above in Section 2, Project Description, these structures would be concrete and have a dome-shaped cap. The vent shafts would not be visible from any scenic roads or scenic vistas. Although the vent shafts would be visible from nearby public roads (e.g., Alemany Boulevard, Gaven Street, Bowdoin Street, Boutwell Street, and Bayshore Street), they are characteristic of other utility infrastructure commonly seen in urban environments. For this reason and due to the speed of travel of viewing motorists along nearby roads and their small scale, the vent shafts would not degrade public views of the surrounding area.

As noted above, ongoing maintenance of the Alemany auxiliary sewer (debris and sediment removal) would occur infrequently. Such activities would be performed in the vicinity of the shafts and manholes along the sewer alignments. Although equipment and

[7] California Department of Transportation. 2025. California State Scenic Highway System Map. Available: https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aacaa. Accessed January 3, 2025.

maintenance activities would be publicly visible, this work would be short in duration (one to three days) at any one location.

Therefore, no significant impacts related to aesthetics would occur.

3.4 Cultural Resources

In accordance with SFPUC Standard Construction Measure 9, the project was screened to assess if cultural resources are present and would be affected. For the reasons discussed below, the Project would not have a significant impact on cultural resources.

3.4.1 Archaeological Resources

Qualified archaeologists (from SF Planning and the environmental consulting firm AECOM) reviewed the project for potential effects on archaeological resources.[8,9] The Project's area of potential effects (APE) is linear and somewhat discontinuous. The Project's horizontal APE contains the entire project footprint, which consists of the Alemany auxiliary sewer, and the associated shafts, connections, and open-trench box sewer, primary and secondary staging areas, and the temporary shoofly. The subsurface vertical APE is the maximum depth of project disturbance for the various components, which is 103 feet below ground surface for the Alemany auxiliary sewer, 40 feet for the piles associated with the box sewer, and 80 feet belowground surface for the Alemany shaft.

3.4.1.1 Background Research Summary

Background research included a records search at the California Historical Resources Information System (CHRIS) Northwest Information Center (NWIC), a review of historical maps, historical aerial photographs, soils data, geologic mapping, and review of San Francisco Planning Department's cultural resources database.

The NWIC records search identified one Native American archeological resource in the APE, CA-SFR-3 – a Native American shellmound site on the south bank of Islais Creek, north of Sweeny Street. A second Native American archeological resource, CA SFR-17, was identified approximately 80 feet north of the APE. However, based on review of archival data and field observations, the plotting of CA-SFR-3 appears to be incorrect and the result of mis-plotting of CA-SFR-17, and is actually not within the APE.

According to the citywide archeological sensitivity model, most of the APE is ranked as moderate to high sensitivity for surface Native American archeological resources, with the eastern and western extents mapped as highest sensitivity. However, based on AECOM's site investigations and San Francisco Planning Department's archaeological review, the APE has lower sensitivity than what is identified in the citywide archeological sensitivity model. Most of the APE is ranked as lowest to moderate sensitivity for buried or submerged Native American archeological resources. The portion of the APE along

[8] AECOM. 2024. Cultural Constraints Analysis for the San Francisco Public Utilities Commission's Lower Alemany Stormwater Improvements Project in the City and County of San Francisco, California. December 30.

[9] Hervey-Lentz, Kari. 2023. San Francisco Planning Department, Environmental Planning Division Preliminary Archeological Checklist for SFPUC Lower Alemany Stormwater Improvements Project. Case number 2023-000654ENV. On file at San Francisco Environmental Planning.

Gaven Street between approximately Merrill Street and U.S. 101 is mapped as high or highest sensitivity for buried resources, while the northeastern extent of the APE along Boutwell Street and north of Industrial Street, is mapped as high sensitivity for submerged resources.

3.4.1.2 Field Surveys

AECOM's archaeologist Jay Rehor, M.A. conducted pedestrian surveys of the APE on June 1, 2022, and October 30, 2024, with special attention paid to the previously mapped sites CA-SFR-3 and CA-SFR-17 as well as areas of exposed ground surface including all proposed staging areas. The survey revealed that the location of CA-SFR-3 is a large steep hill/scarp that appears to be either landslide colluvium (if a naturally occurring scarp) or local fill material. No evidence of CA-SFR-3 was encountered during the survey. Based on a review of historic mapping, it appears that the natural stratigraphy at this location is a very steep hillside adjacent to the Islais Creek slough. As such, it is an unlikely location for a prehistoric shellmound, even if historic-era and modern grading have obscured the original ground surface.

Exposed ground surface in the vicinity of CA-SFR-17 was also inspected. Field inspections were limited to a few small, landscaped areas on both sides of Gaven Street, and a long linear planting strip/fence line along the property boundary of the Caltrans maintenance yard on Rickard Street. No shell, darkened soil, or any other indications of prehistoric cultural materials were observed along Gaven Street.

3.4.1.3 Geotechnical Monitoring

As part of the Project's design process, a geotechnical investigation was conducted with the purpose of obtaining subsurface information to assess ground and groundwater conditions for project design. During the geotechnical investigation, SFPUC implemented Standard Archeological Measure II (Archeological Monitoring) during geotechnical coring. One core was placed on the northeast boundary of CA-SFR-3. The stratigraphic profile consisted of approximately 9 feet of fill, directly overlying weathered Franciscan bedrock—supporting the theory that the area was once a topographic low point that was filled in the early 20th century. Four cores were placed in the vicinity of CA-SFR-17 and spoils from the upper 5 feet were screened. The underlying stratigraphy consisted of older Pleistocene geomorphic units (old dune sand, Colma Formation, or Franciscan bedrock) capped by asphalt and fill, with no indication of soil development or an intact land surface, except in one bore (DB-07). The vast majority of this area appears to have been heavily graded. No archeological resources were observed by AECOM during any of the geoarcheological monitoring or sample inspection, indicating that the location is not sensitive for archaeology.

3.4.1.4 Conclusion

Based on the above-described findings and project review by the San Francisco Environmental Planning Department,[10,11] the Citywide sensitivity model appears to be

[10] Hervey-Lentz, Kari. 2023. San Francisco Planning Department, Environmental Planning Division Preliminary Archeological Checklist for SFPUC Lower Alemany Stormwater Improvements Project. Case number 2023-000654ENV. On file at San Francisco Environmental Planning.

incorrect for buried sensitivity in this area, as it is based on a geologic unit ("undifferentiated Quaternary alluvium") incorrectly assumed to be Holocene age, while observation of geotechnical cores indicates that the underlying landform is of Pleistocene age (i.e., too old to reasonably contain buried archaeological deposits). Previously recorded archeological site CA-SFR-17 does not appear to extend into the project alignment. Furthermore, even if the site extends into Gaven Street, deep tunneling is proposed in the vicinity of CA-SFR-17; the tunneling would be significantly deeper than any resources potentially associated with the site. As such, the Project area is expected to have low sensitivity for buried archeological resources and all Project segments have low potential to adversely affect archeological resources.

SFPUC Standard Construction Measure 9, Archaeological Measure I (Unanticipated Discovery) is included in the Project to address the potential for archaeological discoveries during construction. This measure requires resources protection and assessment measures to be implemented in the event of a discovery during construction. Archaeological Measure II (monitoring) and/or Archaeological Measure III (Testing/Data Recovery) would be implemented in the event of a discovery during construction.

With the inclusion of these measures, no significant impacts to archaeological resources would occur.

Future maintenance activities would be performed from access points along the Alemany Auxiliary Sewer. Debris and sediment removal would not result in ground disturbance and therefore not result in adverse effects to archaeological resources.

