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

FINAL MITIGATED NEGATIVE DECLARATION

PMND Date:	November 10, 2021, amended on December 30, 2021 (amendments to the PMND include deletions, shown as ~~strikethrough~~, and additions, shown as double underline)
Case No.:	2021-004847ENV
Project Title:	San Francisco Fire Department Training Facility / 1236 Carroll Avenue
Zoning:	P (Public) Use District PDR-2 (Core Production, Distribution, and Repair) Use District 40-X Height and Bulk District
Block/Lot:	4852/001, 002, 003, 004, 005, 006, 007, 008, 009, 010, 011, 012, 013, 014, 015, 016, 017, 018, 019, 020, 021, 022, and 4877/001, 002, 003, and 004
Lot Size:	317,300 square feet (7.28 acres)
Project Sponsor:	San Francisco Department of Public Works Magdalena Ryor - Magdalena.Ryor@sfdpw.org
Lead Agency:	San Francisco Planning Department
Staff Contact:	Jeanie Poling – (628) 652-7559 Jeanie.poling@sfgov.org

Project Description

The San Francisco Department of Public Works acting on behalf of the San Francisco Fire Department (fire department or project sponsor) proposes to acquire the property at 1236 Carroll Avenue and construct a new fire-training facility that would be on two city blocks bounded by Carroll Avenue, Hawes Street, Armstrong Avenue, and Griffith Street. Bancroft Avenue, which bisects the project site between Hawes and Griffith streets, would be vacated, and the parcels would be merged to form a contiguous site of 317,300 square feet (7.28 acres). Following acquisition of the property, the project sponsor would develop detailed plans for the project site and would seek project approvals for the proposed fire-training facility. The proposed fire-training facility would provide necessary training facilities for effective firefighting, including live-fire training, classroom training, equipment training, and emergency medical services training. The proposed fire-training facility would also consolidate and replace the fire department training facilities that are currently at 19th and Folsom streets and on Treasure Island.

The proposed fire-training facility would include the following:

- A three-story (50-foot-tall), approximately 70,000-square-foot fire-training and administration building for classroom instruction and administrative functions
- A one-story (50-foot-tall), approximately 27,000-square-foot apparatus building for apparatus training and storage
- A one-story (40-foot-tall), approximately 19,200-square-foot shop/maintenance building that would house metal and wood shops for building and maintaining training props

In addition to classroom instruction and apparatus training and storage, fire training that involves controlled burns and simulated rescue operations would occur at the following prop buildings on site:

- A seven-story (110-foot-tall) training tower
- A four-story (60-foot-tall) condo-apartment-style building
- Several structures and equipment up to 40 feet tall, including a Victorian house, a commercial prop burn room, a container burn room, a mock BART station, a vehicle fire prop, an apparatus training "hill," and other simulation props

The attached initial study contains a comprehensive project description, including figures, and an anticipated list of required project approvals.

Finding

This proposed project would not have a significant effect on the environment. This finding is based upon the criteria of the Guidelines of the State Secretary for Resources, section 15064 (Determining the Significance of the Environmental Effects Caused by a Project), section 15065 (Mandatory Findings of Significance), and section 15070 (Decision to Prepare a Negative or Mitigated Negative Declaration), and the reasons as documented in the initial study (attached) for the proposed project. Mitigation measures are included in this proposed project to avoid potentially significant effects.

Mitigation measures are included in this project to avoid potentially significant effects. See pages 49, 56, 78, 81, 101, 126, and 127.

In the independent judgment of the planning department, there is no substantial evidence that the proposed project could have a significant effect on the environment.

Tania Sheyner (for)

Lisa Gibson
Environmental Review Officer

12/30/2021

Date of Issuance of Final Mitigated Negative Declaration

cc: Supervisor Shamann Walton, District 10
Project Distribution

INITIAL STUDY
1236 CARROLL AVENUE PROJECT
PLANNING DEPARTMENT CASE NO. 2021-004847ENV

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ACRONYMS AND ABBREVIATIONS

ACRONYM/ABBREVIATION	DEFINITION
ADRP	Archeological Data Recovery Plan
APEZ	Air Pollutant Exposure Zone
APIP	Archeological Public Interpretation Plan
ARPP	Archeological resource preservation plan
ARR	Archeological Resources Report
ATCM	Airborne Toxic Control Measure
ATP	Archeological Testing Plan
BART	Bay Area Rapid Transit
CEQA	California Environmental Quality Act
CNEL	Community Noise Equivalent Level
CPHPS	Candlestick Point–Hunters Point Shipyard
ERO	Environmental Review Officer
GHG	Greenhouse Gas
MLD	Most Likely Descendant
NWIC	Northwest Information Center
OEHAA	Office of Environmental Health Hazards Assessment
PDR	Production, Distribution, and Repair
PPV	Peak Particle Velocity
QACL	Qualified archeological consultants list
SDAT	Streetscape Design Advisory Team
SFMTA	San Francisco Municipal Transportation Agency
SFPUC	San Francisco Public Utilities Commission
TCRIP	Tribal Cultural Resources Interpretation Plan
TNC	Transportation Network Companies
VDECS	Verified Diesel Emissions Control Strategy
VMT	Vehicle-miles traveled

A. PROJECT DESCRIPTION

1. Project Location and Site Characteristics

The project site comprises more than two city blocks, bounded by Carroll Avenue to the south, Hawes Street to the west, Armstrong Avenue to the north, and the eastern edge of Griffith Street to the east, in the Bayview Hunters Point neighborhood.[1] Hawes Street is not paved and does not currently function as a street. Armstrong Avenue is partially unpaved and contains no sidewalks. Griffith Street is partially paved, but it does not currently function as a street.

The project site comprises three parcels and portions of the public right-of-way:

- Parcel 1 (block 4877, lots 001 through 004)
- Parcel 2 (block 4852, lots 002 through 022)
- Port of San Francisco parcel (block 4852, lot 001), under the jurisdiction of the Port of San Francisco
- Bancroft Avenue between Hawes Street and Griffith Street
- Griffith Street between Carroll Avenue and Armstrong Avenue

Combined, these parcels and the portion of Bancroft Avenue make up 7.28 acres or 317,300 square feet (**Figure 1**, **Figure 2**, and **Figure 3**). The project site is paved, with no structures, and is often used as a temporary laydown and staging area for construction projects located elsewhere. The site includes an active construction staging area with excavated dirt storage. A portion of the pavement has been further covered by dirt, gravel, and debris from construction laydown activities. Additionally, a paper street of Bancroft Avenue runs east to west through the site.[2] A San Francisco Public Utilities Commission (SFPUC) combined sewer/stormwater runs east beneath unbuilt Bancroft Avenue, turning northwest toward the intersection of Hawes Street and Armstrong Avenue.

The project site is located approximately 17 feet above mean sea level. The surrounding elevation decreases from south to north. The project site is at the same elevation as Carroll Avenue, and Armstrong Avenue is located approximately 15 feet lower than the project site. The former Alice Griffith housing development, located across Carroll Avenue from the project site, rises approximately 15 feet above Carroll Avenue.

Neither Carroll Street nor Armstrong Avenue has sidewalks adjacent to the project site. There are no existing trees on site or around the perimeter of the site, and unmanaged vegetation grows around the site's perimeter. Vehicular access to the site is via a gate and two curb cuts along Carroll Avenue. Regional access to the site is via Carroll Avenue, Third Street, and U.S. Route 101 (the Bayshore Freeway).

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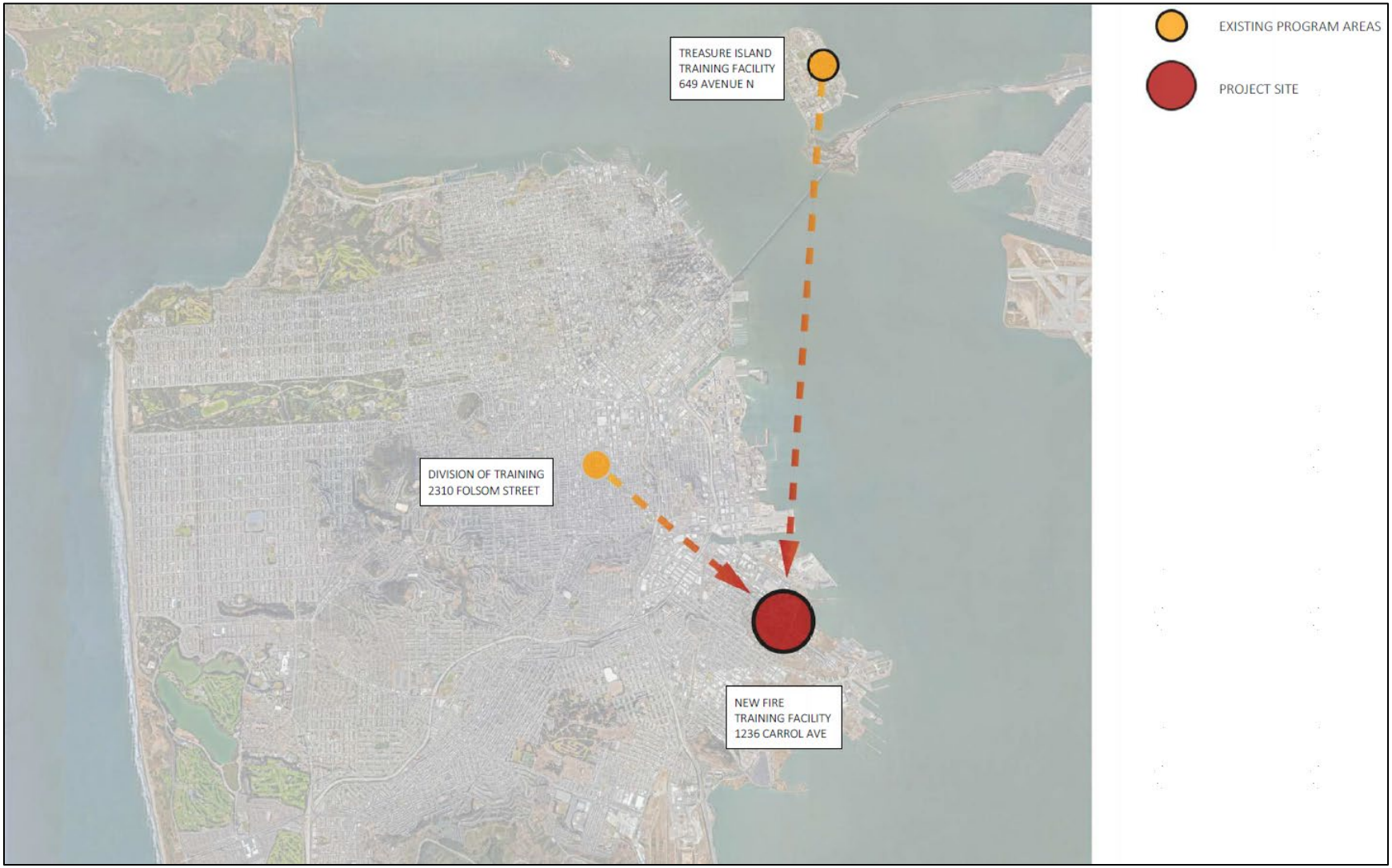
[1] The streets in the project site vicinity are not aligned with standard compass directions. For purposes of this analysis, Ingalls Street and all parallel streets are described as running north to south, and Carroll Avenue and all parallel avenues are described as running east to west.

[2] A "paper street" is a street that exists on the City map, but it is not built or used as a roadway. Armstrong Avenue is only partially paved between Hawes Street and Griffith Street. Much of the right-of-way is dirt. The street contains no sidewalks or striping.

Figure 1: Project Location

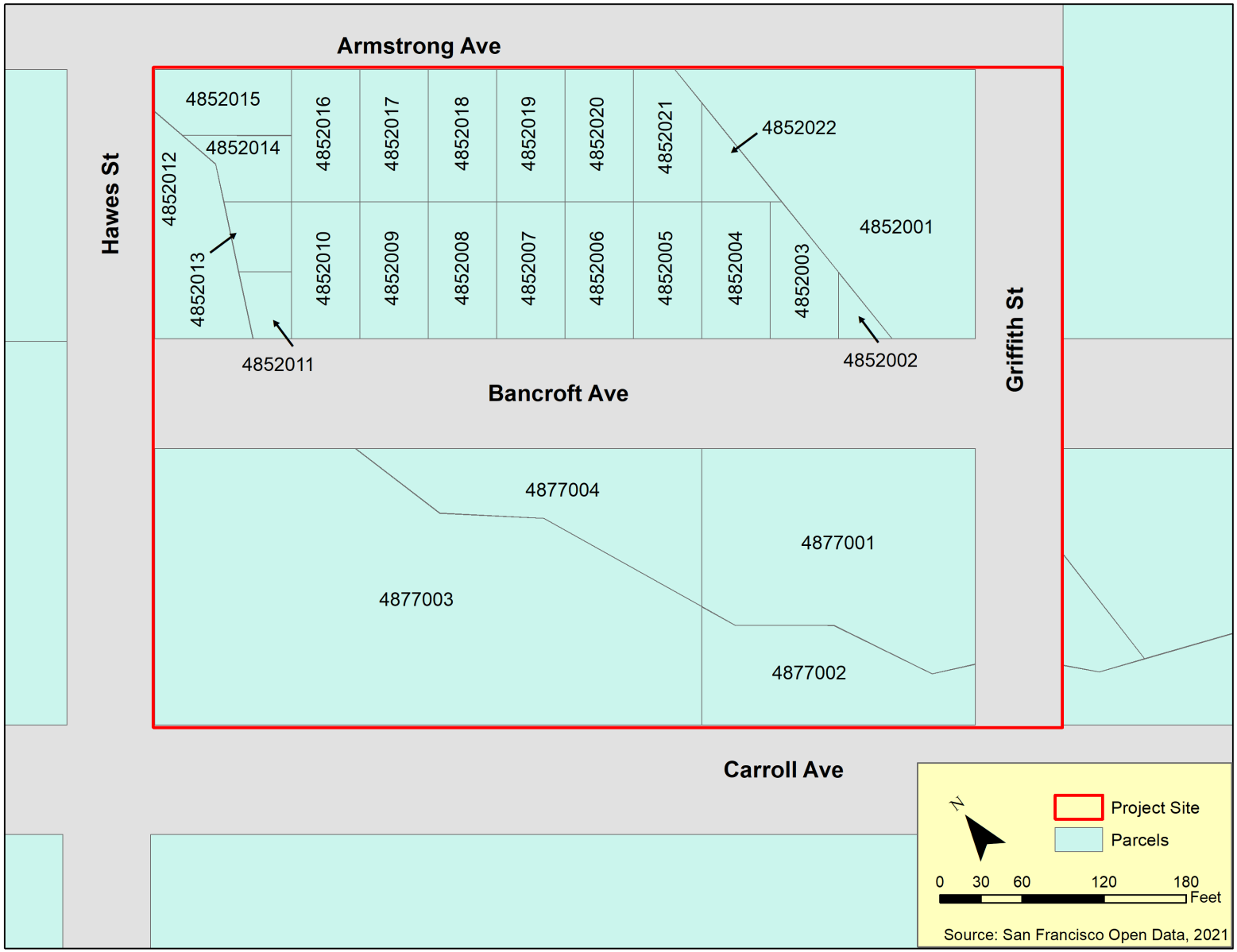


Source: San Francisco Public Works, 2021

Figure 2: **Project Location at Neighborhood Scale**

Source: San Francisco Public Works, 2021

Figure 3: **Parcel Map**



Source: San Francisco Public Works, 2021

2. Proposed Project Characteristics

The San Francisco Fire Department (fire department or project sponsor) proposes to acquire the property and construct a new fire-training facility (the proposed project). The current action is to purchase and acquire the property. Following acquisition of the property, the project sponsor would develop detailed plans for the project site and would seek project approvals for the proposed fire-training facility. The San Francisco Planning Department (planning department) will conduct subsequent additional project-level environmental review of the proposed project and, if required, provide a new California Environmental Quality Act (CEQA) determination for the fire station based on the project-level review.

The purpose of the fire-training facility is to provide necessary training facilities for effective firefighting, including live-fire training, classroom training, equipment training, and other forms of training. The new facility would consolidate and replace the fire department training facilities currently located at 649 Avenue N on Treasure Island and at 2310 Folsom Street (at 19th Street).

The proposed project would grade and improve the soil of the project site and construct three buildings—an administration building, an apparatus building, and a maintenance building (also referred to as "shops")—a training tower, various burn rooms, training props, simulated structures, and associated site improvements (**Figure 4**). The proposed buildings and structures are discussed in further detail below.

ADMINISTRATION BUILDING

The proposed three-story, 50-foot-tall, approximately 70,000-square-foot administration building would be in the southwestern portion of the project site. The proposed steel-framed structure would include administrative offices, conference rooms, break rooms, training classrooms, fitness rooms, lockers, and showers. It would also include a room within but secured from the rest of the administration building with its own street entrance and all-gender restroom, for use by the fire department's community programs. The building would include screening of rooftop mechanical equipment along the frontage on Carroll Avenue. This building would be in operation during business hours (7 a.m. to 5 p.m.); the community program room would be open 6 p.m. to 9 p.m. weeknights and 9 a.m. to 3 p.m. weekends.

APPARATUS BUILDING

The proposed one-story, 50-foot-tall, approximately 27,000-square-foot apparatus building would be situated in the southeastern corner of the project site, adjacent to the maintenance (shops) building. This one-story structure would contain a mezzanine situated above the ground floor. The structure would include four vehicle bays that would be accessible on the east side of the building. Two interior vehicle bays would be 45 feet tall to allow accessibility for fire trucks. The building would be used for training, storage, and fire-apparatus vehicles. It would also include a turnout gear storage area that would house protective clothing and a "dirty" classroom[3] where trainees would congregate after prop training. Vehicle maintenance would not occur on site.