3.4.2 Historic-Era Resources

Based on the results of archival research and field survey, the only built environment resources located in the APE are a segment of the San Francisco Fire Department's Auxiliary Water Supply System, which was previously evaluated for listing in the National Register of Historic Places and California Register of Historic Resources and determined to be a non-contributing feature[12] Approximately 300 feet of the Auxiliary Water Supply System pipeline would be relocated as part of the project but since this segment is not eligible for listing in the National Register of Historic Places nor in the California Register of Historic Resources, relocation of this pipeline would not result in adverse effects to historic-era resources. Due to the design of the project which, aside from four aboveground 3-foot-by-3-foot concrete vent caps, is limited to deep subsurface impacts below existing streets, the potential for other effects to historic-era built environment resources is extremely limited. As a result, no significant impacts to historic-era resources would occur.

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[11] San Francisco Planning Department, personal communication from Allison Vanderslice to Allison Chan regarding Preliminary Archaeological Checklist and updated project description review, December 24, 2024.

[12] Rusch, Jon, Stacy Farr, Andrea Dumovich, and Amanda Reese. 2018. Department of Parks and Recreation 523 Series Forms for the San Francisco Auxiliary Water Supply System. On file at San Francisco Environmental Planning.

3.4.3 Architectural Historical Resources

The records search identified fourteen historic-period buildings, part of the Stonecrest Defense Workers Housing District, within 0.25-mile of the APE on Stoneybrook Avenue, Stoneyford Avenue, Trumbull Street, Ney Street, and Maynard Street. The building at 1 Stoneybrook Avenue, the nearest contributing building to the APE (status code 2S2: individual property determined eligible for listing in the National Register of Historic Places by a consensus through Section 106 process; listed in the California Register of Historic Resources), is approximately 100 feet to the south. The Portola Baptist Church is also within 0.25-mile of the APE on Pioche Street. In addition to these resources, a review of the City's property information map online database indicates the California Register of Historic Resources and National Register of Historic Places-eligible former 1928 Salvation Army Territorial Training College campus is present within 0.25-mile of the APE on the 800 block of Silver Avenue (NRHP status code 3S: appears eligible for NRHP as an individual property through survey evaluation). Due to distance from the Project's construction work areas, none of the identified buildings would be physically impacted by the Project. In addition, based on the Project's construction-related vibration impact analysis provided in Section 3.6.4.4, the maximum estimated vibration levels at structures due to tunneling would be 0.10 PPV, inches/second. The estimated vibration level is below Caltrans' vibration guidelines for potential damage to historic buildings, which is 0.25 PPV inches/second.

Because the project primarily involves underground sewer infrastructure with no impacts to nearby buildings or structures, a separate APE for historic architecture was not developed. Permanent above ground appurtenances related to the project are limited to small concrete caps surrounding the top of four permanent aboveground vent shafts (West View, Bowdoin, Bayshore, and Boutwell). These enclosures would be approximately 3 feet tall and 3 feet in diameter. The vent caps are of a similar scale and utilitarian design to existing street infrastructure (bollards, fire hydrants, utility boxes, etc.) and therefore would not change the setting of any of the adjacent neighborhoods. No significant impacts to architectural historic resources would occur.

3.5 Transportation and Circulation

3.5.1 Setting

Primary roadways in the Project area that would be subject to construction activity include Alemany Boulevard, Bayshore Boulevard, Industrial Street, Boutwell Street, and Gaven Street. In the Project area, Alemany Boulevard is a one-way eastbound roadway with two lanes and provides access to an I-280 northbound onramp (the westbound portion of Alemany Boulevard is north of I-280). Alemany Boulevard connects with Industrial Street and Bayshore Boulevard to the northeast near the I-280/U.S. 101 interchange. Bayshore Boulevard is a two-way major thoroughfare with four lanes (two in each direction). Industrial Street is a two-way street with two lanes in each direction and center medians. Boutwell Street is a narrow two-way street that provides access to businesses to the south of Industrial Boulevard; it dead ends where the Boutwell shaft is proposed. Gaven Street is a two-way residential street.

Bicycle lanes within the Project area include class IV bikeways[13] on Alemany Boulevard (south of I-280) and Bayshore Boulevard (from Helena Street to Industrial Street), a class III bikeways[14] on Industrial Street (Bayshore Boulevard to Loomis Street), and a class II bikeway[15] on Bayshore Boulevard (Helena Street to Augusta Street).There is a sidewalk along the south side of Alemany Boulevard (between Stoneybrook Avenue and near the West View vent shaft work area) and sidewalks along Gaven Street, Bayshore Boulevard, and Industrial Street, and along portions of Boutwell Street.

Primary public transit to the Project site is provided by Muni bus services. The Muni 9 and 90 bus lines run along Bayshore Boulevard. The Muni 24 bus line runs along Industrial Street. The San Mateo County Transportation District (SamTrans) bus lines 292 and 397 also run along Bayshore Boulevard.

3.5.2 Transportation and Circulation

Project construction would generate a maximum of three truck trips per hour, associated with equipment and materials delivery trips and hauling of spoils and construction debris, and up to 32 worker trips per day. Project activities would require temporary use of traffic lanes, parking lanes, bike routes, and/or bus stops for construction and for equipment and materials staging. As described in the Project Description, to accommodate construction of the upstream connection, Alemany construction shaft, and permanent structure; a temporary road (shoofly) would be constructed to the north of Alemany Boulevard to reroute traffic around the work area. Temporary lane closures would also be required along Bayshore Boulevard to accommodate project activities at the staging area E.

During construction of the box sewer, temporary lane closures would be required along Industrial Street over an approximately 25-month period. On Industrial Street between Boutwell Street and Barneveld Avenue, one westbound lane would be converted into an eastbound lane to ensure two-way traffic (one lane in each direction). On Industrial Street between Boutwell Street and Bayshore Boulevard, one eastbound lane will be closed during construction of the box sewer. Full street closure would be required on Boutwell Street between the Boutwell shaft and Industrial Street; however as noted in Table 3, access to local businesses on Boutwell Street would be maintained during work hours. See Table 3 for additional details regarding SFMTA's traffic requirements and restrictions. While the temporary lane closures on Alemany Boulevard, Bayshore Boulevard, and Industrial Street could result in traffic delays, the effect would not be adverse because at last one traffic lane would remain open at all times and the reduction in road capacity would be localized and short-term. In addition, local access to businesses on Boutwell Street would be maintained during work hours.

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[13] Class IV facilities consist of protected bikeways where bicycle facilities are separated from traffic by parked cars, safe-hit posts, transit islands, or other physical barriers.
[14] Class III bikeways are signed bicycle routes that allow people bicycling to share travel lanes with vehicles and may include a shared-lane marking.
[15] Class II bikeways are striped within the paved areas of roadways and established for the preferential use of people bicycling in separated bicycle lanes. Separated bicycle lanes provide a striped, marked, and signed lane that is buffered from vehicular traffic. These facilities, which are located on roadways, reserve 4 to 5 feet of space for bicycle traffic exclusively.

A few municipal bus routes (including Muni 24) and bike routes in the study area would intersect with the Project. Construction activities on Industrial Street would affect Municipal Light Rail operations as the overhead track for electrified buses running along Industrial Street would need to be de-energized and relocated; this effort would be subject to review and approval by the SFMTA. The existing class IV bike lane along Alemany Boulevard between Congdon Street and Stonebrook Avenue would be re-routed to Trumbull Street and reconnect with Alemany Boulevard at the Stoneybrook Avenue intersection. The southbound class IV bike lane along Bayshore Boulevard would also be temporarily shifted to accommodate staging area E, which extends onto a portion of Bayshore Boulevard.

Parking lane, travel lane, and sidewalk closures and reroutes that may be temporarily necessary for the Project would be subject to review and approval by the SFMTA. Throughout the project design process, the SFPUC has been and will continue coordinating with SFMTA. The SFMTA review process takes into consideration other construction projects; pedestrian, bicyclist, transit and traffic operations; and specific land uses in the vicinity of the Project alignment. The SFPUC would comply with the substantive requirements noted above and in Table 3 from SFMTA and/or SFPW for work that encroaches on City streets or sidewalks (i.e., lane closures) or requires relocating transit services and would implement any specified conditions.