[3] A dirty classroom is where trainees can enter after using props without having to do a full washing / cleaning.

Figure 4: Project Site Plan

Source: San Francisco Public Works, 2021

MAINTENANCE (SHOPS) BUILDING

The one-story, 40-foot-tall, approximately 19,200-square-foot maintenance building (shown as "Shops" in the site plan) would be situated in the southeast portion of the project site, adjacent to the apparatus building. The building would house metal and wood shops with associated storage areas for building and maintaining training props.[4]

VENTILATION PROP AND RESCUE PROP STRUCTURES

In addition to classroom and apparatus training, the proposed project would include fire-training controlled burn and simulated rescue operations that would occur at various on-site prop structures. Prop structures would comprise rescue props (which would include various structures to simulate situations that require rescue operations) and ventilation props (which would be used to perform vertical ventilation training[5]).

Approximately 10 prop and simulation structures would be constructed with various materials, including concrete, structural steel, wood, and masonry. These structures would be located in the northwest and center portions of the project site. A mock Bay Area Rapid Transit (BART) station, trench rescue, and outdoor confined-space rescue props would each have basement levels. Ventilation structures would be located in the northeastern portion of the lot.

LIVE-FIRE STRUCTURES

Similar to ventilation and rescue prop structures, the proposed project would include live-fire structures designed for partial burning to mimic real-world live-fire situations. These structures would be subject to frequent additions and reconstruction activities and would include the following:

- Training tower, which would be 110 feet tall (seven-stories), 40 feet wide, and 40 feet deep. In addition to live fire events, the structure would also be used for internal training exercises, ladder exercises, and external stair training. See **Figure 5**, which shows an example of the existing training tower at the Folsom Street facility.
- Condominium/apartment, which would be 60 feet tall, 50 feet wide, and 40 feet deep;
- Commercial structure, which would be 20 feet tall, 40 feet wide, and 32 feet deep;
- Victorian house, which would be 40 feet tall, 35 feet wide, and 20 feet deep;
- Container room, which would be 20 feet tall, 80 feet wide, and 32 feet deep; and
- Vehicle, which would be located on a 40-foot-square concrete pad. See **Figure 6** for an example.

The training tower, condominium/apartment, commercial structure, Victorian house, and container room live-fire structures would be equipped with exhaust capture systems. The proposed exhaust capture systems would primarily consist of an outer structure attached to the live-fire structure. The outer structure would capture and direct the smoke generated from fire training activities to a scrubber system (i.e., a type of pollution control equipment used to remove contaminated particles from gaseous exhaust streams) and exhaust stack. **Figure 7** shows an example of an existing exhaust capture system at the SFFD Treasure Island training facility. Further description of the exhaust capture system is included in the air quality technical analysis prepared for the proposed project.[6]

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[4] Props are structures that mimic real buildings and that are used to simulate real-world situations during firefighting training. Some props are permanent while others change to mimic real-life conditions.

[5] Vertical ventilation relieves a structure of smoke and heat for victim survival, visibility, and search.

[6] WSP, *Air Quality Technical Memorandum: 1236 Carroll Avenue Project, San Francisco, California*. November 2021.

Figure 5. Existing Live-Fire Training Tower at Folsom Street Facility

Source: San Francisco Fire Department, 2021

Figure 6. Example Vehicle Prop for Live Fire Training

Source: San Francisco Fire Department, 2018

Figure 7. Existing Live-Fire Training Exhaust Capture System at Treasure Island Facility

OTHER SITE FEATURES

The project site would include an approximately 3,300-square-foot staged hill located adjacent to the training tower. The hill would be a paved roadway surface used to mimic the San Francisco topography and would include a vehicle maneuvering training area. This area would consist of a 54,000-square-foot apparatus driving test course. The fire department would set up cones for drivers to navigate. In addition, the mock city street grid built around props would also be used as a driving course.

Two underground fiberglass fuel-oil tanks for fire department apparatus refueling (one 12,000-gallon diesel tank and one 6,000-gallon gasoline tank) would be provided, and a fuel dispenser would be installed near the apparatus building. In addition, propane would be stored in a metal 12,000-gallon grade tank securely anchored to a raised concrete pad. The tank would be used to induce burning on live-fire props.

UTILITIES

The proposed project would connect to existing water and sewage facilities under the unbuilt Bancroft Avenue. Water utilities to the structures and water tank would be approximately 2 feet deep, and sewer laterals would be approximately 12 feet deep. Excavation to install water utilities and sewer laterals would be undertaken at the same time as excavation for below-ground improvements. At-grade surfaces of the lot would be graded to direct runoff and stormwater to drop inlets, which would direct flows to mechanical filtration systems before discharging to the combined stormwater/sanitary sewer system. A trench for electrical service would be excavated to a depth of approximately 2 feet to the existing aboveground service on the south side of Carroll Avenue. The proposed project would involve construction of a riser with utility box to connect to the pole. The proposed project would provide underground utility connections to the various buildings and facilities.

The proposed project would include an emergency backup diesel generator within an acoustic enclosure along the southeast wall adjacent to the maintenance building. An emergency generator would have a 500-gallon capacity. The generator would operate up to 72 hours per year and be used only for power failures and testing. Heating, ventilation, and air conditioning and other mechanical equipment would be located on building roofs.

PARKING, LOADING AND BICYCLE FACILITIES

The proposed project would include surface parking for 60 vehicles along the frontage at Armstrong Street for staff and fleet vehicles, and surface parking for 56 vehicles along the eastern frontage for visitors and in-service vehicles. Surface parking would include six accessible spaces, 12 electric-vehicle charging stations, and 10 class 1 and 4 class 2 spaces for bicycle parking, and landscaping and ornamental screening that complies with Planning Code section 142, Screening and Greening of Parking and Vehicular Use Areas. Three driveways would provide access to the project site (**Table 1** and **Figure 8**):

- A two-way driveway on Hawes Street for visitor/staff/in-service circulation
- Two exit-only driveways on Carroll Avenue for fire-apparatus and general vehicle use.

Table 1: Vehicle Parking Spaces

# OF SPACES	PARKING	ACCESSIBILITY	LOCATION
5	Visitor	Publicly accessible	Lot on east side of administrative building
1	Visitor (Americans with Disabilities Act compliant)	Publicly accessible	Lot on east side of administrative building
46	Staff	Secured access	Along western and northern property boundary walls
20	In-Service	Secured access	Along western and northern property boundary walls
14	Fleet Vehicles	Secured Access	Along western and northern property boundary walls
1	Maintenance / Loading	Secured Access	
2	Specialty Vehicle	Secured Access	Lot on east side of apparatus building
27	Wildland Deployment	Publicly accessible	Along western and northern property boundary walls

The three driveways would include visual and/or audible warning devices for people walking as vehicles exit the driveways, and all driveways would be designed to accommodate larger trucks or vehicles with larger turning radii.

A 500-square-foot loading bay would be near the apparatus and maintenance (shop) buildings within a secured area. Only site staff would have access to this loading bay.

Figure 8: **Site Circulation**

Source: San Francisco Public Works, 2021

STREET AND LANDSCAPING IMPROVEMENTS

The proposed project would include no improvements to Carroll Avenue, or Armstrong Avenue. Griffith Street would be vacated, and the street would be incorporated into the project site. On Hawes Street, the proposed project would involve partial construction of a new street segment to City standards by grading the roadway to allow for an intersection at Carroll Avenue. Hawes street would be designed to include a potential intersection at Armstrong Avenue when that roadway is raised from the current grade, but this would not occur until the roadway grade changes are made. New sidewalks and curbs, with Americans with Disabilities-compliant curb ramps, would be installed along the Hawes Street frontage. The proposed project would involve construction of two 13-foot-wide travel lanes on Hawes Street, and the remaining 18 feet of right-of-way would be graded and protected by a temporary barrier.

Within Hawes Street, fire hydrants would be installed in the new sidewalk, and new stormwater catch basins would be installed and connected to existing lines. At the curb edge of the new sidewalk, 3-foot tree wells would be constructed at 20-foot intervals. Trees of a climate-appropriate species as recommended by the San Francisco Public Works Bureau of Urban Forestry would be planted in the wells. For the Armstrong Avenue street frontage (where no improvements are proposed), as well as within the vacated portion of Griffith Street, trees required by the Better Streets Plan would be planted within the landscaping buffer between the proposed fence and on-site parking areas. The proposed project would include new street lighting in the new sidewalk on Hawes Street following the recommendations of an illumination study.

The proposed project would include a 12-foot perimeter fence consisting of a combination of masonry wall and steel fence, with manual gates for pedestrians and automated gates for vehicles at driveways.

GROUND IMPROVEMENT, EXCAVATION, AND PIER INSTALLATION

To establish foundations and ground improvements, the proposed project would require a combination of excavation and ground improvement across the 317,300-square-foot project site to a depth of 20 feet across the project site, resulting in 17,000 cubic yards of excavation. Ground improvement would minimize earthquake-induced ground settlement across the site.[7] Any of the following ground-improvement methods may be used:

- Vibro-compaction, which uses a vibrator to penetrate to the design depth. Once the depth has been achieved, sand infill is poured in from the ground level around the vibrator, compacting at the base. More infill is added as the vibrator is gradually removed, until the infill has been built up to the desired elevation.
- Vibro-replacement, such as stone columns, which uses a vibrator to penetrate to design depth. Crushed stone is introduced into the hole using a pipe or water jets. More stone is added as the vibrator is gradually removed, until the crushed stone column has been built up to the desired elevation.
- Dynamic methods, such as deep dynamic compaction, which uses a drop weight. The drop weight is lifted and repeatedly dropped onto the ground surface. The vibrations are transmitted below the surface to improve soils at depth.
- Earthquake drains, which are prefabricated vertical drains made up of a perforated pipe wrapped in geotextile filter fabric. The drains are installed using a vibrator. The drains have high flow capacity, which

[7] San Francisco Department of Public Works, *SFFD Fire Training Facility: Geotechnical Characterization from subsurface exploration,* September 10, 2021.

helps water dissipate and reduces buildup of pressure in the soils below the water table, thereby reducing liquefaction potential.

- Other deep soil mixing, which improves soils by mechanically mixing them with dry cementitious binder, and interconnected shear walls, which are designed to resist lateral forces, such as from earthquakes.

To address Young Bay Mud consolidation beneath the site, ground improvement may also include drilled displacement columns, surcharging or pre-loading. Drilled displacement columns are concrete columns installed in a closely spaced array to reduce settlement and increase stability. Surcharging consists of applying load on the ground surface in excess of that associated with the long-term development conditions to accelerate consolidation. This can take the form of temporary fill embankments, constructed to a height that exceeds the design finished surface level, which are cut back to the design level following an appropriate period of consolidation settlement. Pre-loading involves placement of load on the ground surface prior to construction such that the imposed load is equivalent to the final project loading conditions. Sufficient time is then allowed for the ground to settle and strengthen as consolidation occurs under the imposed load. Once sufficient consolidation has been achieved the pre-load can be removed and the proposed project construction can commence. Both surcharging and preloading could be accomplished with or without wick drains. Wick drains are prefabricated geotextile filter-wrapped plastic strips with molded channels. These act as drainage paths to take water out of soil so it consolidates faster.

The proposed project would include a retaining wall around the perimeter of the site where the difference in elevation between the finished grade of the project site and the grade of the surrounding streets is greater than 2 feet, specifically along Armstrong Avenue and the northern portions of Hawes Street and Griffith Street.

To support the buildings and structures, a mix of shallow foundation and deep foundation options are under consideration. Shallow foundation options include mat foundations or spread footings. Deep foundations could include H piles, torque down steep pipe piles, auger-cast-in-place piles, or pre-cast concrete piles. Piles could require deep installation to a maximum depth of 100 feet; such piles would be installed with a combination of vibratory and impact hammers.

At-grade surfaces would be graded to direct runoff and stormwater to drop inlets which would direct flows to mechanical filtration systems before discharging to the combined stormwater/sanitary sewer system. The project sponsor would institute a regular schedule for inspection and maintenance.

SITE OPERATIONS

The fire-training facility would operate every day of the year, except for standard holidays, hosting multiple uses each week, including the following (**Table 2**):

- Recruit training program
- Annually mandated firefighter live-fire training
- Emergency Medical Service academies
- Fire training with partner fire agency or associated committees or citizen groups
- Community group events

In addition to participants listed in **Table 2**, an average of 32 staff members would be on site each day.

Table 2: Operational Participants and Schedules Summary

	AVERAGE NUMBER OF PARTICIPANTS	OCCURRENCE	WEEKLY SCHEDULE	DAILY OPERATING HOURS
Fire In-Service Training	30 to 35	Throughout the year	Monday to Friday; Weekends	9 a.m. to 4 p.m. 9 a.m. to 3 p.m.
Fire Academy	50	40 weeks	Monday to Friday	8 a.m. to 6 p.m.
Emergency Medical Service Academies	20	20 weeks	Monday to Friday	8 a.m. to 6 p.m.
Emergency Medical Service In-Service Training	25 to 30	Throughout the year	Monday to Friday	9 a.m. to 4 p.m.
Community Groups*	25 to 30	60 meetings or events	Evenings or weekends	6 p.m. to 9 p.m. (weeknights) 9 a.m. to 3 p.m. (weekends)
Totals	150 to 165	Throughout the year except for standard holidays	Full week	Generally 8 a.m. to 6 p.m. with the occasional evening event

* The conference rooms and classrooms in the apparatus building would be available for use outside of fire department working hours by fire department partners, committees, and community groups, and for events organized by the local Native American community.

Fire Academy and Fire In-Service Training

The proposed fire-training facility would be used for the fire academy to train firefighters. The facility would be operated with a combination of classroom learning and manipulative training exercises.

The facility would also be used for fire in-service training, which consists of 41 specific or specialized training exercise evolutions necessary to meet State Fire Marshall mandates, accreditation requirements, and industry best practices. The Office of the State Fire Marshal recommends that each of San Francisco's 1,500 firefighters participate in 16 hours of live-fire training annually, which equates to more than one engine company[8] accessing the live-fire training facility every day of the year. There is a classroom component for in-service training, but most training hours are spent on scenario-based training props.

Training with live-fire props for academy and in-service training would take place up to four times per day for up to 75 days per year. Fire vehicles and apparatus used for these programs, including fire engines, fire trucks, the Rescue Squad Company,[9] and wildland pickup trucks, are brought in and out of the station daily, with approximately 10 arrivals and 10 departures a day. Sirens would sound during training 36 times per year for no more than 10 seconds at a time. Each use would be once per day for a period of four days, three weeks in a row, three times per year. Training would occur during normal business hours. Over the course of a life-fire training day, the same prop would be lit up to four times. During each live-fire event, up to 192 pounds of a combination of wood and hay, as well as up to 111 gallons of propane, would be burned. The fire would burn for up to 30 minutes. Gas-powered equipment, such as chainsaws and rotary saws, would be used.

[8] San Francisco Fire Department comprises 43 engine companies, 19 truck companies, a dynamically deployed fleet of ambulances, 2 heavy rescue squad units, 2 fireboats, and multiple special-purpose units. https://sf-fire.org/about-sffd-operations.

[9] The Rescue Squad Company is a specialized company in the SFFD that deals with technical rescues and other specialized rescue operations (trench, confined space, high angle, hazmat, dive operations, surf).

In addition, training at ventilation props would occur each day. For this training, smoke and heat would be produced and ducted to the ventilation prop to facilitate training. Ventilation prop training would occur for up to 30 minutes per day.

Emergency Medical Service Academies and In-Service Training

Emergency Medical Service academies and in-service training would consist of several recurring programs of emergency medical technician training that last three to eight weeks. This program manages and maintains all medical licensures and certifications for the fire department members and includes classroom and hands-on instruction with a variety of medical equipment, proper records keeping, online training, and tracking. Each academy would be offered two to three times a year (based upon need) and is estimated to be active 40 weeks of the year. Emergency Medical Service academies and in-service training would not include live fires, and in-service training would occur during normal business hours.

Community Groups

Partner fire agency and citizen group training sessions would use a combination of classroom meeting spaces and outdoor training facilities. The facility would also host grant-funded technical rescue training programs training to respond and recover from catastrophes and terrorist attacks. These events would occur on weekends or evenings throughout the year.

CONSTRUCTION SCHEDULE

The proposed project would be constructed over a 30-month period—beginning June 2024 and finishing December 2026—consisting of the phases listed in **Table 3**. Construction would occur during daytime hours (no nighttime construction).

Table 3: Construction Schedule

CONSTRUCTION PHASE	DEFINITION	ASSOCIATED SCHEDULE
Site Preparation	Clearing vegetation (grubbing)	06/2024–09/2024
Grading	Cut and fill of land to ensure the proper base and slope for the construction foundation	10/2024–01/2025
Building Construction	Foundation and Shoring	02/2025–08/2025
	Building and Structures	09/2025–10/2026
Architectural Coating & Finishing	Application of coatings to both the interior and exterior of buildings or structures	08/2026–10/2026
Paving	Laying of concrete or asphalt in parking lots or roads	09/2026–12/2026

3. Project Approvals

The project sponsor is seeking to acquire and purchase the property to develop a fire-training facility. San Francisco Board of Supervisors approval of the property acquisition would constitute the approval action for the proposed project. The approval action date establishes the start of the 30-day period for the appeal of the final mitigated negative declaration to the board pursuant to section 31.04(h) of the San Francisco Administrative Code.