Per Standard Construction Measure Number 4, and consistent with the requirements of SFMTA's Blue Book, the contractor would implement traffic control measures to maintain traffic and pedestrian circulation during Project activities, which could include a flagger on duty to maintain traffic flow. Local access to residence and business driveways would be maintained. If necessary, any detours and/or rerouted bus lines would be clearly identified with temporary signage.

Temporary lane closures along Alemany Boulevard, Bayshore Boulevard, and Industrial Street could slow but would not prevent emergency vehicle access as one lane of traffic would be maintained at all times. SFPUC is currently and would continue to coordinate with San Francisco Fire Department to ensure that emergency vehicle access to properties along Boutwell Street is maintained during box sewer construction activities.

Based on the Project's limited amount of construction traffic and conformance with any applicable SFMTA, SFPW, and/or San Francisco Fire Department requirements, and with the required implementation of Standard Construction Measure 4, traffic hazards would not result.

As described in Section 2, Project Description, operation and maintenance of the Alemany auxiliary sewer would occur infrequently (approximately every 10 to 20 years). If debris and/or sediment removal work is determined necessary, clearing of sediment would be done from the box sewer's removable panels along Boutwell Street and minimal truck trips would be required. The small-diameter manholes and vent shafts would be used to lower small tools into the tunnel portion as well. Like the Project's construction phase, the SFPUC would comply with the substantive requirements from SFMTA and/or SFPW for work that encroaches on City streets. In conclusion, operation and maintenance of the Project would not result in significant impacts to transportation or circulation.

For the reasons described above, no significant impacts to transportation would occur.

3.6 Noise

A noise and vibration technical study was completed to analyze the noise and vibration impacts associated with the Project.[16] Below is a summary of the Project's potential for noise and vibration impacts. For the reasons discussed below, the Project would not result in significant noise and vibration impacts.

3.6.1 Existing Noise Environment

Ambient noise measurements were collected in November 2023 at four long-term (24-hour) monitoring locations along the Project alignment.[17] The existing noise environment in the Project area is dominated by vehicular traffic from adjacent roadways such as I-280, Alemany Boulevard, U.S. 101, and Bayshore Boulevard. The representative ambient noise level at each monitoring location was determined based on the L_{90} levels recorded by the monitoring instrument; L_{90} refers to the ambient noise level exceeded for 90 percent of the measurement period. **Table 4** summarizes the ambient daytime and nighttime noise levels at each monitoring location, which are used as the basis for the Project's noise analysis.

Table 4. Ambient Noise Levels at Each Measurement Location

Measurement Location	Address	Daytime, dBA[1]	Nighttime, dBA[1]
M-1	333 Trumbull Street	77	69
M-2	300 Gaven Street	71	64
M-3	2340 San Bruno Avenue	74	67
M-4	240 Industrial Street	72	66

Note:

1. Ambient noise level determined using measured L_{90} at each location.

Daytime = 7:00 a.m. to 10:00 p.m.
dBA = A-weighted decibels
Nighttime 10:00 p.m. to 7:00 a.m.

Source: AECOM 2025

3.6.2 Sensitive Receptors

Existing noise- and vibration-sensitive receptors in the Project vicinity include a mixture of both single-family and multi-family residences, three schools, and a place of worship. **Table 5** summarizes the closest noise- and vibration-sensitive receptors.

[16] AECOM. 2025. Noise and Vibration Technical Memorandum for the Lower Alemany Area Stormwater Improvements Project. March.
[17] AECOM. 2025. Noise and Vibration Technical Memorandum for the Lower Alemany Area Stormwater Improvements Project. March.

Table 5. Noise- and Vibration-Sensitive Receptors Closest to Construction Work Areas

Receptor	Land Use	Address	Approx. Distance from Project Component	Project Component Reference
S-1	Residential	333 Trumbull Street	15 feet	West drive of tunnel; Alemany shaft; shoofly
S-2	School	300 Gaven Street	550 feet	Bowdoin vent shaft
S-3	Place of Worship	2340 San Bruno Avenue	350 feet	Bayshore shaft
S-4	School	240 Industrial Street	40 feet	Alemany auxiliary sewer box sewer portion
S-5	School	801 Silver Avenue	750 feet	West View vent shaft
S-6	Residential	170 Boutwell Street	80 feet	North drive of tunnel (from Boutwell shaft to Bayshore shaft)
S-7	Residential	100 Charter Oak Avenue	150 feet	North drive of tunnel (from Boutwell shaft)
S-8	Residential	400 Gaven Street	35 feet	West drive of tunnel (from Bowdoin vent shaft)
S-9	Residential	394 Gaven Street	25 feet	West drive of tunnel (from Bowdoin vent shaft)

Source: AECOM 2025

3.6.3 Noise Assessment Approach and Thresholds

Construction Noise. Noise generated by construction activities were assessed according to federal, state, and local noise regulations and guidance. Consistent with the provisions of Article 29 of the City's Police Code, the construction noise thresholds include the following:

- **Daytime:** Generation of noise greater than 80 A-weighted decibels (dBA) at 100 feet from equipment resulting from an individual piece of construction equipment. Additionally, the generation of noise resulting from the two loudest pieces of equipment combined, where the noise level is greater than 90 dBA and/or 10 dBA above the background noise level at any noise-sensitive receptor is not permitted.

- **Nighttime:** Generation of noise greater than 45 dBA at noise-sensitive receptors where people sleep, assuming windows are closed; or noise greater than 5 dBA above the ambient measured at the nearest property plane is not permitted.[18]

[18] Due to the age of structures in the study area, it is presumed that homes are unlikely to feature heating and air conditioning systems and would therefore periodically require windows to remain open during nighttime periods. Therefore, interior noise was estimated based on a -15 decibel adjustment to exterior noise modeling results to estimate the exterior-interior noise reduction.

Noise levels at each sensitive receptor were calculated in accordance with the Federal Transit Administration's guidance, which assumes that the two loudest pieces of equipment would be operating simultaneously at the center of the closest construction work area closest to each receptor.

Construction-Related Vibration Effects on Structures. Groundborne vibration levels resulting from above-ground construction activities at the Project site were estimated using data published by Caltrans in its 2020 Transportation and Construction Vibration Guidance Manual). Vibration levels from construction equipment were evaluated at surrounding buildings and compared to applicable Caltrans criteria (relating to potential building damage) to determine whether construction activities would generate vibration levels that could result in building damage.

Vibration-sensitive structures in the Project vicinity were determined to mostly include "older residential structures;" therefore, the Project used the thresholds of 0.5 peak particle velocity (PPV) inch per second (in/second) for transient vibratory sources, and of 0.3 PPV inches/second for continuous/frequent intermittent vibratory sources. As noted in Section 3.4.3, the structure at 1 Stoneybrook Avenue (100 feet away from the APE) is a contributor to the Stonecrest Defense Workers Housing District and was determined eligible for the National Register of Historic Places. Therefore, for this portion of the West Drive, the Project used the thresholds of 0.5 PPV in/second for transient vibratory sources, and of 0.25 PPV in/second for continuous/frequent intermittent vibratory sources.

Construction-Related Vibration Effects from Tunneling. To evaluate vibration levels generated by the tunnel boring machine, vibration levels at the nearest residential properties were calculated based on an equation derived by Rallu et al. which accounts for the type of soil (soft, medium or hard) and distance between the tunnel boring machine face and closest residential structure.[19] For the purposes of this analysis, the Project geotechnical report was used to determine the soil composition along the tunnel alignment. Based on review of project design plans, the closest distance between the tunnel boring machine face and residential structure at the surface ranges from approximately 33 feet to approximately 35 feet.[20]

Construction Vibration during Nighttime Work. To evaluate potential sleep disturbance caused by nighttime construction vibration, the noise study assessed the distance between the locations of planned nighttime construction equipment and the nearest residential property. Nighttime vibration levels were predicted based on the distance between nighttime vibratory sources and receivers, and the reference vibration levels provided by the Federal Transit Administration.