Following acquisition of the property, the project sponsor would submit detailed plans of the proposed project to the planning department for additional project-level review. This additional environmental review

would be subject to all applicable public notice and appeal procedures in accordance with CEQA, the CEQA Guidelines, and Chapter 31 of the Administrative Code.

The project sponsor expects to seek approvals for the proposed fire-training facility, including but not limited to the following:

- **San Francisco Port Commission**
  - Approval of jurisdictional transfer of Port property.
- **San Francisco Board of Supervisors**
  - Approval to vacate Griffith Street and incorporate it into the project site.
  - Approval of jurisdictional transfer of Port property.
- **San Francisco Planning Commission**
  - Special Use District or Planning Code Text Amendment/Zoning Map Amendment.
- **San Francisco Department of Building Inspection**
  - Approval of a new construction permit.
- **San Francisco Department of Public Health**
  - Approval of site mitigation plan and final project report or no further action letter in compliance with San Francisco Health Code article 22A (Maher Ordinance).
  - Construction dust control plan in compliance with San Francisco Health Code article 22B (Construction Dust Control Ordinance).
- **San Francisco Public Works**
  - Approval of erosion and sediment control plan (San Francisco Public Works Code section 146.7.)
  - Approval of street improvement permits.
  - Approval of street tree permit.
  - Approval of nighttime construction permit (San Francisco Police Code section 2908), if necessary.
- **San Francisco Municipal Transportation Agency**
  - Approval of street improvements.
  - Construction-related approvals, as applicable.
- **San Francisco Public Utilities Commission**
  - Approval of connection to the existing combined sewer within Bancroft Street.
  - Approval of discharge permit for construction-period dewatering and discharge to the combined sewer system.
- **Actions by Other Government Agencies**
  - Bay Area Air Quality Management District – approval of any necessary air quality permit for installing, operating, and testing (e.g., Authority to Construct/Permit to Operate) of individual air pollutant sources, such as the proposed emergency backup generator.
  - California State Lands Commission – approval of value of Port property for jurisdictional transfer
  - California State legislation – approval of Port property for jurisdictional transfer.

B. PROJECT SETTING

The neighborhood elevation decreases from south to north. As such, the former Alice Griffith housing development is elevated several feet above Carroll Avenue, the project site is at the same elevation as Carroll Avenue, and Armstrong Avenue is several feet lower than the project site. Industrial uses, and production, distribution, and repair uses are to the north and west. The former Alice Griffith housing development is across Carroll Street to the south. Southeast of the project site are five-story residential buildings. East of the site is vacant land that is part of the Candlestick Point State Recreation Area.

Surrounding the project site, Hawes Street, Griffith Street, and Armstrong Avenue are partially or completely unbuilt. Neither Carroll Street nor Armstrong Avenue have sidewalks adjacent to the project site. Unmanaged vegetation grows around the site's perimeter. There are no street trees surrounding the project site. Vehicular access to the site is via a driveway that extends onto the Griffith Street right-of-way north of Carroll Avenue.

Regional vehicular access to the site is via Carroll Avenue, Third Street, and U.S. Route 101 (the Bayshore Freeway). Carroll Avenue runs east–west between the Caltrain tracks (one block west of Third Street) and Arelious Walker Drive and has one travel lane in each direction. Sidewalks on Carroll Avenue are discontinuous, and on-street parking is generally permitted west of Ingalls Street and east of Giants Drive.

There is no public transit service on Carroll Avenue adjacent to the project site. The Muni T Third Street light-rail line operates on Third Street, with a stop at Carroll Avenue, about one-half mile west of the project site. The T Third Street light-rail line runs south of the project site along Third Street and Bayshore Boulevard and runs north to downtown San Francisco along Third Street and The Embarcadero. The closest Muni bus routes include the 29 Sunset and the 54 Felton routes. The 29 Sunset route connects the Bayview and Presidio neighborhoods, and runs on Fitzgerald and Gilman avenues to the south of the project site (nearest bus stop is at the intersection of Ingalls Street/Fitzgerald Avenue, about 0.35 mile southwest of the project site), while the 54 Felton route connects the Bayview and Lakeshore neighborhoods, and runs on Van Dyke Avenue to the north of the project site (nearest bus stop is at the intersection of Ingalls Street/Van Dyke Avenue, about 0.45 mile northwest of the project site). The 54 Felton route provides service to the BART Balboa Park and Daily City stations, while the 29 Sunset route provides service to the BART Balboa Park Station.

Most of the project site is within a Core Production, Distribution, and Repair (PDR-2) Use District, and the northeastern portion of the site is within a Public (P) Use District. The project site is within a 40-X Height and Bulk District.

Cumulative Setting

CEQA Guidelines section 15310(b)(1) provides two methods for cumulative impact analysis:

- The **list-based approach** uses a list of projects producing closely related impacts that could combine with those of a proposed project to evaluate whether the proposed project would contribute to significant cumulative impacts.
- The **projections-based approach** uses projections contained in a general plan or related planning document to evaluate the potential for cumulative impacts.

This analysis employs both the list-based and projections-based approaches, depending on which approach best suits the resource topic being analyzed.

Cumulative development in the project vicinity (within an approximately 0.25-mile radius of the project site) is provided in **Table 4** and shown in **Figure 9**. These projects are either projects for which the planning department has a project application on file or projects that have been entitled but have not yet begun construction. As shown, these projects include new residential, mixed-use, and production, distribution, and repair projects.

Table 4: Cumulative Projects in the Vicinity of the Project Site

ADDRESS	PLANNING DEPARTMENT CASE NO.	PROJECT DESCRIPTION
Candlestick Point–Hunters Point Shipyard Phase II	2007.0946E	This project would include redevelopment plans, rezoning, projects, and infrastructure for the 693-acre site, including 10,672 dwelling units; 255,000 square feet of artist studios; 100,000 square feet of community uses; a 64,000-square-foot film arts center; 250,000 square feet of hotel uses; 410,000 square feet of institutional uses; 4,896,500 square feet of research and development / office use; 270,000 square feet of regional retail; 360,500 square feet of neighborhood retail; and 75,000 square feet of maker space. The project would also include a 300-slip marina, water taxi, 337.7 acres of parks and open space, and 19,123 off-street parking spaces. In the Alice Griffith district, up to 1,210 new homes on approximately 20 net acres would be built. (337 units have been constructed and are occupied at 1107 Carroll Avenue.) A new 1.4-acre Alice Griffith Neighborhood Park would extend for several blocks near the center of the neighborhood parallel with Egbert Avenue. Redevelopment of the Alice Griffith housing development would proceed in phases. The existing 256 public-housing units would be demolished on the existing San Francisco Housing Authority site and 844 new homes would be constructed, along with neighborhood-serving retail and services, open space, and new streets. Candlestick Point–Hunters Point Shipyard Phase II would also include the following roadway improvements: ▪ A reconfigured Carroll Avenue between the new street network in Candlestick Point and Ingalls Street would include 12- to 13-foot-wide sidewalks, landscaping, and bioretention; class 1 bicycle lanes each way; and two travel lanes each way. Streetscape improvements could include enhanced streetscape design, including street trees, sidewalk plantings, furnishings, and paving treatments. ▪ Ingalls and Griffith streets would contain two travel lanes and on-street parking and loading on both sides of the roadway. Thomas Avenue would be converted from a two-lane to four-lane facility with on-street parking retained on both sides of the roadway. During the evening peak period, on-street parking would be prohibited on Ingalls and Griffith streets, such that there would be four travel lanes connecting the entire auto route around Yosemite Slough (Carroll Avenue, Ingalls Street, Thomas Avenue, Griffith Street, and Crisp Avenue). New traffic signals

ADDRESS	PLANNING DEPARTMENT CASE NO.	PROJECT DESCRIPTION
		would be installed at the intersections of Thomas Avenue/Ingalls Street and Palou Avenue/Crisp Road. ▪ A new Yosemite Slough bridge would extend Arelious Walker Drive from Candlestick Point to Hunters Point Shipyard. The bridge would have a 45-foot-wide right-of-way and would contain two 11-foot-wide bus rapid transit lanes, and an 8-foot-wide, one-way class 1 bicycle/pedestrian path on each side. ▪ The Bay Trail would be constructed within the project site, as would connections with the Bay Trail around Yosemite Slough. (See Yosemite Slough Wetland Restoration Project, below.)
1313 Armstrong Avenue	2020-010684ENV	The proposed project would merge three parcels, demolish existing structures, and construct a new 293,100-square-foot, 40-foot-tall production, distribution, and repair building, with 4,600 square feet of accessory office and 50,000 square feet of accessory parking (accommodating 141 parking spaces). The proposed production, distribution, and repair uses would include parcel delivery. The project would improve Carroll Avenue and Armstrong Avenue between Ingalls Street and Hawes Street, including installation of new sidewalks, paving, and lane and parking striping.
1353 Yosemite Avenue / 2350 Ingalls Street / 1401 Yosemite Avenue	2016-008604ENV	The proposed project would expand an existing production, distribution, and repair facility by constructing an approximately 16,830-square-foot, two-story, 38-foot 4-inch-tall production, distribution, and repair building with accessory office uses on the vacant portion of 1353 Yosemite Avenue and constructing an enclosure over Ingalls Street for sanitary transport of food products from 1353 Yosemite Avenue to the 2350 Ingalls Street building.
853 Jamestown Avenue	2019-002743ENV	The proposed project would demolish an existing surface parking lot and construct 122 residential condominiums in 20 buildings on parcel 4991/076.
Yosemite Slough Wetland Restoration Project within Candlestick Point State Recreation Area: Phase 3.	State Clearinghouse No. 2005122023	The proposed project would include habitat restoration and user amenities on the south side of Yosemite Slough. Along the waterfront, 11 acres of wetlands would be constructed that would include 3 acres of tidally influenced wetlands and a bird-nesting island. Construction would include formalization of the San Francisco Bay Trail along both sides of the slough.
1400 Carroll Ave	2019-012354ENV	The proposed project would include a two-story addition to an existing one-story warehouse, resulting in a three-story, approximately 40-foot-tall, 29,263-square-foot industrial building.
2200-2250 Jennings Street	2018-013944PRJ	The proposed project would merge six lots and demolish an existing warehouse and parking lot and construct a 13,500-square-foot, 26-foot-tall warehouse building.
Bayview Community-Based Transportation Plan		This plan proposes new sidewalks on Carroll Avenue between Hawes and Griffith streets and between Keith and Jennings streets, as well as crosswalk improvements on north to south streets to the west, north and south of the project site. No improvements would be made on Carroll Avenue east of Third Street.

ADDRESS	PLANNING DEPARTMENT CASE NO.	PROJECT DESCRIPTION
		This plan also includes the now-completed San Francisco Municipal Transportation Agency Quick Build project to convert parallel parking spaces to perpendicular/angle parking spaces on Carroll Avenue east of Griffith Street. As such, this specific improvement is included in this analysis's existing conditions and is not a cumulative project.

Figure 9: Cumulative Projects Map

C. COMPATIBILITY WITH EXISTING ZONING AND PLANS

	APPLICABLE	NOT APPLICABLE
Discuss any variances, special authorizations, or changes proposed to the planning code or zoning map, if applicable.	☒	☐
Discuss any conflicts with any adopted plans and goals of the City or Region, if applicable.	☒	☐
Discuss any approvals and/or permits from city departments other than the planning department or the department of building inspection, or from regional, state, or federal agencies.	☒	☐

The current action is to purchase and acquire the property. Following acquisition of the property, the project sponsor would develop detailed plans for the project site and the proposed fire-training facility would be reviewed for compliance with applicable plans and policies. This section discusses potential inconsistencies of the proposed project with applicable local and regional plans and policies. Inconsistencies with existing plans and policies do not, in and of themselves, indicate a significant physical environmental effect. To the extent that adverse physical environmental impacts may result from such inconsistencies, these impacts are analyzed in this initial study under the specific environmental topic sections in Section E, Evaluation of Environmental Effects.

The proposed project would intensify land uses on the site and—to the extent that there are conflicts between the proposed project and applicable plans, policies, and regulations—City decision-makers would consider those conflicts when deciding whether to approve, modify, or reject the proposed project.

1. San Francisco Planning Code and Zoning Maps

The planning code, which incorporates by reference the City's zoning maps, governs permitted uses, densities, and the configuration of buildings within San Francisco. Permits to construct new buildings (or to alter or demolish existing ones) may not be issued unless (1) the proposed project complies with the planning code; (2) an allowable exception or variance is granted; or (3) legislative amendments to the planning code are included and adopted as part of the proposed project.

ALLOWABLE USES

The project site is located in the Core Production, Distribution, and Repair (PDR-2) and Public (P) zoning districts, as indicated in **Table 5**.

Table 5: Project Site Zoning and Height and Bulk District

BLOCK/LOT	OWNERSHIP/JURISDICTION	ZONING	HEIGHT/ BULK DISTRICT
4852/001	Public - Port of San Francisco	P	40-X
4852/002 through /022	Private	PDR-2	40-X
4877/001 through /004	Private	PDR-2	40-X

According to Planning Code section 210.3, the PDR-2 zoning district is intended to encourage the introduction, intensification, and protection of a wide range of light and contemporary industrial activities. Thus, this district prohibits new housing, large office developments, large-scale retail, and the heaviest of industrial uses, such as incinerators. The conservation of existing flexible industrial buildings is also encouraged. This district permits certain non-industrial, non-residential uses, including small-scale retail and office, entertainment, certain institutions, and similar uses that would not create conflicts with the primary industrial uses or are compatible with the operational characteristics of businesses in the area.

According to Planning Code section 211, the P zoning district is intended to apply to land that is owned by a governmental agency and in some form of public use, including open space. Any lot in a P zoning district may be occupied by a principal use listed in Planning Code section 211.1, including structures and uses of governmental agencies not subject to regulation by the planning code; public structures and uses of the City and County of San Francisco, and of other governmental agencies that are subject to regulation by the planning code, including neighborhood agriculture as defined in Planning Code section 102; and accessory nonpublic uses. Certain uses are also conditionally permitted.

The proposed project would be consistent with the PDR-2 and P zoning districts because the fire department's training facility would be considered a public use with light-industrial characteristics, which are either permitted or conditionally permitted within these districts.

HEIGHT AND BULK

The project site is within the 40-X Height and Bulk District. This Height and Bulk District allows for buildings up to 40 feet in height. The condominium/apartment live-fire structure (60 feet), training tower (110 feet), administration building (50 feet), and apparatus building (50 feet) would exceed this height limit. However, it is anticipated as part of future project approvals, a zoning text and map amendment would be undertaken to apply a Special Use District on the project site. This Special Use District would accommodate these buildings' heights. Section E, Evaluation of Environmental Effects, evaluates the environmental effects of the proposed project's proposed height and bulk.

PLANNING CODE REQUIREMENTS

The planning code has certain requirements for floor area ratio (FAR),[10] setbacks, open space, parking and loading, and street trees that the proposed project would have to comply with in the P and PDR-2 districts:

- A FAR of 3-to-1 is allowed in a 40-X Height and Bulk District.
- Maximum off-street vehicle parking is limited to 1.5 parking spaces for each 2,000 square feet of occupied floor area, where the occupied floor area exceeds 10,000 square feet (according to Planning Code section 151).
- A minimum of two bicycle parking spaces (or one class 1 space for every 5,000 square feet of occupied floor area) and a minimum of two bicycle parking spaces (or one class 2 space for every 2,500 occupied square feet of publicly accessible or exhibition area) are required (according to Planning Code section 155.2).
- Zero off-street freight-loading spaces are required for less than 100,000 square feet of occupied floor area, one space is required for 100,001 to 200,000 square feet of occupied floor area, two spaces are required for 200,001 to 500,000 square feet of occupied floor area, and three spaces (plus one for each

[10] Floor area ratio is a measure of building intensity based on the ratio between the total floor area to be built on a site and the size of that site.

additional 400,000 square feet) is required for more than 500,000 square feet of occupied floor area (according to Planning Code section 152).

- Streetscape and pedestrian improvements are required (according to Planning Code section 138.1).

Compliance with planning code requirements would be determined when site plans are submitted to the planning department for review.

2. Plans and Policies

SAN FRANCISCO GENERAL PLAN

The San Francisco General Plan (general plan) establishes objectives and policies to guide land use decisions related to the physical development of San Francisco and comprises 10 elements, with each addressing the following topics that apply citywide:

- Air quality
- Arts
- Commerce and industry
- Community facilities
- Community safety
- Environmental protection
- Housing
- Recreation and open space
- Transportation
- Urban design

Section E, Evaluation of Environmental Effects, discusses any conflict between the proposed project and policies that relate to physical environmental issues. The compatibility of the proposed project with general plan policies that do not relate to physical environmental issues would be considered by decision-makers as part of their decision whether to approve or disapprove the proposed project. The proposed project would grade the site and would involve the construction of an administration building, an apparatus building, a maintenance shop, prop structures, and live-fire structures for the fire-training facility; the proposed project would not introduce incompatible land uses to the neighborhood and would not otherwise conflict with any general plan policies or objectives. Thus, the proposed project would not be inconsistent with the general plan.

The project site is within the Bayview Hunters Point Redevelopment Project Area Zone 2 and is also within the boundaries of the Bayview Hunters Point Area Plan. While the project site is within a Redevelopment Project Area (under the jurisdiction of the Office of Community Investment and Infrastructure), it is subject to the planning code and the general plan. The proposed project would be subject to general plan consistency findings as part of the proposed rezoning, street vacation, and other street improvements.

PRIORITY POLICIES

In November 1986, the voters of San Francisco approved Proposition M, the Accountable Planning Initiative, which added section 101.1 to the planning code and established eight priority policies. The following policies (and the topics in Section E, Evaluation of Environmental Effects) address the environmental issues associated with these policies:

- Preservation and enhancement of neighborhood-serving retail uses
- Protection of neighborhood character
- Preservation and enhancement of affordable housing (Section E.3, Population and Housing, regarding housing supply and displacement issues)
- Discouragement of commuter automobiles (Section E.6, Transportation and Circulation)
- Protection of industrial and service land uses from commercial office development and enhancement of resident employment and business ownership
- Maximization of earthquake preparedness (Section E.16, Geology and Soils)
- Preservation of landmark and historic buildings (Section E.4, Cultural Resources)
- Protection of open space (Section E.10, Wind; Section E.11, Shadow; Section E.12, Recreation; and Section E.14, Public Services)

Before issuing a permit for any project that requires an initial study under CEQA, issuing a permit for any demolition, conversion, or change of use, and taking any action that requires a finding of consistency with the general plan, the City is required to find that the proposed project or legislation would be consistent with the priority policies.

As noted previously, decision-makers will consider the compatibility of the proposed project with general plan objectives and policies that do not relate to physical environmental issues as part of their decision whether to approve or reject the proposed project. Any potential conflicts identified as part of that process would not alter the physical environmental effects of the proposed project.

REGIONAL PLANS AND POLICIES

The four principal regional planning agencies and their overarching policies and plans (noted in parentheses) that guide planning in the nine-county Bay Area include the following:

- Bay Area Air Quality Management District (2017 Bay Area Clean Air Plan)
- Metropolitan Transportation Commission (Plan Bay Area 2040)[11]
- San Francisco Bay Regional Water Quality Control Board (San Francisco Basin Plan)
- San Francisco Bay Conservation and Development Commission (San Francisco Bay Plan)

Due to the location, size, and nature of the proposed project, the proposed project is not anticipated to be inconsistent with regional plans and policies.

[11] Plan Bay Area 2040 is being updated. Plan Bay Area 2050 is anticipated to be final in fall 2021.

D. SUMMARY OF ENVIRONMENTAL EFFECTS

The proposed project could potentially affect the environmental factor(s) checked below. The following pages present a more detailed checklist and discussion of each environmental factor.

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

E. EVALUATION OF ENVIRONMENTAL EFFECTS

This initial study examines the proposed project to identify potential effects on the environment. For each item on the initial study checklist, the evaluation has considered the impacts of the proposed project both individually and cumulatively, except for regional air quality and greenhouse gases, which are considered on a cumulative basis due to the cumulative nature of the potential impacts.

All items on the initial study checklist that have been checked "Less than Significant Impact with Mitigation Incorporated," "Less than Significant Impact," "No Impact," or "Not Applicable," indicate that, upon evaluation, staff has determined that the proposed project could not have a significant adverse environmental effect relating to that issue. A discussion is included for those issues checked "Less than Significant Impact with Mitigation Incorporated" and "Less than Significant Impact" and for most items checked "No Impact" or "Not Applicable." For all of the items checked "No Impact" or "Not Applicable" without discussion, the conclusions regarding potential significant adverse environmental effects are based upon field observation, staff experience, and expertise on similar projects, or standard reference material available within the planning department, such as the department's Transportation Impact Analysis Guidelines for Environmental Review, or the California Natural Diversity Database and maps, published by the California Department of Fish and Wildlife.

Mitigation measures are identified, where feasible, for impacts considered significant or potentially significant. The project sponsor has indicated that if the proposed project were approved, they would incorporate all mitigation measures identified in this initial study as part of the proposed project. Mitigation measures are not required for environmental impacts that are not found to be significant. Therefore, for resource topics for which this initial study finds the proposed project's physical environmental impact to be less than significant, the planning department could identify measures that would further lessen the already less-than-significant impacts of the proposed project; these measures would be identified as "improvement measures." Impacts are numbered and shown in **bold** type, and the corresponding mitigation measures, where identified, are numbered and indented, and follow impact statements. Impacts and mitigation measures are numbered consecutively and include an abbreviated reference to the impact section (i.e., CR for Cultural Resources).

Public Resources Code Section 21099

Aesthetics and Parking. In accordance with California Public Resources Code section 21099, Modernization of Transportation Analysis for Transit Oriented Projects, aesthetics and parking will not be considered in determining if a project could result in significant environmental effects, provided a project meets all of the following three criteria:

1. A project is in a transit priority area.
2. A project is on an infill site.
3. A project is residential, mixed-use residential, or an employment center.

The proposed project does not meet the above criteria; therefore, this initial study considers aesthetics and the adequacy of parking in determining the significance of project impacts under CEQA.[12]

Cumulative Analysis

CEQA Guidelines section 15355 states that the cumulative impact from several projects is the change in the environment that results from the incremental impact of a project when added to other closely related past, present, and reasonably foreseeable future projects. CEQA Guidelines section 15130(b)(1) provides for two approaches to cumulative impacts analysis:

- List-based approach prepared a list of probable future projects producing related impacts.
- Projections-based uses a summary of projects contained in an adopted local, regional, or statewide plan that describes or evaluates conditions contributing to the cumulative effect.

The discussion of cumulative impacts should reflect the severity of an impact and its likelihood of occurrence, but the discussion need not provide as great of detail as is provided for effects attributable to a project alone. The discussion of cumulative impacts should be guided by the standards of practicality and reasonableness and should focus on the cumulative impacts to which the identified other projects contribute, rather than the attributes of other projects that do not contribute to the cumulative impact (CEQA Guidelines, section 15130[b]).

In this initial study, cumulative impacts are analyzed for each environmental topic and the proposed project's contribution to a cumulative impact, if any, is discussed. The cumulative impact analysis in this initial study may employ a list-based approach or a projections approach, depending on which approach best suits the individual resource topic being analyzed. As described above under Cumulative Setting, cumulative projects within a 0.25-mile radius of the project site are represented in **Table 4** and shown in **Figure 9**. These projects may be considered in determining environmental effects that are more localized. A projections-based analysis would consider county-wide or regional growth and is typically based on growth projections developed by the Association of Bay Area Governments and refined by planning department staff. The cumulative analysis defines the cumulative context appropriate for analysis of each specific environmental topic.

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[12] San Francisco Planning Department, *Eligibility Checklist: CEQA Section 21099 – Modernization of Transportation Analysis,* September 27, 2021. This document (and all documents cited in this initial study unless otherwise noted) is available for review on the San Francisco Property Information Map, which can be accessed at http://sfplanninggis.org/PIM/. Individual files can be viewed by clicking on the Planning Applications link, clicking on the "More Details" link under the project's environmental case number (2021-004847ENV), and clicking on the "Related Documents" link.

1. Land Use/Planning

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

Impact LU-1: The proposed project would not physically divide an established community. (No Impact)

The division of an established community typically involves constructing a physical barrier to neighborhood access (such as a new freeway) or removing a means of access (such as a bridge or a roadway). The proposed project would involve construction of a fire-training facility within established lot boundaries. The proposed project would not construct a physical barrier to neighborhood access. Unbuilt Bancroft Avenue, which runs east to west through the project site, would be closed and Griffith Street would be vacated and incorporated into the project site. However, those streets are not currently used for pedestrian access. The proposed project would involve construction of a new street segment of Hawes Street between Carroll Avenue and Armstrong Avenue, including street grading and travel lanes, as well as a sidewalk on the east side of the street.

Therefore, the proposed project would have ***no impact*** related to physically dividing an established community, and no mitigation would be required.

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

Land use impacts could be considered significant if the proposed project would conflict with any plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental impact. The determination as to whether a conflict with a land use plan, policy, or regulation is significant under CEQA is based on whether that conflict would result in a significant physical environmental impact. The proposed project would not obviously conflict with any applicable land use plan, policy, or regulation such that an adverse physical change would result (see Section C, Compatibility with Existing Zoning and Plans).

Applicable land use plans that regulate development on the project site include the general plan and the planning code. As discussed in Section C, Compatibility with Existing Zoning and Plans, the proposed project would generally conform to the PDR-2 and P zoning districts.

The proposed project's condominium/apartment live-fire structure (60 feet), training tower (110 feet) structure, administration building (50 feet), and apparatus building (50 feet) would not conform with the 40-X Height and Bulk District. However, it is anticipated as part of future project approvals, a zoning text and map

amendment would be undertaken to apply a Special Use District on the project site. This Special Use District would accommodate the proposed buildings' heights.

The City defines the purpose of the 40-X Height and Bulk District as:

- Relation of the height of buildings to important attributes of the city pattern and to the height and character of existing development
- Relation of the bulk of buildings to the prevailing scale of development to avoid an overwhelming or dominating appearance in new construction
- Promotion of building forms that will respect and improve the integrity of open spaces and other public areas
- Promotion of harmony in the visual relationships and transitions between new and older buildings
- Protection and improvement of important city resources and of the neighborhood environment
- Conservation of natural areas and other open spaces
- Direction of new development to locations that are appropriate in terms of land use and transportation[13]

Based on preliminary site plans, the proposed project would avoid an overwhelming or dominating appearance in new construction by placing the tallest feature—the training tower structure—near the center of the property. This would prevent an overwhelming or dominating appearance of the tower at street level. In addition, the training tower structure would be the only structure taller than 60 feet. The remainder of the project site buildings and structures would be 50 feet or less, which would relate to the prevailing scale of built structures in the surrounding area, and the proposed project would not include any new buildings at the property line. This arrangement and of buildings would "step down" from the tallest structure at the interior of the site to shorter structures and parking lots at the site's edges, which would promote the harmony of visual relationship and transition to building heights in the surrounding neighborhood, as well as maintain integrity of open spaces and other public areas to the east and north. Although the arrangement of site buildings could be changed during final design, the planning department would review the site plan and layout prior to approval.[14] As indicated in Section E.8, the proposed project would not conflict with policies regulating air quality.

Finally, as part of future project approvals, zoning text and map amendments would be undertaken to apply a Special Use District on the project site. These amendments would allow for building heights included in the proposed project. The physical environmental effects of the proposed project related to various resource topics are analyzed in this initial study. For these reasons, the impact of the proposed project with respect to any conflict with land use plans, policies, and regulations adopted for the purpose of mitigating an environmental effect would be ***less than significant***, and no mitigation would be required.

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

The cumulative context for land use effects is typically localized within the immediate vicinity of the project site or at the neighborhood level. Cumulative development in the project vicinity (within a 0.25-mile radius of the project site) includes the proposed projects identified in **Table 4**. The cumulative development

[13] https://codelibrary.amlegal.com/codes/san_francisco/latest/sf_planning/0-0-0-21392#JD_250

[14] Location of the training tower could be in a different location than stated above in the final project drawings.

projects in **Table 4**, consist of new residential, mixed-use, commercial, institutional, and production, distribution, and repair projects.

The proposed project would not physically divide an established community, and therefore would not combine with cumulative projects to physically divide an established community. During construction, the proposed project may require temporary sidewalk and street closures as could other cumulative construction activity in the project vicinity. Because all sidewalk and street closures are required to maintain pedestrian access through the surrounding areas and because any access detours or restrictions would be temporary in nature, cumulative impacts related to physically dividing an established community would be less than significant.

All cumulative projects are required to conform with the planning code, including its zoning maps, and they are required to be generally consistent with the general plan. Therefore, the proposed project in combination with cumulative development projects would not result in a significant cumulative impact related to a conflict with a land use plan, policy, or regulation adopted for the purpose of mitigating an environmental impact, and cumulative impacts would be ***less than significant***. No mitigation would be required.

2. Aesthetics

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

SETTING

As shown on **Figure 1**, the project site is located in the Bayview Hunters Point neighborhood. It includes two city blocks bounded by Carroll Avenue to the south, Hawes Street to the west, Armstrong Avenue to the north, and the eastern edge of Griffith Street to the east. The site is relatively undeveloped, with no structures. The site was paved in 2002, although a portion of the pavement has been covered by dirt, gravel, and debris from construction laydown activities. It is used as a temporary laydown and staging area for

construction projects located elsewhere. An SFPUC combined sewer/stormwater runs east beneath unbuilt Bancroft Avenue, turning northwest to the intersection of Hawes Street and Armstrong Avenue. The former Alice Griffith housing development is across Carroll Street to the south and is elevated several feet above Carroll Avenue and the project site. Industrial uses are located to the west and north, vacant land is to the east, and Yosemite Slough is two blocks to the north.

Hawes Street, Griffith Street, and Armstrong Avenue are partially or completely unbuilt. Although pedestrians can travel along Carroll Street and Armstrong Avenue, neither roadway has sidewalks adjacent to the project site. Unmanaged vegetation grows around the site's perimeter. There are no street trees. Unbuilt Bancroft Avenue runs east to west through the site. Vehicular access to the site is via two curb cuts and gate at Carroll Avenue. Regional access to the site is via Carroll Avenue, Third Street, and U.S. Route 101 (the Bayshore Freeway).

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

For purposes of this evaluation, a scenic vista is defined as a distant public view along or through an opening or corridor that is recognized and valued for its scenic quality. Based on this definition, the project site is not located adjacent to a scenic vista. The project site is located adjacent to the Candlestick Point State Recreation Area and one block from Yosemite Slough. In addition, Bayview Park is located several blocks south of the project site. Views of these open space resources would be altered from certain viewpoints by the training tower structure. However, the views would be similar to existing conditions. Based on the preliminary site plan, the training tower structure would be in the middle of the site, so no one at the street level would be directly adjacent to the tower where it would substantially block their views. The arrangement of proposed buildings would step down from the tallest structure at the interior of the site to shorter structures and parking lots at the project site's edges. Although the arrangement of buildings could be changed during final design, any modifications would be reviewed by the planning department prior to final approval at the site.[15]

Figure 10 provides a key map of view locations. Without- and with-project views of the Bayview Hunters Point neighborhood are shown in **Figure 11** through **Figure 18**.

[15] The final location of the training tower could be in a different location than shown in Figure 4.

Figure 10: Viewpoints Key Map

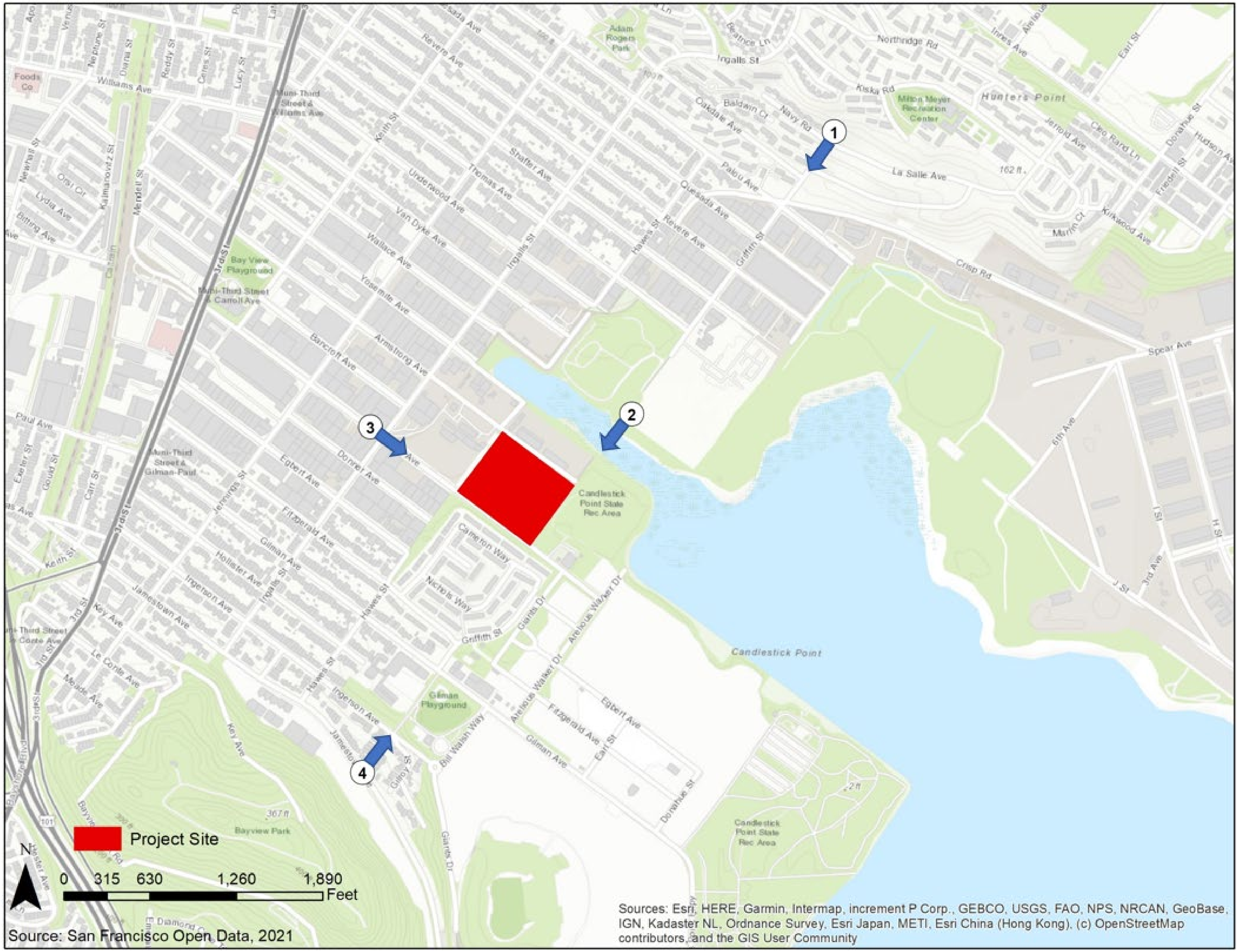

Figure 11: **Viewpoint 1: Navy Road and Griffith Street without the Proposed Project**

Figure 12: Viewpoint 1: Navy Road and Griffith Street with the Proposed Project

Figure 13: **Viewpoint 2: Thomas Avenue and Griffith Street without the Proposed Project**

Figure 14: Viewpoint 2: Thomas Avenue and Griffith Street with the Proposed Project

Figure 15: **Viewpoint 3: Carroll Avenue and Ingalls Street without the Proposed Project**

Figure 16: Viewpoint 3: Carroll Avenue and Ingalls Street with the Proposed Project

Figure 17: **Viewpoint 4: Jamestown Avenue and Griffith Street without the Proposed Project**

Figure 18: Viewpoint 4: Jamestown Avenue and Griffith Street with the Proposed Project

Views from the north across the project site would be slightly altered by the proposed project. As shown in **Figure 11**, and **Figure 12**, the proposed project would be visible in views from the north (at Navy Street and Griffith Street), but it would not obscure views of Bayview Park to the south. As shown in **Figure 13**, and **Figure 14**, the proposed project would be prominent in views from the north shore of Yosemite Slough, but it would only partially obscure views of Bayview Park. As shown in **Figure 15**, and **Figure 16**, the proposed project would not be prominent from the west side looking down Carroll Avenue. The only building that would be visible would be the training tower structure. As shown in **Figure 17** and **Figure 18**, the proposed project would cause almost no impact to the views from the south (at Griffith Street and Jamestown Avenue) and would be compatible with the existing built environment. Views of Yosemite Slough and Candlestick Point State Recreation Area would not be substantially affected.