3.6.4 Construction Noise and Vibration Results

3.6.4.1 Daytime Construction Noise Effects – 100 ft. from Equipment

Based on review of the Project's construction equipment list by each construction phase, the Project would adhere to the requirements of the San Francisco Noise Ordinance

[19] Rallu, A., N. Berthoz, S. Charlemagne, and D. Branque. 2023. Vibrations induced by tunnel boring machine in urban areas: In situ measurements and methodology of analysis. *Journal of Rock Mechanics and Geotechnical Engineering,* 15 (1), pp. 130-145.
[20] AECOM. 2025. Noise and Vibration Technical Memorandum. February.

(Article 29 of the San Francisco Police Code). Equipment would not exceed a noise level of 80 dBA at a distance of 100 feet as specified in the noise ordinance.

3.6.4.2 Daytime Construction Noise at Sensitive Receptors

Daytime construction noise levels at each sensitive receptor were calculated assuming the simultaneous operation of the two loudest pieces of equipment at the closest project work area to the receptor. As described in the Project Description, the Project includes installation of three temporary sound barriers at the following locations: (1) southern side of Alemany staging area [staging area A], (2) along the west and east sides of the Bowdoin vent shaft, and (3) along the Industrial Street median south of Big City Montessori School at 240 Industrial Street. The sound barriers would provide a sound level reduction of at least 10 dB at certain receptors. **Table 6** summarizes the noise levels at each sensitive receptor with and without the temporary sound barrier relative to the City's noise ordinance thresholds of not exceeding a level of 90 dBA and/or 10 dBA above background noise level. As shown in the table, construction noise levels with the proposed barriers would not exceed the threshold.

3.6.4.3 Nighttime Construction Noise

As described in the Project Description, limited nighttime work associated with relocating water mains would be performed at four locations along Industrial Street with one nighttime work event at each location, each lasting an average of four hours. Some nighttime work would also occur in the vicinity of the Boutwell Street and Industrial Street intersection to temporarily relocate SFMTA's overhead electric MUNI lines over a total of 50 days. The overhead electric line relocation work would last approximately four hours per night. At the nearest sensitive receptor 725 feet away (S-7, 100 Charter Oak Avenue), nighttime construction noise levels would be 55 dBA. Assuming the exterior of the residential structure provides a 15 dB reduction to exterior noise, the indoor noise level would be 40 dBA and would not exceed the City's 45 dBA interior nighttime noise level threshold.

3.6.4.4 Construction-Related Vibration Impacts

Table 7 summarizes the calculated vibration levels from major vibratory equipment used near sensitive receptors.

As shown in Table 7, the most intensive vibratory work would occur near S-1, where a pile drill rig could generate as high as 0.3 PPV inches/second at the receptor that's roughly 15 feet away. These vibration levels would not exceed the damage threshold of 0.3 PPV inches/second for older residential structures.

Vibration levels generated by the tunnel boring machine were also calculated. The maximum estimated vibration levels at residential structures would be 0.10 PPV, inches/second. Therefore, tunnel boring vibration levels would be below the continuous vibration limits of 0.3 PPV inches/second for older residential structures and 0.25 PPV inches/second for historic buildings.

3.6.4.5 Operation Effects

The Project would not introduce any new permanent noise sources. The Alemany auxiliary sewer would require minimal operation and maintenance activities. As described in the project description, occasional sediment removal work may be performed an estimated schedule of every 10 to 20 years. Such work would involve use

of a skid steer loader, crane, winch, blowers, and/or a sewer jetter or vacuum truck. Each maintenance event would be limited to one to three days of daytime work. Noise and vibration sources and activities would be negligible; therefore, operation and maintenance of the Project would not result in significant noise or vibration effects.

Table 6. Daytime Noise Level Due to Construction Equipment

Sensitive Receptor ID (Baseline Survey ID)	Address	Closest Source/ Staging or Work Area	Distance to Property (Feet)	Combined Level (L_{eq}) without Temporary Sound Barrier	Combined Level (L_{eq}) with Temporary Sound Barrier	Ambient Daytime Level, L90 dBA	Daytime Limit: Ambient (L_{90}) + 10 dBA	Exceed 90 dBA and/or Ambient + 10 dB?
S-1 (M-1)	333 Trumbull Street	Alemany Shaft	15	96	86	77	87	No
S-2 (M-2)	300 Gaven Street	Bowdoin Vent Shaft	550	65	Not Included[1]	71	81	No
S-3 (M-3)	2340 San Bruno Avenue	Bayshore Shaft	350	70	Not Included[1]	74	84	No
S-4 (M-4)	240 Industrial Street	Downstream Connection	150	65	Not Included[1]	72	82	No
S-4 (M-4)	240 Industrial St.	Box Sewer	50	85	75	72	82	No
S-5 (M-2)	801 Silver Avenue	West View Vent Shaft	750	63	Not Included[1]	71	81	No
S-6 (M-3)	199 Boutwell Street	Bayshore Shaft	80	83	Not Included[1]	74	84	No
S-7 (M-4)	100 Charter Oak Avenue	Boutwell Shaft	150	77	Not Included[1]	72	82	No
S-8 (M-2)	400 Gaven Street	Bowdoin Vent Shaft	35	88	78	71	81	No
S-9 (M-2)	394 Gaven Street	Bowdoin Vent Shaft	25	91	81	71	81	No

Notes:

[1]The locations with no planned sound barriers are denoted as “Not Included” in the table. Where planned, the sound barriers would provide a noise level reduction of at least 10 dB.[21]

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

[21] Boyce, Glenn, Principal, Delve Underground, E-mail to Suzanne Huang and Allison Chan (SFPUC). November 20, 2024.

Table 7. Vibration Level Due to Construction Equipment

Sensitive Receptor ID	Closest Shaft/Work Area	Primary Vibratory Equipment	Distance to Receptor	Reference Level at 25 Feet, PPV in/s	Calculated Level at Receptor, PPV in/s	Continuous Vibration Limit,[1] PPV in/s	Exceeds Limit?
S-1	Alemany Shaft	Pile Drill Rig	15	0.170	0.30	0.30	No
S-2	Bowdoin Vent Shaft	Drill Rig	550	0.170	0.01	0.30	No
S-3	Bayshore Shaft	Drum Roller	220	0.210	0.02	0.30	No
S-4	Downstream Connection	Vibratory Roller	150	0.210	0.03	0.30	No
S-4	Box Sewer	Vibratory Roller	50	0.210	0.10	0.30	No
S-5	West View	Drill Rig	750	0.170	0.00	0.30	No
S-6	Bayshore Shaft	Drum Roller	80	0.210	0.06	0.30	No
S-7	Boutwell Shaft	Vibratory Roller	150	0.210	0.03	0.30	No
S-8	Bowdoin Vent Shaft	Vibratory Roller	30	0.210	0.17	0.30	No
S-9	Bowdoin Vent Shaft	Vibratory Roller	25	0.210	0.21	0.30	No

Notes:

[1] Continuous vibration limit applicable to “older residential structures” according to Caltrans Transportation and Construction Vibration Guidance Manual, April 2020.

ID = Identification

in/s = inches per seconds
PPV = peak particle velocity

3.7 Air Quality

3.7.1 Setting and Thresholds of Significance

The Project is located within the San Francisco Bay Area Air Basin (air basin), which is characterized by warm and mainly dry summers and mild and moderately wet winters.

3.7.1.1 Criteria Air Pollutants

Six air pollutants have been identified by EPA and the California Air Resources Board as being of concern both on a nationwide and statewide level: ozone; carbon monoxide (CO); nitrogen dioxide (NO_2); sulfur dioxide (SO_2); lead; and particulate matter (PM), which is subdivided into two classes based on particle size – PM equal to or less than 10 micrometers in diameter (PM_{10}) and PM equal to or less than 2.5 micrometers in diameter ($PM_{2.5}$).