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

No designated state scenic highways are located within the project vicinity,[16] nor is the project site located near any scenic roadways or corridors identified in the general plan.[17] Furthermore, the proposed project would not result in any impacts related to scenic highways. No rock outcroppings or other natural unique scenic resources or features are located within the project site. Furthermore, no historic buildings exist on the project site. As a result, there would be ***no impact***.

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

The proposed project would not conflict with applicable zoning and other regulations governing scenic quality. Planning Code section 210.3, which governs the PDR-2 Use District, does not mention preserving scenic quality within the PDR-2 Use District. While the 110-foot training tower structure, 60-foot condominium/apartment live-fire prop, 50-foot administration building, and 50-foot apparatus building would conflict with the 40-X Height and Bulk District, as part of future project approvals a zoning text and map amendment would be undertaken to apply a Special Use District on the project site. This Special Use District would accommodate these buildings' heights. In addition, the proposed project would avoid an overwhelming or dominating appearance at the street level by placing the tallest structure—the training tower—near the center of the property. The training tower structure would be the only structure taller than 60 feet. The remainder of the project site buildings and structures would be 60 feet or less, which would relate to the prevailing scale of built structures in the surrounding area. This arrangement of buildings would step down from the tallest structure at the interior of the site to shorter structures and parking lots at the site's edges, which would promote the harmony of visual relationship and transition to building heights in the surrounding neighborhood. Therefore, the impacts would be ***less than significant***.

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

The proposed project would not create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area.

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16 https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aacaa

17 The two scenic roadways identified in the transportation section of the San Francisco General Plan include Doyle Drive and O'Shaughnessy Boulevard.

Construction activities would occur primarily during daylight and business hours. If evening construction work is necessary, lighting at the project site would be temporary and confined to a small area within the project footprint. Construction lighting would also conform to any local requirements and would go through the San Francisco Department of Building Inspection for any relevant construction permits.

Beyond minor glare from use of limited construction equipment—which would be similar to the existing glare from vehicles on local roads—there would be no new sources of glare associated with project construction.

Lighting on the proposed project would be standard, downward-facing lighting, and lighting would be designed to conform with applicable building code requirements. The proposed project would involve construction of new street lighting placed along the new sidewalk following the recommendations of an illumination study. Lighting would be an SFPUC standard pole-mounted street luminaires and would require cast-in-drilled-hole foundations down to a maximum of 12 feet.

Therefore, this impact would be ***less than significant***.

Impact C-AE-1: The proposed project, in combination with cumulative projects, would not have a significant cumulative effect on aesthetics. (Less than Significant)

The cumulative context for aesthetic impacts is typically localized, within the immediate vicinity of the project site, or at the neighborhood level. Cumulative development in the project vicinity (within a 0.25-mile radius of the project site) includes the projects identified in **Table 4**. The cumulative development projects in **Table 4** consist of new residential, mixed-use, recreational commercial, institutional, and production, distribution, and repair projects.

Large portions of the Bayview Hunters Point neighborhood have been planned for redevelopment over the past decade, but cumulative development impacts to aesthetic resources in the project vicinity would not be significant. Most of the areas slated for redevelopment comprise primarily vacant lots. Due to the heavily altered landscape, there are no unobstructed scenic vistas from the project site, and sources of light and glare to the night sky are already present. Alterations of the site from the proposed project would be relatively minor and consistent with the production, distribution, and repair uses in the project site vicinity, as well as plans for mixed-use redevelopment to the east and south, and would be common in the urban environment. Therefore, the proposed project's contribution to cumulative impacts to the aesthetic environment would be less than cumulatively considerable.

3. Population and Housing

Topics:	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact	Not Applicable
Would the project:					
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒	☐
b) Displace substantial numbers of existing people or housing units, necessitating the construction of replacement housing?	☐	☐	☐	☒	☐

Impact PH-1: The proposed project would not directly or indirectly induce substantial population growth in an area. (No Impact)

The proposed project would be considered growth inducing if its implementation would result in substantial unplanned population increases or new development that might not occur if the proposed project were not approved and implemented. The proposed project would involve construction of an administration building, apparatus building, maintenance building, live-fire structures, a training tower structure, various burn rooms, ventilation prop and rescue prop structures, and associated site improvements. The proposed project would not include any residential buildings or units, and therefore it would not directly induce population growth in an area. The proposed project is a relocation of current fire-training facilities on Treasure Island and in the Mission District. This relocation of existing uses would not attract additional employees to the City and County of San Francisco; therefore, it would not indirectly induce substantial population growth.

The proposed project would involve construction of a new street segment of Hawes Street north of Carroll Avenue, including street grading and travel lanes, as well as a sidewalk on the east side of the street. However, Hawes Street would not connect to Armstrong Avenue, and the construction of Hawes Street would not otherwise provide new travel pathways or connections outside of the project site vicinity. Access to the block west of Hawes Street would continue to be via Carroll Avenue, Armstrong Avenue, and Ingalls Street. The proposed project would not include any other extension of roads or other infrastructure that would have an indirect impact that would substantially induce population growth in the area.

In summary, the proposed project would not directly or indirectly induce substantial population growth in the area. ***No impact*** would occur, and no mitigation would be required.

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

The project site does not contain any residential uses, and the proposed project would not displace any residents or housing units. Therefore, the proposed project would not displace housing units or people and

would not necessitate the construction of replacement housing. ***No impact*** would occur, and no mitigation would be required.

Impact C-PH-1: The proposed project, in combination with cumulative projects, would not induce substantial population growth or displace substantial numbers of people or housing units. (Less than Significant)

The cumulative context for the topic of population and housing comprises the city and county of San Francisco. While cumulative projects in the project site vicinity would construct new housing units and commercial space, which would induce population and employment growth, the proposed project would not contribute to that growth. The proposed project would not construct new housing units or commercial space. It would relocate existing uses within the city and county of San Francisco, which would increase employment within the project site vicinity, but it would not result in increased population or employment citywide. Therefore, the proposed project, in combination with cumulative projects, would not induce substantial unplanned population growth. The proposed project would not displace housing units and would not contribute to cumulative impacts associated with the displacement of a substantial number of people or housing units. As such, the proposed project impacts, in combination with cumulative projects, would be ***less than significant*** related to population and housing.

4. Cultural Resources

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

Impact CR-1: The proposed project would not cause a substantial adverse change in the significance of an on-site or adjacent historical resource as defined in CEQA Guidelines section 15064.5, including those resources listed in article 10 or 11 of the San Francisco Planning Code. (No Impact)

Historical resources are those properties that meet the definitions in section 21084.1 of the CEQA statute and section 15064.5 of the CEQA Guidelines. Historical resources include properties listed in, or formally determined eligible for listing in, the California Register of Historical Resources (California Register) or in an adopted local register of historical resources. Historical resources also include resources identified as significant in a historical resource survey meeting certain criteria. Additionally, properties that are not listed but are otherwise determined to be historically significant, based on substantial evidence, would also be

considered historical resources. According to section 15064.5(b)(2)(C) of the CEQA Guidelines, the significance of a historical resource is materially impaired when a project "demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance."

In evaluating whether the proposed project would cause a substantial adverse change in the significance of a historical resource, the planning department must first determine whether any existing buildings or known archeological sites on the project site represent historical resources. As defined under Public Resources Code section 5024.1, a property may be considered a historical resource if it meets any of the California Register criteria related to (1) events, (2) persons, (3) architecture, or (4) information potential that make it eligible for listing in the California Register, or if it is considered a contributor to a potential historic district.

There are no existing buildings or structures on the project site. The project site and surrounding area were evaluated in the Bayview Hunters Point Area B Survey: Historic Context Statement.[18] No properties adjacent to the project site were identified for eligibility for the National Register of Historic Places or the California register. No adjacent properties were identified as potential city landmarks, or as potential historic districts. An archival and records search of the California Historical Resources Information System revealed no known archaeological resources within the project site or a surrounding 0.1-mile radius. Thus, no known historical resources are present within the project site, and the property itself is not eligible for listing in the California Register either individually or as a contributor to a potential historic district. There appears to be no direct association for this property tied to the African American Arts & Cultural District nor was it identified as a potentially significant site in the African American Historic Context Statement. There are no buildings or structures on the site that would warrant additional review under the California Register criterion.[19] Planning department staff determined that the property at 1236 Carroll Avenue is not a historical resource as defined by CEQA. Therefore, the proposed project would have ***no impact*** on historic resources, and no mitigation would be required.

Impact CR-2: The proposed project could cause a substantial adverse change in the significance of an archeological resource. (Less than Significant with Mitigation)

This section discusses archeological resources, both as historical resources, according to CEQA Guidelines section 15064.5, as well as unique archeological resources, as defined in section 21083.2(g). Determining the potential for encountering archeological resources is based on factors such as the pre-development environmental setting, history of past development, location, depth, and amount of excavation proposed as well as any recorded information on known resources in the area.

The proposed project would require ground disturbance of 15,000 to 17,000 cubic yards soil over a 300,000-square-foot area to a depth of 20 feet. Ground improvement could include vibro-compaction, vibro-replacement (stone columns), deep dynamic compaction, earthquake drains, or deep soil mixing. In addition, multiple options are being explored for the building and structural foundations. These options include both shallow and deep foundation options. The deepest potential ground disturbance would occur with vibratory and impact pile installation, under which piles would be installed to a maximum depth of 100 feet. Shallow foundations, where used, would comprise mat or spread footings. Additional project soil

[18] Kelley & VerPlanck, *Bayview Hunters Point Area B Survey*, prepared for the San Francisco Redevelopment Agency, February 11, 2010, https://bvoh.org/wp-content/uploads/2017/07/BVHP_Historical-Context.pdf, accessed August 1, 2021.

[19] Cisneros, Stephanie, Senior Preservation Planner. E-mail communication to Jeanie Poling: 1236 Carroll – SFFD Fire Training Facility. July 8, 2021.

disturbance to a depth of 12 feet would be required for underground utilities (i.e., water, sewer, fuel and electric lines).

The planning department conducted a preliminary archeological review of the project site to determine the potential for the proposed project to affect archeological resources.[20] Although the archeological review indicates that there are no known CEQA-related significant archeological resources recorded within the project site, the review determined that there is potential for encountering prehistoric archeological resources and historical archeological resources including maritime resources. Archival and geotechnical research indicates that the majority of the project site was historically within the water of San Francisco Bay. Only the southwestern portion of the site was historically on the landside of the shoreline. On the historically bay side of the site, deep foundations and soils improvements would likely extend through the fill, Young Bay Mud, alluvial soil, and Old Bay Mud, and shallower ground-disturbing activities would be isolated to the fill.

Fill on the bay side of the site is sensitive for redeposited prehistoric deposits as well as historic era fill materials that are unique or rare. Historic era maritime resources may be present in the fill and the Young Bay Mud. The alluvial layer is sensitive for deeply buried prehistoric resources that would have been created in the last 2,000 years before the waters of the bay rose and submerged them. The project's proposed deep foundations and soils improvements would likely extend through the fill and residual soil and into the bedrock on the historically land portion of the site, while shallow ground disturbance would be likely be isolated to the fill and residual soil. The fill on the land side of the site is sensitive for redeposited prehistoric deposits as well as deposits associated with 19th century and early 20th century development.

Based on the results of the department's preliminary archeological review, the proposed project could disturb significant historical and prehistoric archeological resources given ground disturbance to a maximum depth of 100 feet. Such an impact would be considered significant. To reduce impacts on significant archeological resources, **Mitigation Measure M-CR-2, Archeological Testing Program**, has been identified. This mitigation measure would require the project sponsor to retain the services of an archaeologist from the planning department's qualified archeological consultants list to develop and implement an archeological testing plan. The project sponsor has agreed to implement Mitigation Measure M-CR-2. Under this measure, an archeological consultant would implement a project-specific archeological testing plan to determine, to the extent possible, the presence or absence of archeological resources and to identify and assess whether any archeological resource encountered has the potential to be a historical resource under CEQA. In the event that significant archeological resources are discovered, preservation-in-place of the resource or implementation of a data recovery and/or a public interpretation program is required. Therefore, the significant information that the archeological resource(s) provides would either be preserved or documented.

> **Mitigation Measure M-CR-2: Archeological Testing Program**
>
> Based on a reasonable potential that archeological resources may be present within the project site, the following measures shall be undertaken to avoid any potentially significant adverse effects from the proposed project on buried or submerged historical resources. The project sponsor shall retain the services of an archeological consultant from the rotational qualified archeological consultants list (QACL) maintained by the planning department. After the first project approval action or as directed by the Environmental Review Officer (ERO), the project sponsor shall contact the

[20] San Francisco Planning Department, *Environmental Planning Preliminary Archaeological Review for 1236 Carroll Avenue,* July 14, 2021. Revised October 18, 2021.

department archeologist to obtain the names and contact information for the next three archeological consultants on the QACL.

The archeological consultant shall undertake an archeological testing program as specified herein. In addition, the consultant shall be available to conduct an archeological monitoring and/or data recovery program if required pursuant to this measure. The archeological consultant's work shall be conducted in accordance with this measure at the direction of the Environmental Review Officer (ERO). All plans and reports prepared by the consultant as specified herein shall be submitted first and directly to the ERO for review and comment and shall be considered draft reports subject to revision until final approval by the ERO. Archeological monitoring and/or data recovery programs required by this measure could suspend construction of the proposed project for up to a maximum of four weeks. At the direction of the ERO, the suspension of construction can be extended beyond four weeks only if such a suspension is the only feasible means to reduce to a less than significant level potential effects on a significant archeological resource as defined in CEQA Guidelines Sect. 15064.5 (a)(c).

Archeological Testing Program. The purpose of the archeological testing program will be to determine to the extent possible the presence or absence of archeological resources and to identify and to evaluate whether any archeological resource encountered on the site constitutes a historical resource under CEQA.

The archeological testing program shall be conducted in accordance with the approved Archeological Testing Plan (ATP). The archeological consultant and the ERO shall consult on the scope of the ATP, which shall be approved by the ERO prior to any project-related soil-disturbing activities commencing. The ATP shall be submitted first and directly to the ERO for review and comment and shall be considered a draft subject to revision until final approval by the ERO. The archeologist shall implement the testing as specified in the approved ATP prior to and/or during construction.

The ATP shall identify the property types of the expected archeological resource(s) that potentially could be adversely affected by the proposed project, lay out what scientific/historical research questions are applicable to the expected resource, what data classes the resource is expected to possess, and how the expected data classes would address the applicable research questions. The ATP shall also identify the testing method to be used, the depth or horizonal extent of testing, and the locations recommended for testing and shall identify archeological monitoring requirements for construction soil disturbance as warranted.

A local Native American representative shall be present throughout the portion of the archeological investigation program that focuses on testing for prehistoric resources, which includes inspection of geoarcheological cores. The local Native American representative at their discretion shall provide a training on Native American cultural sensitivity to all project contractors.

Paleoenvironmental analysis of paleosols. When a submerged paleosol is identified during the testing program, irrespective of whether cultural material is present, samples shall be extracted and processed for dating, flotation for paleobotanical analysis, and other applicable special analyses pertinent to identification of possible cultural soils and for environmental reconstruction.

Discovery Treatment Determination. At the completion of the archeological testing program, the archeological consultant shall submit a written summary of the findings to the ERO. The findings memo shall describe and identify each resource and provide an initial assessment of the integrity and significance of encountered archeological deposits.

If the ERO in consultation with the archeological consultant determines that a significant archeological resource is present and that the resource could be adversely affected by the proposed project, the ERO, in consultation with the project sponsor, shall determine whether preservation of the resource in place is feasible. If so, the proposed project shall be re-designed so as to avoid any adverse effect on the significant archeological resource and the archeological consultant shall prepare an archeological resource preservation plan (ARPP), which shall be implemented by the project sponsor during construction. The consultant shall submit a draft ARPP to the planning department for review and approval.

If preservation in place is not feasible, a data recovery program shall be implemented, unless the ERO determines that the archeological resource is of greater interpretive than research significance and that interpretive use of the resource is feasible. The ERO in consultation with the archeological consultant shall also determine if additional treatment is warranted, which may include additional testing and/or construction monitoring.

Consultation with Descendant Communities. On discovery of an archeological site associated with descendant Native Americans, the Overseas Chinese, or other potentially interested descendant group an appropriate representative of the descendant group shall be contacted. The representative of the descendant group shall be given the opportunity to monitor archeological field investigations of the site and to offer recommendations to the ERO regarding appropriate archeological treatment of the site, of recovered data from the site, and, if applicable, any interpretative treatment of the associated archeological site. The representative shall be appropriately compensated by the project sponsor. A copy of the Archeological Resources Report (ARR) shall be provided to the representative of the descendant group.

Archeological Data Recovery Program. An archeological data recovery program shall be conducted in accordance with an Archeological Data Recovery Plan (ADRP) if all three of the following apply: 1) a resource has potential to be significant, 2) preservation in place is not feasible, and 3) the ERO determines that an archeological data recovery program is warranted. The archeological consultant, project sponsor, and ERO shall meet and consult on the scope of the ADRP prior to preparation of a draft ADRP. The archeological consultant shall submit a draft ADRP to the ERO. The ADRP shall identify how the proposed data recovery program will preserve the significant information the archeological resource is expected to contain. That is, the ADRP will identify what scientific/historical research questions are applicable to the expected resource, what data classes the resource is expected to possess, and how the expected data classes would address the applicable research questions. Data recovery, in general, should be limited to the portions of the historical property that could be adversely affected by the proposed project. Destructive data recovery methods shall not be applied to portions of the archeological resources if nondestructive methods are practical.

The scope of the ADRP shall include the following elements:

- *Field Methods and Procedures.* Descriptions of proposed field strategies, procedures, and operations.
- *Cataloguing and Laboratory Analysis.* Description of selected cataloguing system and artifact analysis procedures.
- *Discard and Deaccession Policy*. Description of and rationale for field and post-field discard and deaccession policies.
- *Security Measures.* Recommended security measures to protect the archeological resource from vandalism, looting, and non-intentionally damaging activities.
- *Final Report.* Description of proposed report format and distribution of results.
- *Curation.* Description of the procedures and recommendations for the curation of any recovered data having potential research value, identification of appropriate curation facilities, and a summary of the accession policies of the curation facilities.

Human Remains and Funerary Objects. The treatment of human remains and funerary objects discovered during any soil-disturbing activity shall comply with applicable State and federal laws. This shall include immediate notification of the Medical Examiner of the City and County of San Francisco. The ERO also shall be notified immediately upon the discovery of human remains. In the event of the Medical Examiner's determination that the human remains are Native American remains, the Medical Examiner shall notify the California State Native American Heritage Commission, which will appoint a Most Likely Descendant (MLD). The MLD will complete his or her inspection of the remains and make recommendations or preferences for treatment within 48 hours of being granted access to the site (Public Resources Code section 5097.98(a)).

The project sponsor and ERO shall make all reasonable efforts to develop a Burial Agreement ("Agreement") with the MLD, as expeditiously as possible, for the treatment and disposition, with appropriate dignity, of human remains and associated or unassociated funerary objects (as detailed in CEQA Guidelines section 15064.5(d)). The Agreement shall take into consideration the appropriate excavation, removal, recordation, scientific analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects. If the MLD agrees to scientific analyses of the remains and/or associated or unassociated funerary objects, the archeological consultant shall retain possession of the remains and associated or unassociated funerary objects until completion of any such analyses, after which the remains and associated or unassociated funerary objects shall be reinterred or curated as specified in the Agreement.

If human remains cannot be permanently preserved in place, the landowner shall consult with the project archeologist, project sponsor, ERO, and the MLD on feasible recovery and treatment alternatives. The landowner shall then make all reasonable efforts to develop a Burial Agreement ("Agreement") with the MLD, as expeditiously as possible, for the treatment and disposition, with appropriate dignity, of human remains and associated or unassociated funerary objects (as detailed in CEQA Guidelines section 15064.5(d)). Per PRC 5097.98 (c)(1), the Agreement shall address, as applicable and to the degree consistent with the wishes of the MLD, the appropriate excavation, removal, recordation, scientific analysis, custodianship prior to reinternment or curation, and final disposition of the human remains and associated or unassociated funerary objects.

Both parties are expected to make a concerted and good faith effort to arrive at an Agreement, consistent with the provisions of PRC 5097.98. However, if the landowner and the MLD are unable to reach an Agreement, the landowner, ERO, and project sponsor shall ensure that the remains and/or mortuary materials are stored securely and respectfully until they can be reinterred on the property, with appropriate dignity, in a location not subject to further or future subsurface disturbance, consistent with state law.

Treatment of historic-period human remains and of associated or unassociated funerary objects discovered during any soil-disturbing activity, additionally, shall follow protocols laid out in the project's Archeological treatment documents, and in any related agreement established between the project sponsor, Medical Examiner and the ERO.

Archeological Public Interpretation Plan. The project archeological consultant shall submit an Archeological Public Interpretation Plan (APIP) if a significant archeological resource is discovered during a project. If the resource to be interpreted is a tribal cultural resource, the APIP shall be prepared in consultation with and developed with the participation of local Native American representatives. The APIP shall describe the interpretive product(s), locations or distribution of interpretive materials or displays, the proposed content and materials, the producers or artists of the displays or installation, and a long-term maintenance program. The APIP shall be sent to the ERO for review and approval. The APIP shall be implemented prior to occupancy of the proposed project.

Archeological Resources Report. Whether or not significant archeological resources are encountered, the archeological consultant shall submit a written report of the findings of the testing program to the ERO. The archeological consultant shall submit a draft ARR to the ERO that evaluates the historical significance of any discovered archeological resource and describes the archeological, historical research methods employed in the archeological testing/monitoring/data recovery program(s) undertaken, and if applicable, discusses curation arrangements. Formal site recordation forms (CA DPR 523 series) shall be attached to the ARR as an appendix.

Once approved by the ERO, copies of the ARR shall be distributed as follows: California Archeological Site Survey Northwest Information Center (NWIC) shall receive one (1) copy and the ERO shall receive a copy of the transmittal of the ARR to the NWIC. The environmental planning division of the planning department shall receive one (1) bound hard copy of the ARR. Digital files that shall be submitted to the environmental division include an unlocked, searchable PDF version of the ARR, GIS shapefiles of the site and feature locations, any formal site recordation forms (CA DPR 523 series), and/or documentation for nomination to the National Register of Historic Places/California Register of Historical Resources. The PDF ARR, GIS files, recordation forms, and/or nomination documentation should be submitted via USB or other stable storage device. If a descendant group was consulted during archeological treatment, a PDF of the ARR shall be provided to the representative of the descendant group.

Curation. Significant archeological collections and paleoenvironmental samples of future research value shall be permanently curated at an established curatorial facility. The facility shall be selected in consultation with the ERO. Upon submittal of the collection for curation the sponsor or archeologist shall provide a copy of the signed curatorial agreement to the ERO.

With implementation of **Mitigation Measure M-CR-1**, the impact on prehistoric or historic archeological resources from project construction would be ***less than significant with mitigation***.

Impact CR-3: The project could disturb human remains, including those interred outside of formal cemeteries. (Less than Significant with Mitigation)

There are no known human remains, including those interred outside of formal cemeteries, located in the immediate vicinity of the project site. However, human remains may be present in archeological deposits and may potentially be found in isolation. If human remains are encountered during construction, any inadvertent damage to human remains would be considered a significant impact.

To reduce this impact to a less-than-significant level, Mitigation Measure M-CR-1, Archeological Testing, has been identified and agreed to by the project sponsor. Mitigation Measure M-CR-1 includes the required procedures to address, protect, and treat human remains should any be discovered during construction. With implementation of Mitigation Measure M-CR-1, the proposed project's impact on human remains would be ***less than significant with mitigation***.

Impact C-CR-1: The proposed project, in combination with cumulative projects, would not result in cumulative impacts on cultural resources. (Less than Significant)

As discussed above, the building complex on the project site does not retain sufficient integrity to be eligible for listing in the California register, and therefore is not historically significant. Thus, redevelopment of the project site would not result in the direct loss or change to a historic structure. The project site is not within a historic district, and there appears to be no direct association for this property tied to the African American Arts & Cultural District. Similarly, cumulative projects located nearby, listed in **Table 4** and shown in **Figure 9**, are also not located within a historic district. Therefore, the proposed project would not combine with cumulative projects to result in significant impacts to historic architectural resources or adjacent historic districts, and this impact would be less than significant, and no mitigation would be required.

Proposed project-related impacts on archeological resources and human remains are site specific and generally limited to a project's construction area. There are no known archeological resources on the project site or known adjacent resources that may extend onto the project site. As shown in **Figure 9**, the closest cumulative projects are the Candlestick Point–Hunters Point Shipyard (CPHPS) Phase II project and the 1313 Armstrong Avenue project, located within the blocks immediately south and west of the project site. These projects are not anticipated to impact similar archeological resources in the project vicinity. For these reasons, the proposed project, in combination with other cumulative projects and other reasonably foreseeable future projects, would not result in a cumulatively considerable impact on archeological resources or human remains. Therefore, cumulative impacts to archeological resources and human remains would be ***less than significant.***

5. Tribal Cultural Resources

Topics:	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact	Not Applicable
Would the proposed project:					
a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, or cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:					
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☒	☐	☐	☐
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code section 5024.1, the lead agency would consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐	☐

Impact TCR-1: The proposed project could cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code section 21074. (Less than Significant with Mitigation)

CEQA section 21074(a).2 requires the CEQA lead agency to consider the effects of a project on tribal cultural resources. As defined in section 21074, tribal cultural resources are sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are also either included or determined to be eligible for inclusion in the California register or included in a local register of historical resources as defined in CEQA section 5020.1(k).

Pursuant to CEQA section 21080.3.1(d), on August 5, 2021, the planning department contacted Native American individuals and organizations for the San Francisco area, providing a description of the proposed project and requesting comments on the identification, presence, and significance of tribal cultural resources in the project vicinity. During the 30-day comment period, one Native American tribal representative contacted the planning department to request consultation.

Based on tribal consultation undertaken by the City and County of San Francisco in 2015 with Native American tribal representatives, in San Francisco, prehistoric archeological resources are presumed to be potential tribal cultural resources. Impact CR-2 determines that the proposed project's ground disturbance could result in a significant impact to prehistoric archeological resources, should any be encountered.

Therefore, the proposed project also has the potential to encounter tribal cultural resources during soil-disturbing activities. Any inadvertent damage to tribal cultural resources would be considered a significant impact. **Mitigation Measure M-TCR-1, Tribal Cultural Resources Archeological Resource Program** has been identified to reduce impacts to tribal cultural resources encountered during construction activities to a less-than-significant level. The project sponsor has agreed to implement Mitigation Measure M-TCR-1.

Mitigation Measure M-TCR-1 would require either preservation-in-place of the tribal cultural resources if determined effective and feasible, or the project sponsor would coordinate with the affiliated Native American tribal representatives to prepare and implement an interpretive program regarding the tribal cultural resource.

> **Mitigation Measure M-TCR-1: Tribal Cultural Resources Archeological Resource Program**
>
> ***Preservation in Place.*** In the event of the discovery of an archeological resource of Native American origin, the Environmental Review Officer (ERO), the project sponsor, and the local Native American representative, shall consult to determine whether preservation in place would be feasible and effective. If it is determined that preservation-in-place of the tribal cultural resource would be both feasible and effective, then the archeological consultant shall prepare an archeological resource preservation plan (ARPP) in consultation with the local Native American representative, which shall be implemented by the project sponsor during construction. The consultant shall submit a draft ARPP to Planning for review and approval.
>
> ***Interpretive Program.*** If the ERO, in consultation with the local Native American representatives and the project sponsor, determines that preservation-in-place of the tribal cultural resources is not a sufficient or feasible option, then archeological data recovery shall be implemented as required by the ERO and in consultation with affiliated Native American tribal representatives.
>
> If a tribal cultural resource is discovered, the project sponsor, in consultation and with the participation of local Native American representatives, shall prepare a Tribal Cultural Resources Interpretation Plan (TCRIP) to guide the interpretive program. The TCRIP may be prepared in tandem with the APIP as outlined M-CR-1 above. The TCRIP shall be submitted to ERO for review and approval prior to implementation of the program. The plan shall identify, as appropriate, proposed locations for installations or displays, the proposed content and materials of those displays or installation, the producers or artists of the displays or installation, and a long-term maintenance program. The interpretive program may include artist installations, preferably by local Native American artists, oral histories with local Native Americans, cultural displays, educational panels, or other interpretive elements agreed upon by participants displays. Upon approval of the TCRIP and prior to project occupancy, the interpretive program shall be implemented by the project sponsor. Local Native American representatives who are substantially involved in preparation or implementation of the interpretive program shall be appropriately compensated by the project sponsor.

With implementation of Mitigation Measure M-TCR-1, impacts to tribal cultural resources would be reduced to ***less than significant with mitigation***.

In consultation with tribal cultural representatives, **Improvement Measure I-TCR-1, Local Native American Land Acknowledgment Program**, has been developed to recognize the importance of the project site to local tribes. The project sponsor has agreed to implement I-TCR-1.

Improvement Measure I-TCR-1: Local Native American Acknowledgment Program

Land Acknowledgment Installation. The project sponsor should, in consultation with local Native American representatives, design and install a plaque or other land acknowledgement on the project site that acknowledges that the proposed project is built on traditional Ohlone land. The display should be installed in a visible and, as feasible, publicly accessible area of the project site. Coordination for land acknowledgement should take place with local Native American representatives, including the Association of Ramaytush Ohlone and other interested Ohlone parties. The land acknowledgement may include artist installations, preferably by local Native American artists, planting of native plants, plaque with land acknowledgment text, or other physical or digital displays agreed upon by participants. The sponsor should submit a plan to the ERO for approval that provides information on the proposed land acknowledgement content, materials, location, and a long-term maintenance program. Upon approval by the ERO and prior to project occupancy, the land acknowledgment shall be implemented by the project sponsor. Local Native American representatives who are substantially involved in preparation or implementation of the land acknowledgment should be appropriately compensated by the project sponsor.

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

Proposed project-related impacts on tribal cultural resources are site specific and generally limited to a project's construction area. As discussed above in Impact C-CR-1, impacts of the proposed project would be unlikely to combine with impacts of cumulative projects to result in cumulative impacts to prehistoric archeological resources, which are also tribal cultural resources. For these reasons, the proposed project in combination with other reasonably foreseeable future projects, would not have a significant cumulative impact on tribal cultural resources. Therefore, this impact would be less than significant, and no mitigation measures would be required.

6. Transportation and Circulation

Topics:	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact	Not Applicable
Would the project:					
a) Involve construction that would require a substantially extended duration or intensive activity, the effects of which would create potentially hazardous conditions for people walking, bicycling, or driving, or public transit operations; or interfere with emergency access or accessibility for people walking or bicycling; or substantially delay public transit?	☐	☐	☒	☐	☐
b) Create potentially hazardous conditions for people walking, bicycling, or driving or public transit operations?	☐	☐	☒	☐	☐
c) Interfere with accessibility of people walking or bicycling to and from the project site, and adjoining areas, or result in inadequate emergency access?	☐	☐	☒	☐	☐

Topics:	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact	Not Applicable
d) Substantially delay public transit?	☐	☐	☒	☐	☐
e) Cause substantial additional vehicle miles traveled or substantially induce additional automobile travel by increasing physical roadway capacity in congested areas (i.e., by adding new mixed-flow travel lanes) or by adding new roadways to the network?	☐	☐	☒	☐	☐
f) Result in a loading deficit, the secondary effects of which would create potentially hazardous conditions for people walking, bicycling, or driving; or substantially delay public transit?	☐	☐	☒	☐	☐
g) Result in a substantial vehicular parking deficit, the secondary effects of which w00ould create potentially hazardous conditions for people walking, bicycling, or driving; or interfere with accessibility for people walking or bicycling or inadequate access for emergency vehicles; or substantially delay public transit?	☐	☐	☒	☐	☐

This transportation analysis was prepared in accordance with the 2019 Transportation Impact Analysis Guidelines for Environmental Review (SF transportation guidelines) and examines the transportation-related impacts of the proposed project's operational impacts regarding potentially hazardous conditions, accessibility, public transit delay, vehicle-miles traveled (VMT), loading, and parking. The proposed project's transportation-related construction impacts were scoped out of a detailed analysis as described below. The travel demand memorandum prepared for the proposed project provides supporting information.[21]

The planning department's SF transportation guidelines[22] set forth screening criteria for types of construction activities that typically would not result in significant construction-related transportation effects based on project site context and construction duration and magnitude. The proposed project's construction would meet the SF transportation guidelines' construction screening criteria based on an assessment of the temporary construction activities' duration of about 30 months, the level of intensity of activities, the volume of excavated materials that would be removed from the site (i.e., less than 20,000 cubic yards), as well as the location of the project site. The project site includes the easternmost parcels between Armstrong and Carroll avenues that are paved and have no structures. Armstrong Avenue terminates in a dead end at the project site while Carroll Avenue has low numbers of vehicles and people walking and bicycling, and no public transit service. This indicates that construction of the proposed project would not create potentially hazardous conditions for people walking, bicycling, or driving, or public transit operations; or interfere with emergency access or accessibility for people walking or bicycling; or substantially delay public transit. For these reasons, it was determined that the proposed project would result in less-than-significant construction-related transportation impacts under existing plus project conditions, and no further

[21] LCW Consulting, Technical Memorandum – 1236 Carroll Avenue Project CEQA Analysis – Project Travel Demand, August 31, 2021.

[22] The guidelines were updated in 2019. The updated guidelines include revised guidance on travel demand and updated trip generation rates. http://default.sfplanning.org/publications_reports/TIA_Guidelines.pdf.

analysis of project-level construction impacts is provided. An analysis of cumulative construction impacts is provided below.