Health-based air quality standards have been established for these pollutants by EPA at the national level and by California Air Resources Board at the state level. These standards are referred to as the national ambient air quality standards and the California ambient air quality standards, respectively,[22] and were established to protect the public with a margin of safety from adverse health impacts caused by exposure to air pollution. Because the air quality standards for these air pollutants are regulated using human and environment health-based criteria, they are commonly referred to as “criteria air

[22] Current federal and state standards are available at: http://www.arb.ca.gov/research/aaqs/aaqs2.pdf.

pollutants." The air basin is currently designated as "non-attainment" for the California ambient air quality standards for ozone, PM_{10}, and $PM_{2.5}$ and "nonattainment" for the national ambient air quality standards for ozone and $PM_{2.5}$.[23]

The Bay Area Air District (air district) is the regional agency responsible for protecting public health and welfare in the air basin through the administration of federal and state air quality laws and policies. The City has determined it is appropriate to use the air district's recommended air pollution thresholds[24] for the purposes of identifying the Project's potential air quality impacts.

3.7.1.2 Local Health Risks and Hazards

In addition to criteria air pollutants, individual projects may emit *toxic air contaminants*. Toxic air contaminants collectively refer to a diverse group of air pollutants that can cause chronic (i.e., of long duration) and acute (i.e., severe but short-term) adverse effects on human health, including carcinogenic effects. Unlike criteria air pollutants, toxic air contaminants 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 the degree of control. A health risk assessment is an analysis in which human health exposure to toxic substances is estimated and considered together with information regarding the toxic potency of the substances, to provide quantitative estimates of health risks.

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. Certain 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 that for other land uses. Therefore, these groups are referred to as sensitive receptors. In addition, the air district's CEQA Air Quality Guidelines recommends that health risk assessments analyze impacts to off-site workers.[25] Workers with preexisting health problems may be susceptible to poor air quality and these individuals are also considered sensitive receptors.[26]

The project site is within the air pollution exposure zone (APEZ) as mapped by the San Francisco Department of Public Health. According to San Francisco's Environment Code Chapter 25, projects within the APEZ are required to comply with the Clean Construction

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[23] Current air quality designations are available at https://ww2.arb.ca.gov/resources/documents/maps-state-and-federal-area-designations.

[24] Bay Area Air Quality Management District, California Environmental Quality Act Air Quality Guidelines, April 2022.

[25] Bay Area Air Quality Management District, 2022 CEQA Air Quality Guidelines, Appendix E: Recommended Methods for Screening and Modeling Local Risks and Hazards, page E-14. Available online at: 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 June 7, 2023.

[26] When residential and worker receptors are both located at the same distance and direction from an emissions source, residential receptors would be expected to result in the greatest adverse health outcome, because of the longer exposure duration for residents as compared to workers.

Ordinance, including use of low emitting off-road construction equipment (i.e., equipment that meets Tier 4 interim emissions standards for all equipment greater than 25 horsepower). Each of the APEZ criteria and project contribution thresholds is discussed in the City's Air Quality and Greenhouse Gas Analysis Guidelines.[27] According to these guidelines, the project contribution thresholds to receptor locations within the APEZ include:

- 0.2 µg/m^3 for $PM_{2.5}$ concentration
- 7.0 cases per one million population for excess cancer risk

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 resulting from the proposed project is also disclosed and compared with the air district's chronic hazard index threshold of 1.0.

3.7.2 Criteria Pollutant Emissions Estimates

AECOM conducted a quantitative analysis to estimate the Project's criteria air pollutant emissions; the analysis approach and modeling results are summarized below.

3.7.2.1 Construction Emissions

The Project's average daily construction emissions of criteria air pollutants that would be emitted during each year of construction are summarized in **Table 8** below. This is based on construction equipment quantities and construction phasing information provided by Delve Underground (engineering consultant to the SFPUC). As noted above, the Project is within the APEZ and is therefore subject to compliance with the City's Clean Construction Ordinance (Chapter 25 of the San Francisco Environment Code), as amended. Per SFPUC Standard Construction Measure 2, the Project would adhere to the substantive requirements of the City's Clean Construction Ordinance, which requires that equipment used for Project activities have Tier 2 or higher engines and the most effective Verified Diesel Emission Control Strategy (VDECS) available for the engine types as certified by the California Air Resources Board. In addition, consistent with Best Available Control Technology Requirements of the air district, the Project would use generators that meet EPA Tier 4 final emissions standards for all generators larger than 1,000 horsepower. Therefore, emissions estimates are based on the Project's compliance with San Francisco's Clean Construction Ordinance, Construction Dust Control Ordinance, and the air district's Best Available Technology Requirements for generators. As shown in Table 8, the Project's construction emissions of criteria pollutants would be below the air district's thresholds.

[27] San Francisco Planning. 2024 (July). *Air Quality and Greenhouse Gas Analysis Guidelines*.

Table 8. Estimated Project Criteria Pollutant Emissions

Criteria Pollutant	Average Daily Emissions (pounds/day)[1]			2022 Bay Area Air District Thresholds (pounds/day)[5]
	Year 1 (2025)[2]	Year 2 (2026)[3]	Year 3 (2027)[4]	
PM_{10}	0.18	0.79	0.71	54
$PM_{2.5}$	0.18	0.78	0.71	82
NO_X	19.14	41.93	35.54	54
ROG	0.90	4.53	4.29	54

Notes:
[1] Construction emission sources include off-road and on-road vehicle equipment exhaust; and off-gassing emissions associated with architectural coatings (roadway striping) and paving activities. Note that construction emissions were modeled based on an older construction schedule that assumed construction started in 2025. Based on the updated construction schedule shown in Table 2, construction activities would be delayed approximately one (1) year; emissions presented here are therefore conservative, as emissions would likely be lower as a result of cleaner equipment and vehicles in future years.
[2] Average daily emissions are based on 220 construction workdays in 2025 because construction is estimated to begin March 1,2025.
[3] Average daily emission estimates are based on 264 construction workdays in 2026.
[4] Average daily emission estimates are based on 264 construction workdays in 2027.
[5] Bay Area Air Quality Management District, California Environmental Quality Act Air Quality Guidelines, April 2023.
lbs/day = pounds per day; 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; NO_X = oxides of nitrogen; ROG = reactive organic gases.
Source: AECOM 2024

3.7.2.2 Operational Emissions

After construction is complete, the Project would require minimal operational maintenance. SFPUC staff would inspect the Alemany auxiliary sewer approximately once every year before the start of the west season or when a problem is detected after a large storm event. Sediment removal work may need to be performed on an estimated schedule of every 10 to 20 years. Such work would involve use of a skid steer loader, crane, winch, blowers, and/or jetter or vacuum truck. Emissions from such activities would be minimal and would decrease over time as vehicle fleets and equipment become cleaner (i.e., emit less emissions per unit of activity) due to increasingly stringent regulations and improvements in best available technology. Therefore, operation and maintenance of the Project would not result in a net change in average daily emissions.

3.7.3 Health Risk Assessment

A health risk assessment was performed by AECOM to evaluate potential health risks at offsite sensitive receptors within 1,000 feet during the Project's construction activities, including receptors along the haul routes for construction. Four sensitive receptor types were evaluated to assess long-term cancer risk and annual $PM_{2.5}$ concentration exposure:

- *Residential Exposure* – Starting Age: third trimester in utero
- *Child (Daycare Center) Exposure* – Starting Age: 0 years old
- *Student Exposure* – Starting Age: 4 years old
- *Worker Exposure* – Starting Age: 16 years old

The maximally exposed receptors are the sensitive receptor locations with the maximum cancer risk and the maximum $PM_{2.5}$ concentration as a result of the Project for each receptor type.