PROJECT TRAVEL DEMAND

Project travel demand refers to the new vehicle, transit, walking, and bicycling trips that would be generated by the proposed project uses. Travel demand for the proposed project was estimated for weekday daily and p.m. peak-hour conditions for the proposed training facility. As described in the Project Description, training programs are projected to occur at the site throughout the year, primarily on weekdays. **Table 2** in the Project Description includes the types of programs, the number of participants, the weekly schedule, and daily operating hours. In addition to the training programs, the proposed project would be used occasionally on weekday nights and on weekends for community group meetings (approximately 60 events per year with about 30 on weekday nights). Consistent with the SF transportation guidelines, an assessment was conducted to determine whether the proposed project would cause substantial additional miles traveled.

Because the proposed project would consolidate training activities that occur at fire department facilities on Treasure Island (649 Avenue N) and at 2310 Folsom Street (at 19th Street), the VMT analysis assessed whether the proposed project would increase daily VMT and VMT per capita compared to existing conditions. Therefore, as part of the analysis, the total daily VMT and VMT per capita was calculated for the proposed project and for the two existing training facilities (see travel demand memorandum).

Estimated weekday daily and p.m. peak-hour trip generation was performed pursuant to methodologies outlined in the SF transportation guidelines, using information contained within the SF transportation guidelines for travel characteristics in the area from the project sponsor related to the proposed facility's operating characteristics. The detailed methodology and results for the travel demand are included in the travel demand memorandum.

Training at the site would include use of live-fire props for academy and in-service training, which would take place up to 75 times a year. On days that this training occurs, an additional 10 fire engines, fire trucks, rescue squad vehicles, and wildland pickup trucks would travel to and from the project site. The travel demand estimate also includes vehicles that would deliver supplies (such as fuel, office supplies, and facility supplies).

Table 6 summarizes the estimated number of daily and p.m. peak-hour person trips by way of travel, as well as the number of vehicle trips. The proposed project is expected to generate approximately 334 daily person trips, of which 84 would occur during the p.m. peak hour. During the p.m. peak hour, the proposed project is expected to generate 82 vehicle trips, including trips made by private autos, taxi and transportation network companies (TNC) vehicles (e.g., Uber and Lyft), delivery and service vehicles, and fire department vehicles. During the p.m. peak hour the proposed project would also generate two trips by transit and one trip by bicycling.

The person and vehicle trips were distributed to various points of trip origin or destination, inbound and outbound directions. Specifically, the trip origins and destinations were allocated to the nine San Francisco planning districts and the East Bay, North Bay, and South Bay. **Table 7** presents a summary of the inbound and outbound vehicle trips on a daily basis and during the p.m. peak hour by place of origin and destination. This distribution was used to assign the vehicle trips to the roadway network based on projected paths of travel and the entry and exit driveways. Under existing plus project conditions, the majority of trips would be to destinations within San Francisco, and vehicles would primarily access the site via Carroll Avenue from

Third Street to the west. A figure presenting the daily and p.m. peak-hour vehicle trip assignment to the roadway network is included in the travel demand memorandum.

Table 6. Proposed Project Daily and P.M. Peak-Hour Trip Generation by Way of Travel

ANALYSIS PERIOD	PERSON TRIPS BY WAY OF TRAVEL					VEHICLE TRIPS[1]
	AUTO	TAXI/TNC	TRANSIT	BICYCLE	TOTAL	
Daily						
Training Participants and Staff	313	13	6	2	**334**	301
Fire Department Vehicles	—	—	—	—	**—**	20
Delivery/Service Vehicles	—	—	—	—	**—**	2
Total	**313**	**13**	**6**	**2**	**334**	**323**
P.M. Peak Hour						
Training Participants and Staff	78	3	2	1	**84**	77
Fire Department Vehicles	—	—	—	—	**—**	5
Total	**78**	**3**	**2**	**1**	**84**	**82**

Source: 2019 Transportation Impact Analysis Guidelines for Environmental Review, LCW Consulting, 2021

[1] Transportation network company (TNC) vehicles (e.g., Uber, Lyft) and taxi trips are included in vehicle trips and automobile person trips. Taxi/TNC vehicle trips were doubled to account for separate vehicle trips both to and from the project site.

Table 7. Proposed Project Vehicle Trip Generation By Place of Origin or Destination – Weekday Daily and P.M. Peak Hour

PLACE OF TRIP ORIGIN OR DESTINATION	DAILY			P.M. PEAK HOUR		
	INBOUND	OUTBOUND	TOTAL	INBOUND	OUTBOUND	TOTAL
San Francisco Planning Districts						
Downtown/North Beach	14	12	25	0	9	9
South of Market	0	2	2	0	0	0
Marina/Western Market	10	15	24	0	5	5
Mission/Potrero Hill	23	26	49	0	9	9
Outer Mission/Hills	26	22	47	1	11	12
Bayshore	4	6	10	0	3	3
Richmond	2	0	2	0	1	1
Sunset	25	23	48	1	10	11
Treasure Island	0	0	0	0	0	0
Other Bay Area						
South Bay	40	36	76	1	20	21
East Bay	10	14	24	0	4	4
North Bay	7	8	15	0	5	5
Total	**159**	**163**	**323**	**3**	**79**	**82**

Source: SF Transportation Guidelines, LCW Consulting, 2021

Note: Due to rounding, numbers may not sum to totals

The proposed project would generate about five delivery and service vehicles a week, with about one vehicle per day. This corresponds to a demand for one loading space during the peak hour of loading activities (generally between 10 a.m. and 11 a.m.). The proposed project would generate three trips by taxi/TNC vehicles during the p.m. peak hour, which corresponds to a p.m. peak-hour passenger loading space demand of one space during the peak 15 minutes of the p.m. peak hour.

PROJECT-LEVEL IMPACT ASSESSMENT

Impact TR-1: Operation of the proposed project would not create potentially hazardous conditions for people walking, bicycling, driving or public transit operations. (Less than Significant)

The proposed project would result in the following transportation changes to the public right-of-way, none of which would cause potentially hazardous conditions as described below:

- **Hawes Street**
  - As discussed in the project description, Hawes Street is a "paper street" that is currently unbuilt. The proposed project would entail partial construction of Hawes Street to City standards by grading the roadway between Carroll and Armstrong avenues. The portion of Hawes Street constructed as part of the proposed project would allow for a future connection with Armstrong Avenue when that roadway is raised from the current grade but would not connect with Armstrong Avenue until the roadway grade changes are made. A new sidewalk, curbs, and curb ramps (compliant with the Americans with Disabilities Act) would be installed adjacent to the project site. The portion of Hawes Street constructed by the proposed project would provide for a 26-foot-wide travel way (two 13-foot-wide travel lanes) and an 8-foot-wide sidewalk adjacent to the project site. The 8-foot-wide sidewalk would meet the minimum sidewalk width under the Better Streets Plan.[23],[24] The remaining 18 feet of the Hawes Street right-of-way would be graded and protected by a temporary barrier. The two-way access driveway on Hawes Street would be the primary entrance/exit for the proposed facility. The new intersection of Hawes Street/Carroll Avenue would be stop sign controlled.
- **Carroll Avenue**
  - Two new exit-only driveways would be designed for fire-apparatus and in-service vehicle circulation only. No other changes to the existing Carroll Avenue right-of-way would be made.

The proposed project would include a 12-foot-tall perimeter fence consisting of a combination of masonry wall and steel fence, with manual gates for pedestrians and automated gates for vehicles at driveways on Carroll Avenue and Hawes Street. The three driveways would include visual and/or audible warning devices for people walking as vehicles exit the driveways, and all driveways would be designed to accommodate larger trucks or vehicles with larger turning radii (i.e., the fire apparatus and in-service vehicles).

At the time when the project sponsor seeks planning department approvals for the proposed project, the proposed project would undergo review by City agencies, including a review of street-level operations so that the new intersection of Hawes Street/Carroll Avenue and the vehicle access to the site would be adequately accommodated without obstructing, hindering, or impairing drivers' reasonable and safe views

[23] The Better Streets Plan establishes standards for the design of the pedestrian realm and parking lane within the city and requires projects of a certain scale to bring their fronting sidewalks in conformity with these standards. These changes to the city's public right-of-way typically entail sidewalk widening, bulb-out construction, street trees and understory plantings, and installation of special paving and street furniture. The planning code requires certain new development projects to make changes to the public right-of-way, such that it is consistent with the Better Streets Plan (section 138.1).

[24] Hawes Street is identified as an industrial street in the Better Streets Plan. Streets with this designation have a minimum sidewalk width (i.e., the width of sidewalk between the curb and property line) of 8 feet and a recommended sidewalk width of 10 feet.

of other vehicles, people walking, or people bicycling on the same street and/or restricting the ability of a driver to stop a motor vehicle without danger of an ensuing collision. Design features of the proposed project would need to be consistent with Better Streets Plan standards and Vision Zero[25] policies.

The planning department's Streetscape Design Advisory Team (SDAT) would also review streetscape changes. SDAT includes representatives from public works, the San Francisco Municipal Transportation Agency (SFMTA), the SFPUC, the fire department, and other agencies on an as-needed basis. The purpose of SDAT is to provide a forum for City agencies to coordinate and provide clear and consistent guidance to applicable projects that affect the public right-of-way pursuant to the Better Streets Plan and so that projects are consistent with City code requirements and policy objectives.

In addition to review by SDAT, prior to project consideration at a public hearing, proposed changes to the roadway network, such as streetscape changes to Hawes Street and the new driveways on Carroll Avenue, would be reviewed by the City's Transportation Advisory Staff Committee, an interdepartmental committee chaired by the SFMTA that includes the fire department and other City agencies. This review would further confirm that the proposed project's design features would not cause potentially hazardous conditions for people walking, bicycling, and driving.

Walking and Bicycling. The proposed project would have three points of vehicular ingress/egress at the project site: the two new driveways on Carroll Avenue and the driveway on the new Hawes Street. All of these driveways would have an audible and/or visual warning system for people walking as vehicles exit the project driveways. In general, all training activities would be conducted on site; however, fire department vehicles may occasionally exit the site via the two exit-only driveways on Carroll Avenue, though this would occur infrequently (zero to six times a day).

Existing traffic volumes on Carroll Avenue are low (i.e., fewer than 100 vehicles per hour traveling in both directions during the p.m. peak period) and the proposed project would add few (82) vehicle trips to project vicinity during the p.m. peak hour. The proposed Hawes Street would not include bicycle facilities and there are no bicycle facilities on Carroll Avenue.

The proposed project would include a new sidewalk and curb adjacent to the site on Hawes Street consistent with Better Streets Plan and Complete Streets[26] standards. Therefore, the proposed project would improve safety for people walking adjacent to the project site over existing conditions.

For these reasons, the proposed project would not result in potentially hazardous conditions for people walking or bicycling.

Driving and Public Transit Operations. In general, compared to existing conditions, implementation of the proposed project would not substantially change conditions for people driving or for public transit in the area. The T Third Street light-rail line operates within an exclusive median right-of-way on Third Street, and

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[25] Vision Zero is a policy that assists in focusing traffic safety investments to reduce severe and fatal injuries to people walking, bicycling, and driving on streets where most severe or fatal injuries are concentrated. The City adopted Vision Zero as a policy in 2014, with the goal of zero traffic deaths for all ways people travel. The planned improvements on Williams Avenue to improve pedestrian visibility and comfort at crossing and to reduce vehicle speeds is an example of a city project to address safety issues.

[26] Complete Streets is a transportation and design approach for the entire width of a street right-of-way to prioritize safer slower speeds for all people who use the street, over high speeds for motor vehicles. Complete Streets are designed and operated to prioritize safety, comfort, and access to destinations for all people who use the street, and make the street network better and safer for people walking, bicycling, driving, and riding transit.

there is no transit service on Carroll Avenue adjacent to the site. The 29 Sunset and the 54 Felton bus routes operate three to four blocks to the north and south of the project site and would not be substantially affected by project vehicles traveling to and from the project site primarily via Third Street and Carroll Avenue.

Buildout of Hawes Street would be per City standards, and the driveway designs of Hawes Street and Carroll Avenue would be reviewed to confirm that fire department vehicles can adequately turn into and/or out of the facility. The new intersection of Hawes Street/Carroll Avenue would be designed with Hawes Street stop-sign-controlled with clear sightlines for both vehicles traveling on Carroll Avenue and vehicles exiting from Hawes Street. Because the new Hawes Street would not connect with Armstrong Avenue until future improvements to Armstrong Avenue are made, a "Dead End" warning sign would be posted at the entrance to Hawes Street at Carroll Avenue. The occasional vehicles accessing Hawes Street and not destined to the proposed facility would be able to turn around using the proposed project driveway. The use of the proposed project driveway as a turnround for vehicles not destined to the proposed facility would not create potentially hazardous conditions because this condition would occur rarely, the two-lane configuration of the driveway (two 13-foot-wide travel lanes) would provide room for vehicles to maneuver (two 13-foot-wide travel lanes), and because project generated vehicles turning into and out of the driveway would be traveling slowly, thus, the proposed project would not create potentially hazardous conditions for people driving or transit operations.

Therefore, the proposed project's impacts related to potentially hazardous conditions would be ***less than significant***, and no mitigation would be required.

Impact TR-2: Operation of the proposed project would not interfere with accessibility of people walking or bicycling to and from the project site, and adjoining areas, or result in inadequate emergency access. (Less than Significant)

As discussed above, during the p.m. peak hour the proposed project would generate 82 new vehicle trips (including 72 trips by taxi/TNC vehicles) and would add two transit trips, and one trip by bicycling. It is not anticipated that there would be any walk-only trips to or from the project site during the p.m. peak hour.

The proposed project would not involve substantial changes to the street network that would interfere with walking or bicycling to and from the project site and adjoining areas, or result in inadequate emergency access. The proposed project would build out a portion of Hawes Street between Carroll and Armstrong avenues and provide an 8-foot-wide sidewalk adjacent to the project site (i.e., east side of Hawes Street) that is consistent with Better Streets Plan and Americans with Disabilities Act requirements. The proposed project would provide driveways to the site on Hawes Street (one two-way driveway) and Carroll Avenue (two exit-only driveways). No other changes to the street network would be made.

Walking and Bicycling. Few people walk and bicycle near the project site,[27] and this condition is not anticipated to change with the proposed project. Carroll Avenue is a class III bike facility, and bicyclists share the travel lanes with vehicles.

The proposed project would entail construction of sidewalks adjacent to the project site on Hawes Street, and the primary pedestrian access to the site would be via the new Hawes Street. The proposed project

[27] Counts of people walking and bicycling were conducted at the intersection of Ingalls Street/Carroll Avenue on July 22, 2021. During the weekday p.m. peak hour there were eight bicyclists traveling through the intersection north/south on Ingalls Street and east/west to the west Ingalls Street. In addition, there were a total of seven pedestrian crossings at the intersection.

would include bicycle parking per planning code requirements and would not generate activities that would interfere with access or circulation for people walking or bicycling on Carroll Avenue. As noted in Impact TR-1, all training activities would occur within the project site, and there would be minimal vehicle exits via the two exit-only driveways on Carroll Avenue.

For the reasons above, the proposed project would not interfere with the accessibility of people walking or bicycling.

Emergency Access. Current emergency vehicle access to the project site is via Carroll Avenue. The proposed project would not introduce any design features or street network changes that would change emergency vehicle travel in the project vicinity, compared to existing conditions. The proposed project would entail construction of two exit-only driveways on Carroll Avenue, which would not impede emergency vehicle travel on Carroll Avenue. The proposed project would include grading and partial build-out of Hawes Street to provide for a 26-foot-wide travel way (two 13-foot-wide travel lanes). Thus, the width of Hawes Street would meet the Better Streets Plan guidelines of a 20-foot-wide clearance for emergency vehicles for a two-way street.[28] As described above, the design of Hawes Street would be required to undergo detailed design review by multiple City agencies within the City's Transportation Advisory Staff Committee, which includes staff from the fire and police departments. Therefore, the proposed project would not result in inadequate emergency access.

Based on the information above, the proposed project's operations would not interfere with accessibility of people walking or bicycling to and from the project site, and to and from adjoining areas, or result in inadequate emergency access. Project accessibility impacts would therefore be ***less than significant***, and no mitigation would be required.

Impact TR-3: Operation of the proposed project would not substantially delay public transit. (Less than Significant)

There is no public transit service on Carroll Avenue adjacent to the project site. The T Third Street light-rail line operates on Third Street, with a stop at Carroll Avenue. The closest bus routes include the 29 Sunset bus route, which connects the Bayview and Presidio neighborhoods and runs on Fitzgerald and Gilman avenues to the south of the project site, and the 54 Felton route, which connects the Bayview and Lakeshore neighborhoods and runs on Van Dyke Avenue to the north of the project site.

The SF transportation guidelines set forth a screening criterion for projects that would typically not result in significant public transit delay effects. The proposed project would generate 82 new vehicle trips during the p.m. peak hour (three inbound and 79 outbound), which would be less than the screening criterion of 300 peak-hour project vehicle trips identified in the SF transportation guidelines. Thus, the proposed project would not add a substantial number of new peak-hour vehicle trips to roadways with transit service.[29]

Therefore, the proposed project's impact on transit delay would be ***less than significant*** and no mitigation would be required.

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[28] *Better Streets Plan, Policies and Guidelines for the Pedestrian Realm, Final Plan*, December 2010, page 155.

[29] SF Planning Department, *Transportation Impact Analysis Guidelines*. http://default.sfplanning.org/publications_reports/TIA_Guidelines.pdf. Appendix I of the Transportation Impact Analysis Guidelines describes the transit delay screening criteria.