The health risk assessment assessed cancer risk, non-cancer chronic risk, chronic and acute hazard index, and $PM_{2.5}$ concentrations at existing sensitive receptor locations, including nearby residents, children, students, and off-site workers within 1,000 feet of project activities. Details on assumptions and analysis methods for the health risk assessment are available in the air quality and health risk assessment methodology memorandum.[28]

3.7.3.1 Construction Impacts

Construction activities would result in short-term emissions of diesel particulate matter and other toxic air contaminants. However, as noted above, the Project would be subject to the San Francisco Clean Construction Ordinance, which requires the use of Tier 2 or higher engines with the most effective VDECS. In addition, consistent with Best Available Control Technology Requirements of the air district, the Project would use Tier 4 final emissions standards for all generators larger than 1,000 horsepower.

Impacts of existing conditions plus project cancer risks and annual $PM_{2.5}$ concentrations at offsite receptors resulting from Project construction activities were evaluated by adding the project contributions to the 2020 Citywide Health Risk Assessment background risks and concentrations. The offsite health risks and annual $PM_{2.5}$ concentrations at the maximally exposed individual sensitive receptors under existing plus project conditions are summarized in **Table 9**. The Project's cancer risk and $PM_{2.5}$ concentrations would be below the APEZ thresholds.

[28] AECOM. 2024. Air Quality and Health Risk Assessment Technical Memorandum for the Lower Alemany Area Stormwater Improvements Project. December.

Table 9. Existing Conditions Plus Project Lifetime Cancer Risk and Annual $PM_{2.5}$ Concentration at Project Maximally Exposed Individual Sensitive Receptors

Receptor Type	Source	Lifetime Cancer Risk (per one million)	Exceed Project Contribution Threshold of 7 (per one million)?	Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)	Exceed Project Contribution Threshold of 0.2 $\mu g/m^3$ for Annual $PM_{2.5}$ Concentration ?
Residential	Proposed Project	6.834[1]	No	0.147[2]	No
	Existing Conditions[3]	293.559	N/A	16.277	N/A
	Total	**300.393**	N/A	**16.424**	N/A
Worker	Proposed Project	0.541[1]	No	0.161[2]	No
	Existing Conditions[3]	261.029	N/A	12.857	N/A
	Total	**261.570**	N/A	**13.018**	N/A
Child	Proposed Project	0.096[1]	No	0.003[2]	No
	Existing Conditions[3]	58.147	N/A	8.777	N/A
	Total	**58.243**	N/A	**8.780**	N/A
Student	Proposed Project	0.574[1]	No	0.042[2]	No
	Existing Conditions[3]	232.123	N/A	12.102	N/A
	Total	**232.697**	N/A	**12.144**	N/A

Notes:
1. Sum of cancer risk from Table 6 of the Air Quality and Health Risk Assessment Technical Memorandum (AECOM 2024) for given receptor type. Total lifetime cancer risk is represented as a sum of all years of construction. Note that construction emissions were modeled based on an older construction schedule that assumed construction started in 2025. Based on the updated construction schedule shown in Table 2, construction activities would be delayed approximately one (1) year; cancer risk and annual PM2.5 concentrations presented here are therefore conservative, as emissions would likely be lower as a result of cleaner equipment and vehicles in future years.
2. Maximum year of annual $PM_{2.5}$ concentration from Table 6 of the Air Quality and Health Risk Assessment Technical Memorandum (AECOM 2024) for given receptor type. Maximum annual $PM_{2.5}$ concentration represents the highest annual average concentration for given modeled project year.
3. Background concentration from 2020 citywide HRA database.
HRA = Health Risk Assessment
$\mu g/m_3$= micrograms per cubic meter
$PM_{2.5}$ = particulate matter equal to and less than 2.5 micrometers in diameter
Source: AECOM 2024

Additionally, offsite non-cancer chronic and acute health risks were evaluated for project construction at the maximally exposed individual sensitive receptor types. Noncarcinogenic impacts were estimated by comparing calculated concentrations to

identified risk assessment health value. This comparison is expressed in terms of a "hazard index." The results are presented in Table 7 of the Air Quality and Health Risk Technical Memorandum (AECOM 2024). The non-cancer chronic and acute hazard index increases due to the project would be well below the significance threshold of 1.0.

Cumulative health risks were also analyzed at the maximally exposed individual sensitive receptors for each receptor type. There is one cumulative project (4100 Mission Street) approximately 1,800 feet away from the maximum exposed residential receptor by the Alemany work area. The 4199 Mission Street project is a residential development project that involves demolishing an existing 1,118-square-foot building and removing underground tanks of an existing gas station to make way for construction of a new 60-foot-tall residential building. According to the Mitigated Negative Declaration for the 4199 Mission Street project, air quality and health risk impacts were determined to be less than significant because the project sponsor committed to use of Tier 4 off-road construction equipment and would not include any diesel-powered equipment (i.e., emergency generators) as part of operations.[29] As a result, cumulative health risk impacts would be minimal at the Project's maximally exposed receptors, given the distance and less than significant determination of the 4199 Mission Street project.

3.7.3.2 Operation Impacts

As described in Section 3.7.2, above, operation and maintenance of the Project would be minimal (occasional sediment removal work performed approximately every 10 to 20 years). For this reason and because emissions would be minimal and would decrease over time due to vehicle fleets and equipment becoming cleaner, health risk impacts from ongoing maintenance of the Project would be minimal and not result in a significant health risk impact.

3.7.4 Odors

The Project would not result in substantial emissions, including those leading to odors. The Alemany auxiliary sewer would only convey wet weather flows which contain a high percentage of stormwater and small percentage of sewer flows. The auxiliary sewer is also designed with a slope such that it would drain at all times; therefore, there would be no standing water that could be a source of odor. In addition, as noted in the Project Description, the vent shafts are intended to allow air to enter the tunnel when filling and draining. Air would only be expelled from the vent shafts after the tunnel fills and would last for a short period of time (during storm event). For these reasons, there would be no adverse effects related to operational emissions such as those leading to odors.

3.7 Utilities and Service Systems

As described in Section 2, Project Description, the Project would require relocating several utilities including but not limited to PG&E gas and electric lines, SFPUC water lines, sewer lines, and emergency firefighting water supply lines, and fiber optic lines. During the Project design phase, SFPUC conducted potholing excavations to identify

[29] San Francisco Planning Department, Mitigated Negative Declaration, 4199 Mission Street, May 17, 2023, *https://citypln-m-extnl.sfgov.org/SharedLinks.aspx?accesskey=db178482a05a424a958ac8f0d98a829c6121026470116d86f553bc6ab8fe3cb7&VaultGUID=A4A7DACD-B0DC-4322-BD29-F6F07103C6E0*.

which utilities require relocation and has been coordinating with utility companies that would be affected. Utility relocation would not require or result in the construction of new or expanded utilities in areas outside of the project area.

According to the Phase II Environmental Site Assessment (ESA) report prepared for the Project[30], composite soil samples were evaluated along the box sewer alignment within the shallow fill material. The Phase II ESA considered this material as potentially California Class I hazardous waste. It is conservatively assumed that approximately 25,000 cubic yards of spoil from box sewer construction would be disposed at Waste Solutions Inc. at 100 Cargo Way, San Francisco. From this facility, waste would be loaded on railcars and transported via rail out of state to the ECDC Environmental Landfill in East Carbon, Utah. As of 2023, the landfill had approximately 437 million cubic yards of capacity remaining.[31] The portion of the Project's nonhazardous waste that would be disposed at ECDC Environmental Landfill would represent 0.000057 percent of the landfill's remaining capacity.

The remaining soil samples conducted for other portions of the Project alignment are considered as California Class II (non-hazardous) waste. Thus, the approximately 61,660 cubic yards of spoil that would be excavated from shaft and tunnel construction would be disposed at a nonhazardous waste facility. The Corinda Los Trancos Landfill (also referred to as Ox Mountain Landfill) would most likely receive the Project's non-hazardous waste. Its total capacity was estimated at 60.5 million cubic yards in 2019, with approximately 18.2 million cubic yards of capacity remaining.[32] Compliance with mandatory state and local diversion requirements would reduce the Project's effect on landfill capacity. The portion of the Project's non-hazardous waste that could not be diverted (approximately 61,600 cubic yards) would represent approximately 0.003 percent of the Ox Mountain Landfill's remaining capacity. In compliance with the City's Construction and Demolition Debris Recovery Program Ordinance, the SFPUC would recycle materials to the extent feasible. Therefore, by adhering to applicable solid waste regulations and considering the landfill's remaining capacity, the Project's effects on landfill capacity would not be significant.

3.8 Biological Resources

3.8.1 Special-Status Species

A biological resources assessment was prepared to evaluate the Project's potential effects to species listed as endangered or threatened, or proposed for listing as endangered or threatened under the federal Endangered Species Act (ESA), as regulated by the U.S. Fish and Wildlife Service, and animals listed as endangered or

[30] McMillen Jacobs Associates. 2022. PRO.0164 Lower Alemany Area Stormwater Improvements Project Phase II Environmental Site Assessment Report. Report Status (Final) Revision No. 1. December 5.
[31] GHG Data for ECDC Landfill, available online at: https://ghgdata.epa.gov/ghgp/service/facilityDetail/2021?id=1007944&ds=E&et=&popup=true, accessed November 4, 2024.
[32] Republic Services. Memo from Agustin Moreno to Gordon Tong (County of San Mateo) re: Report of Landfill Activity, Corinda Los Trancos Landfill (Ox Mountain). Available at: https://www.smcsustainability.org/wp-content/uploads/Ox-Landfill-Capacity.pdf, accessed November 4, 2024.

threatened, or proposed for listing as endangered or threatened under the California state Endangered Species Act, as regulated by the California Department of Fish and Wildlife, and California Rare Plant Rank 1 or 2, as determined by the California Native Plant Society. The following paragraphs summarize the methodology and findings from the biological resources assessment.[33]

SFPUC biologist Jill Grant conducted reconnaissance surveys to identify habitat types and potentially suitable habitat for special-status species in the Project area on the following dates: April 5, April 7, April 13, and May 19, 2023, and August 14, 2024. Surveys consisted of analyzing aerial photography and conducting pedestrian transects to verify the evaluation of aerial imagery. A search for state or federally listed species or their habitat was also conducted based on existing information from federal and state agencies. Lists of potentially occurring special-status plants and animal species were compiled based on review of databases maintained by the California Natural Diversity Database, the U.S. Fish and Wildlife Service, and the California Native Plant Society Rare Plant Inventory. Note that the West View vent shaft work area/staging area C and staging area 6 were not accessible at the time of the reconnaissance surveys.

Most of the Project site is within paved residential, commercial, and industrial areas. Staging areas are located on Alemany Boulevard, Boutwell Street, at the north end of Bowdoin Street, underneath I-280 and U.S. 101, within parking lots, vacant industrial lots, or in open space within the public right-of-way. Construction activities and use of staging areas would temporarily disturb approximately 3.7 acres of non-native annual grassland that is surrounded by heavily traveled roads and surrounded by residential, commercial, and industrial buildings. This marginal habitat of non-native grassland is intermixed with landscaping trees. Plants observed include slender oat (*Avena barbata),* ripgut brome (*Bromus diandrus*), Italian ryegrass (*Festuca perennis*), and fennel (*Foeniculum vulgare*). Several non-native, common landscaping trees occur in the staging areas. During the reconnaissance surveys, few animal species were observed but included black phoebe, rock doves, and American crows.

No wetlands or other aquatic resources or special-status species were observed within the Project area. The desktop analysis also found no wetlands present at staging areas C and 6, which were not accessible at the time of reconnaissance surveys. Although not expected, habitat for obscure bumble bee (*Bombus caliginosus*) and western bumblebee (*Bombus occidentalis*) may occur in staging areas C and 6. If these staging areas are used and in accordance with Standard Construction Measure 7, a biological survey would be completed prior to vegetation clearing. The required pre-construction biological survey would implement avoidance measures (e.g., [establishing work buffer zones or restricting certain types of activities) if these species are found and thus ensure protection of these special-status species.

Therefore, no significant impacts to protected species or habitats would occur.

[33] Grant, Jill. 2024. Biological Resource Assessment of Lower Alemany Area Stormwater Improvements. October.

3.8.2 Nesting Migratory Birds

Trees proposed for removal/trimming within staging areas A, C, D, E, and H and vegetation in staging area 6 could provide habitat for nesting birds. Nesting migratory birds are protected under the federal Migratory Bird Treaty Act (whether they are otherwise listed as special status, or not), and Project activities occurring during the nesting season (February 15 through August 31) could result in nest failure if active nests are present in nearby trees. However, in accordance with SFPUC Standard Construction Measure Number 7, if construction is scheduled to take place during the nesting season (February 15 through August 31) at the above-listed staging areas, a qualified biologist would conduct a nesting bird survey of the staging area to identify any active migratory bird nests (containing eggs or chicks or raptors showing mating behavior). If nesting birds are present, measures would be implemented in consultation with the Project biologist to ensure active nests are not destroyed or adversely affected, such as establishing work buffer zones, restricting certain types of activities, monitoring, or identifying activities that could be delayed until the nestlings have fledged.

Lastly, no trees defined as “landmark” or “significant” per the Urban Forestry Ordinance (Article 16)[34] would be removed. Although some mature trees would be removed, the SFPUC would comply with the substantive requirements of City’s Urban Forestry Ordinance, which require replanting for the removal of any street trees protected by the ordinance, or that the SFPUC (in this case) pay into Public Work’s Adopt-A-Tree Fund, pursuant to Article 16 of the San Francisco Public Works Code Section 806(a).

Based on the above, and with implementation of Standard Construction Measure 7, no significant impacts to biological resources would occur.

3.9 Geology and Soils

There are no known faults crossing or located near the Project site and the site is not within an Earthquake Fault Zone, as identified by the Alquist-Priolo Earthquake Fault Zoning Act. The closest major active fault to the Project alignment is the San Andreas, which is approximately 5.8 miles to the west. The San Gregorio fault runs along the west side of the San Francisco Peninsula and is approximately 9.3 miles kilometers west of the Project site. The Hayward fault is approximately 11.8 miles east of the Project site. Therefore, the Project would not expose people or structures to the effects of fault rupture.

The project is in a seismically active region and therefore could be exposed to very strong ground shaking and seismic-related ground failure due to an earthquake.[35] Mapping developed in 2013 by the Association of Bay Area Governments, in conjunction with the U.S. Geological Survey, confirms the Project site could be subject to violent ground shaking.[36] However, the Project would not construct habitable structures or

[34] https://codelibrary.amlegal.com/codes/san_francisco/latest/sf_publicworks/0-0-0-4066
[35] San Francisco Planning Department. 2012. Community Safety Element. An Element of the General Plan of the City and County of San Francisco. June. Available: https://generalplan.sfplanning.org/Community_Safety_Element_2012.pdf. Accessed December 6, 2024.
[36] Association of Bay Area Governments. Probabilistic Earthquake Shaking Hazard Assessment. Available: https://abag.ca.gov/our-work/resilience/data-research/earthquake. Accessed December 11, 2024.

attract new people to the region and therefore would not result in an increase in public exposures to seismic hazards.

Based on the California Geological Survey map "Earthquake Zones of Required Investigation, San Francisco South Quadrangle," the project alignment is within a liquefaction zone. Specifically, portions of the alignment near the intersection Alemany Boulevard and Stoneybrook Avenue, along Gaven Street between Boylston Street and Merrill Street, and along Boutwell Street and Industrial Street north of I-280 are within the liquefaction zone. Primary geologic units found along the tunnel alignment and shaft locations include artificial fill, young bay mud, Colma formation, old Bay clay, and Franciscan Complex.[37]

The SFPUC's general seismic requirements set forth consistent criteria for the seismic design and retrofit of San Francisco's water and wastewater infrastructure. Permanent structures for the project are required to be designed in accordance with the SFPUC Seismic Performance Class II. The general seismic requirements state that a Structural Performance Category II facility must be designed for the 10% probability of exceedance in 50 years (475-year return period event). In accordance with these design standards, every project that includes modifications to an existing facility or construction of a new facility must assign the facility a seismic performance class based on the seismic environment at the site and importance of the facility in meeting level of service goals for the water or wastewater system.

The SFPUC has prepared several studies to inform project design and satisfy the general seismic design criteria; these include but are not limited to a Geotechnical Interpretative Report,[38] Settlement Analysis Report,[39] Seismicity Report, and Soil-Structure Interaction Report.[40] The Geotechnical Interpretative Report summarizes findings of the geotechnical investigation which assessed ground and groundwater conditions for project design. The seismicity report includes a seismic characterization along the tunnel alignment. The seismic-soil structure interaction analysis included a liquefaction analysis for the tunnel, box sewer, upstream and downstream connections, and other critical locations. The Settlement Analysis Report was completed to evaluate the effect of shaft construction and tunneling activities along the project alignment, as well as to identify existing infrastructure that may be affected by ground movements and subject to monitoring. The new box sewer would be supported by 2-foot diameter concrete piles that extend down to 120 feet below ground. Under the Project, incorporation of engineering and design features recommended by these reports and the qualified geotechnical engineering professional, in accordance with the San Francisco Building Code and SFPUC's general seismic requirements, would ensure the proposed

[37] California Geological Survey. Earthquake Fault Zones (1982) and Seismic Hazard Zones (2021), San Francisco South 7.5-minute Quadrangle: PDF map of Earthquake Zones of Required Investigation, scale 1:24,000, https://maps.conservation.ca.gov/cgs/informationwarehouse/. Accessed 29, January 2025.
[38] Delve Underground. 2023. Lower Alemany Area Stormwater Improvements Project Geotechnical Interpretative Report. October.
[39] Delve Underground. 2024. Lower Alemany Area Stormwater Improvements 95% Design Report. Appendix D. February.
[40] Delve Underground and Arup. 2024. Lower Alemany Area Stormwater Improvements Project Soil-Structure Interaction Report. January 24.

sewer infrastructure would not exacerbate the potential for people or structures to be exposed to substantial adverse effects associated with seismic hazards.

For the reasons described above, the Project would not result in significant impacts related to geology and soils.

3.10 Hydrology and Water Quality

No construction or future operation and maintenance work would occur within waters of the United States or of the State. As such, drainage patterns of a stream or waterway would not be altered. During construction and operation of the Project, if pollutants such as sediment and oils from construction equipment are inadvertently released, they could be discharged to storm drains during storm events if they are entrained in stormwater runoff. The Project would adhere to the City's Construction Site Runoff Control Ordinance (Article 4.2 of the San Francisco Public Works) that requires all projects to implement best management practices to prevent the discharge of sediment, non-stormwater, and waste runoff from construction sites. Additionally, pursuant to SFPUC Standard Construction Measure Number 3, the contractor would be required to implement erosion and sedimentation controls, (i.e., gravel bags and silt fence for storm drain inlet protection) tailored to the site, along with restoring the right-of-way to pre-construction grade. As noted in Section 2.7, the contractor would also be required to obtain an SFPUC Construction Site Runoff Control Permit and Batch Wastewater Discharge Permit from the SFPUC's Wastewater Enterprise/Collection System Division. The Construction Site Runoff Control Permit requires preparation of an erosion and sediment control plan that identifies construction activities that could discharge pollutants in stormwater, and it requires identification of best management practices to be implemented that would reduce temporary water quality impacts from construction. Therefore, with adherence to Standard Construction Measure 3 and above-mentioned permits, no significant impacts to water quality would occur.

Portions of the project site along Alemany Boulevard and Industrial Street are within the City's 100-year storm flood risk zone.[41] As stated in the Project Description, the primary objective of the project is to improve stormwater management in the Lower Alemany neighborhood which historically floods during large storm events. Once construction is completed and in the event of a large storm event, flows from the existing Alemany sewer would be diverted to the proposed Alemany auxiliary sewer. As such, the project would not have the potential to alter the drainage pattern of the project area in a manner that would impede flood flows or redirect flood flows in an adverse manner. Rather, the project would improve stormwater management services in the Lower Alemany neighborhood.

3.11 Hazards and Hazardous Materials

The SFPUC assessed the site and reviewed the Cal EPA Cortese List Data Resources (available at: https://calepa.ca.gov/SiteCleanup/CorteseList/) to identify whether any hazardous materials were present. There are no Cortese sites within the Project site.

[41] SFPUC. 2024. 100-Year Flood Map. Available: https://gis.sfpuc.org/portal/apps/instant/basic/index.html?appid=5dbe439cb71f42c89de0e2af110ae1f0. Accessed December 30.

The State Water Resources Control Board maintains the GeoTracker database, an information management system for groundwater. The Hazardous Waste and Substances Site List (the "EnviroStor" database) is maintained by the California Department of Toxic Substances Control as part of the requirements of Public Resources Code Section 65962.5. Based on the State Water Resources Control Board Geotracker and Department of Toxic Substances Control Envirostor databases, two cleanup sites near the Project site are in evaluation: (1) one at 956 Ellsworth Street (approximately 526 feet north of the Alemany auxiliary sewer), and (2) one at 320 Alemany Boulevard (approximately 670 feet north of the Alemany auxiliary sewer) and two leaking underground (fuel) storage tank cleanup sites are near the Project site: (1) one at 2400 San Bruno Avenue (approximately 530 feet southwest of Staging Area E) and (2) one at 68 Elmira Street (approximately 675 feet south of the Alemany auxiliary sewer at Industrial Street/Barneveld Avenue).

The majority of the Project area is within the Maher zone. As noted in Section 3.7, Utilities and Service Systems, according to the Phase II ESA report prepared for the Project,[42] composite soil samples were evaluated along the box sewer alignment within the shallow fill material. The Phase II ESA considered this material as potentially California Class I hazardous waste. It is conservatively assumed that approximately 25,000 cubic yards of spoil from box sewer construction would be disposed at Waste Solutions Inc. at 100 Cargo Way, San Francisco. From there, the material spoils would subsequently be transported via rail out of state to the ECDC Environmental Landfill in East Carbon, Utah. The SFPUC and its contractor would comply with the substantive requirements of the Maher Ordinance (Article 22A of the San Francisco Health Code), as amended. Furthermore, SFPUC Standard Construction Measure Number 6 requires the appropriate storage and handling of construction materials, including any hazardous materials (i.e., paints, fuel, etc.) while on site, as well as the appropriate treatment, containment, and removal of hazardous materials (i.e., soil, groundwater, or vapor) should they be encountered during Project activities.

Regarding hazards, the Project is not located in the vicinity of an airstrip or within an area subject to an airport land use plan. The project would be in an urban area and primarily City streets, which are not susceptible to wildfires.

Operation and maintenance of the new sewers would involve infrequent debris and sediment removal activities. Similar to the project construction phase, Standard Construction Measure 6 would be implemented to ensure the appropriate storage and handling of hazardous materials if used on site.

Therefore, based on the above, no significant impacts related to hazards and hazardous materials would occur.

[42] McMillen Jacobs Associates. 2022. PRO.0164 Lower Alemany Area Stormwater Improvements Project Phase II Environmental Site Assessment Report. Report Status (Final) Revision No. 1. December 5.

4. CEQA Compliance/Recommendation

Based on the description of the proposed Project and evaluations above, the SFPUC recommends that it is categorically exempt under CEQA Section 15301, Class 1 (Existing Structures) and Section 15303, Class 3 (New Construction or Conversion of Small Structures).

Sincerely,

Karen Frye

Karen Frye, AICP, Manager
Environmental Management

cc: Suzanne Huang, SFPUC Project Manager
Allison Chan, SFPUC Environmental Project Manager