Impact TR-4: Operation of the proposed project would not cause substantial additional VMT. (Less than Significant)

VMT per person (or per capita) is a measurement of the amount and distance that a resident, an employee, or a visitor drives, accounting for the number of passengers within a vehicle. In general, higher VMT areas are associated with more air pollution, including greenhouse gas emissions and energy use, than lower VMT areas. Many interdependent factors affect the amount and distance a person might drive. In particular, the built environment affects how many places a person can access within a given distance, time, and cost, using different ways of travel (e.g., private vehicle, public transit, bicycling, walking, etc.). Typically, low-density development located at great distances from other land uses and in areas with few options for ways of travel provides less access than a location with high density, mix of land uses, and numerous ways of travel. Therefore, low-density development typically generates more VMT compared to a similarly sized development located in urban areas, such as the project site.

Given these travel behavior factors, on average, persons living or working in San Francisco result in lower amounts of VMT per person than persons living or working elsewhere in the nine-county San Francisco Bay Area region. In addition, on average, persons living or working in some areas of San Francisco result in lower amounts of VMT per person than persons living or working elsewhere in San Francisco. The city displays different amounts of VMT per capita geographically through transportation analysis zones.[30]

The planning department uses VMT efficiency metrics (per capita or per employee) for thresholds of significance. VMT per capita reductions mean that individuals will, on average, travel less by automobile than previously but, because the population will continue to grow, it may not mean an overall reduction in the number of miles driven. The planning department uses a map-based screening criterion to identify types and locations of land use projects that would not exceed these quantitative thresholds of significance. The San Francisco County Transportation Authority uses a model to present VMT for residential, office, and retail in San Francisco and the region. The planning department uses that data and associated maps to determine whether a project site's location is below the VMT quantitative threshold of significance.

Vehicle-Miles Traveled. The SF transportation guidelines set forth screening criteria for types of projects that would typically not result in significant VMT impacts. The project site is in a transportation analysis zone (892) where the existing average daily VMT per capita exceeds the planning department's screening criteria of 15 percent below the regional average threshold.[31] Thus, the proposed project would not meet this locational screening criteria;[32] therefore, consistent with the SF transportation guidelines, an assessment was conducted to determine whether the proposed project would cause substantial additional miles traveled.

Because the proposed project would consolidate training activities that currently occur at fire department facilities on Treasure Island (649 Avenue N) and at 2310 Folsom Street (at 19th Street), the VMT analysis consisted of determining whether the proposed project would increase daily VMT and VMT per capita compared to existing conditions. As part of the analysis, the total daily VMT and VMT per capita was

[30] Planners use transportation analysis zones as part of transportation planning models for transportation analyses and other planning purposes. The zones vary in size from single city blocks in the downtown core, multiple blocks in outer neighborhoods, to even larger zones in historically industrial areas such as Hunters Point Shipyard.

[31] The existing average daily VMT per capita for office land use (applicable to the proposed training activities) for transportation analysis zone 892 in which the project site is in is 17.55 VMT per capita. This VMT per capita is above the planning department's screening threshold of 16.2 VMT per capita.

[32] San Francisco Planning Department, *Eligibility Checklist: CEQA Section 21099 – Modernization of Transportation Analysis for 1236 Carroll Avenue – San Francisco Fire Department Fire-Training Facility*, September 27, 2021.

calculated for the proposed project and for the two existing training facilities (see travel demand memorandum). The net change in VMT was calculated by subtracting the VMT results for the project site from the combined total for the two existing locations.[33] **Table 8** presents the results of the VMT calculations.

As presented in **Table 8**, the proposed project would result in 371 fewer VMT per day and 2.2 fewer average daily VMT per capita. Thus, the proposed project would result in less daily VMT and daily VMT per capita than operations at the existing facilities and therefore would not cause substantial additional VMT.

Table 8. Proposed Project Net Change in Daily VMT and VMT per Capita

FACILITY LOCATION	DAILY VEHICLE TRIPS[1, 2, 3]	TOTAL DAILY VMT (MILES)	AVERAGE DAILY VMT PER CAPITA
Proposed Project	**323**	**3,718**	**22.3**
Existing Fire Department Training Facilities			
Treasure Island	161	2,445	29.3
19th/Folsom streets	161	1,645	19.7
Subtotal Existing Facilities	**322**	**4,090**	**24.5**
Net Change in Daily VMT		-371	-2.2

Source: SF Guidelines, LCW Consulting, 2021

Notes:

Some values may not total due to rounding.

1 Assumes the same level of vehicle travel for existing and proposed project operations. Includes 135 training participants and 32 staff.

2 Assumes existing training activity split 50/50 between Treasure Island and 19th/Folsom streets sites.

3 Includes training participants and staff, fire department fire trucks, and delivery/service vehicle trips.

Induced Automobile Travel. The proposed project would include features that would alter the transportation network, including the partial build-out of Hawes Street, which includes a sidewalk adjacent to the project site and a driveway, and two new driveways on Carroll Avenue. These features fit within the general types of projects that would not substantially induce automobile travel.

In addition, the proposed project would be subject to Planning Code section 169, Transportation Demand Management program requirements.[34]

Therefore, for the reasons described above, the proposed project impacts related to VMT and induced automobile travel would be less than significant, and no mitigation would be required.

Impact TR-5: Operation of the proposed project would result in a loading deficit, but the secondary effects of that deficit would not create potentially hazardous conditions for people walking, bicycling, or driving, or substantially delay public transit. (Less than Significant)

Delivery/Service Vehicle Loading. The proposed project would include one loading bay within the project site near the apparatus and maintenance buildings that would be about 500 square feet and would be accessed via Hawes Street. This loading bay would be larger than typical dimensions required by the

33 See LCW Consulting, *Technical Memorandum – 1236 Carroll Avenue Project CEQA Analysis – Project Travel Demand*, August 31, 2021.

34 Planning Code section 169 require certain new development projects to incorporate design features, incentives and tools to reduce VMT. Development projects must choose measures from a menu of options to develop an overall transportation demand management (TDM) plan. Some options overlap with requirements elsewhere in the planning code (e.g., bicycle parking, car-share parking). Each development project's TDM plan requires routine monitoring and reporting to the planning department to demonstrate compliance.

planning code for on-site loading space (i.e., a standard 35-foot-long by 12-foot-wide loading space is 420 square feet) and would accommodate larger vehicles that would serve the site (e.g., deliveries of fuel). The proposed project's peak-hour delivery/service vehicle loading demand of one loading space would be accommodated within the on-site loading bay. Therefore, no freight/service vehicle deficit would occur.

Passenger Loading. The proposed project would not include any on-site or on-street passenger loading spaces (i.e., white zones). During the weekday p.m. peak hour, the proposed project would generate a demand for one passenger loading space at the project site during the peak 15 minutes of demand. This passenger loading demand would be accommodated either within the project site (e.g., in a parking space or near the building entrance) or within the travel lanes on Carroll Avenue or Hawes Street adjacent to the project site. Passenger loading activities on Carroll Avenue or Hawes Street would result in a brief temporary blockage of vehicular traffic on those streets. Stopping within the travel lanes would not substantially affect people bicycling or transit operations, because there would be few passenger loading/unloading events and there is limited existing bicycling activity on Carroll Avenue and no transit service on Carroll Avenue. Hawes Street traffic would be limited to the project operations, and temporary blockage of vehicles accessing or leaving the site would not substantially affect access to and from the facility or lead to substantial vehicle queues. Therefore, even though the proposed project would result in a passenger loading deficit, the secondary effects of that deficit would not result in potentially hazardous conditions for people walking, bicycling, or driving, or substantially delay public transit.

For the above reasons, the proposed project-related impacts related to loading would be ***less than significant***, and no mitigation would be required.

Impact TR-6: Operation of the proposed project would not result in a parking deficit. (Less than Significant)

The SF transportation guidelines[35] include screening criteria for projects to determine if a proposed project would result in a substantial parking deficit that could result in secondary effects. Secondary effects of a parking deficit could create potentially hazardous conditions for people walking, bicycling, or driving; or interfere with accessibility for people walking or bicycling or inadequate access for emergency vehicles; or substantially delay public transit. The project site is in a transportation analysis zone that does not meet the planning department's screening criteria and does not meet California Public Resources Code section 21099 screening criteria; therefore, an assessment was conducted to determine whether the proposed project would create a parking deficit (i.e., deficit of 600 vehicle parking spaces) that could result in secondary effects.

The proposed project would generate a maximum vehicle parking demand of 160 spaces, which consists of the 150 training participants and staff arriving by auto and 10 fire department vehicles that would travel to and from the site each day when all four training programs overlap. The parking demand of 160 spaces would occur for about 20 out of 52 weeks; for the remainder of the year, the vehicle parking demand would be less.

The proposed project would include 115 vehicle parking spaces on site, accommodating visitors, staff, in-service vehicles, fleet vehicles, and specialty vehicles (see **Table 1** in the Project Description). Therefore, the maximum parking demand of 160 spaces would not be accommodated on site, and about 45 drivers would

[35] San Francisco Planning Department, *Transportation Impact Analysis Guidelines.* October 2019. https://sfplanning.org/news/transportation-impact-analysis-guidelines-update. Accessed August 25, 2021.

seek parking on streets nearby the project site. The proposed 115 vehicle parking spaces include 27 spaces that would be designated for the Wildland Deployment unit when the unit is activated.[36] Thus, the number of drivers who would seek on-street parking would increase when the 27 on-site parking spaces for Wildland Deployment unit activities are occupied. When all four training programs are not simultaneously in session, the parking demand would be less and may be accommodated within the proposed number of parking spaces.

Drivers not accommodated within the site would park on the street near the project site where on-street parking is permitted. On-street parking is not permitted on Carroll Avenue adjacent to, and to the west of, the project site but is permitted on nearby cross-streets.

The proposed project's parking deficit would not exceed the planning department's threshold of 600 vehicles. Furthermore, as previously discussed, Carroll Avenue has low numbers of vehicles and people walking and bicycling, and no public transit service. Therefore, the proposed project would not result in a parking deficit and would not result in secondary effects that could create potentially hazardous conditions for people walking, bicycling, or driving; or interfere with accessibility for people walking or bicycling or inadequate access for emergency vehicles; or substantially delay public transit.

Therefore, because the proposed project would not result in a substantial parking deficit, no secondary impact analysis is necessary. Thus, proposed project impacts related to vehicular parking would be ***less than significant***, and no mitigation would be required.

CUMULATIVE IMPACT ASSESSMENT

The cumulative transportation impact assessment includes relevant nearby cumulative development projects. The Project Description lists and shows cumulative development projects that are included in the cumulative analysis in **Table 4** and **Figure 9**.

The largest development project is the CPHPS project, which includes build-out of about 7,200 residential units, 1.4 million square feet of office and retail uses, and two small event venues in Candlestick Point. The CPHPS Phase II project also includes transportation network improvements that would be phased in as development proceeds.

In addition to the cumulative development projects, cumulative projects include the Yosemite Slough Restoration and projects within the Bayview Community-Based Transportation Plan. The Yosemite Slough Restoration project includes construction of the Bay Trail around the slough and connections with the planned Bay Trail segments within Candlestick Point and Hunters Point Shipyard. The Bayview Community-Based Transportation Plan's priority projects include upgrades to crosswalks, corner bulbouts, transit assistants on the T Third Street light-rail line, and improvements on Evans, Williams, and Carroll avenues.

[36] When called for duty, the members of the Wildland Deployment unit would gather at the training facility, load their equipment, and depart for their assignment, which could be anywhere in the state. Because deployment would occur only in the event of a fire emergency (prior deployments have been about six times a season), travel to and from the project site for deployment would not be daily conditions and are therefore not included in the project travel demand or the parking demand of 160 spaces.

Impact C-TR-1: The proposed project, in combination with cumulative projects, would not result in significant cumulative construction-related transportation impacts. (Less than Significant)

In the project vicinity, construction of cumulative projects may overlap with each other and the proposed project. Like the proposed project, sponsors and construction managers of development projects considered in the cumulative analysis would be required to coordinate with various City departments, such as the SFMTA and public works, comply with the SFMTA blue book regulations, and coordinate any temporary sidewalk and travel-lane closures to develop plans that would address construction-related vehicle routing, traffic control, and pedestrian movements adjacent to the construction area.

Construction of development projects at 1353 Yosemite/2350 Ingalls Street, 853 Jamestown Avenue, 1400 Carroll Avenue, and 2200-2250 Jennings Street, the Yosemite Slough Restoration project, and the transportation projects within the Bayview Community-Based Transportation Plan would not be near the project site or each other and/or would not be of extended duration or intensity and would not result in significant cumulative impacts.

Construction of the production, distribution and repair parcel delivery facility at 1313 Armstrong Avenue may overlap with construction of the proposed project. Construction of the 1313 Armstrong Avenue project would be similar to the proposed project with limited duration of construction and intensity of work, and is not anticipated to result in significant cumulative impacts on the transportation network. In addition, both projects are located where Armstrong Avenue terminates in a dead end at the project site, and Carroll Avenue has low volumes of vehicles and people walking and bicycling, and no public transit service. Simultaneous construction of the two projects, primarily due to their location, would not combine to result in significant cumulative impacts.

Construction of development projects and the roadway network as part of the CPHPS project—specifically the remainder of development within the former Alice Griffith housing complex and mixed-use development to the east of Arelious Walker Drive, construction of the roadway network within Candlestick Point, reconstruction of Carroll Avenue between Arelious Walker Drive and Ingalls Street, and the Yosemite Slough Bridge—would partially overlap with project construction. The CPHPS Phase II Development Plan Final Environmental Impact Report[37] identified significant and unavoidable construction impacts and required implementation of a Construction Traffic Management Program. Because the CPHPS project would include reconstruction of Carroll Avenue directly adjacent to the project site and could overlap with proposed project construction; this would be considered a significant cumulative construction-related transportation impact.

However, construction of the proposed project would have limited effects on the transportation network as it would not require any travel lane, roadway, or sidewalk closures. The temporary construction activities would occur over 30 months and would primarily occur within the project site. Furthermore, the proposed project would remove approximately 17,000 cubic yards of excavated materials from the site, which would not be substantial. Therefore, construction of the proposed project would not make a considerable

[37] *Candlestick Point-Hunters Point Shipyard Phase II Development Plan Project Final Environmental Impact Report*, June 2010, and Amendment 6 to the *2010 Candlestick Point Hunters Point Shipyard Phase II Final Environmental Impact Report*, Appendix C: Analysis of Transportation Effects, October 2019. Case File No. 2007.0946E

contribution to significant cumulative construction impacts. Thus, the proposed project's cumulative impacts would be less than significant. No mitigation would be required.

Impact C-TR-2: The proposed project, in combination with cumulative projects, would not create potentially hazardous conditions for people walking, bicycling, driving or public transit operations. (Less than Significant)

The 1353 Yosemite Avenue/2350 Ingalls Street, 853 Jamestown Avenue, 2200-2250 Jennings Street, and 1400 Carroll Avenue projects are not located in the immediate vicinity of the proposed project and are not anticipated to result in substantial changes to traffic circulation or include design features that could lead to potentially hazardous conditions for people walking, bicycling, driving, or riding transit. Some of these projects may be required to construct new sidewalks adjacent to the site where none exist or improve sidewalks consistent with Better Street Plan requirements.

In the project area, cumulative development projects and the transportation network changes within the Bayview Community-Based Transportation Plan would conform to public works and municipal transportation agency design standards and the requirements of the Better Streets Plan, the Transit-First Policy, and Vision Zero, as applicable. The cumulative transportation network projects within the Bayview Community-Based Transportation Plan would improve safety for people walking and bicycling and would not create hazardous conditions for people driving or transit operations.

In the project vicinity, the 1313 Armstrong Avenue project directly west of the proposed project may be required to build out the western portion of Hawes Street adjacent to its site; therefore, in combination with the proposed project, Hawes Street between Carroll and Armstrong avenues would have sidewalks on both sides of the street, which would improve safety for people walking adjacent to these sites. In addition, as part of the CPHPS project, Carroll Avenue between the new street network in Candlestick Point (i.e., east of Arelious Walker Drive) and Ingalls Street would be reconfigured to include 12- to 13-foot-wide sidewalks on either side of the street consistent with Better Streets Plan recommendations, landscaping and/or bioretention, class II bicycle lanes, and two travel lanes each way.[38] The proposed project would not preclude or conflict with the planned reconfiguration of Carroll Avenue as part of the CPHPS project.

Furthermore, as described in Impact TR-1, training activities would be conducted within the project site, and the two exit-only driveways on Carroll Avenue would mostly be used by fire department vehicles on an infrequent basis. In addition, the driveways would be gated and would include visual and/or audible warning systems. Therefore, project operations would not create potentially hazardous conditions for people bicycling within the planned class II bicycle lane on Carroll Avenue or people walking on the sidewalks adjacent to the project site.

Under cumulative conditions, trips by people walking, bicycling, or driving on the surrounding street network would increase due to the proposed project, other cumulative development projects, and growth elsewhere in the city and region. This would generally be expected to increase potential conflicts between people driving and people walking and bicycling, and public transit operations. However, a general increase

[38] Carroll Avenue is identified as a neighborhood residential street in the Better Streets Plan. Streets with this designation have a minimum sidewalk width of 10 feet and a recommended sidewalk width of 12 feet.

in cumulative travel by all modes in and of itself would not be considered a potentially hazardous condition.[39]

Overall, cumulative projects and the proposed project would be designed consistent with City policies and design standards, including the Better Streets Plan, and therefore would not create potentially hazardous conditions. Further, cumulative street improvements as part of the CPHPS project's transportation plan and the Bayview Community-Based Transportation Plan are expected to reduce conflicts along those streets. Thus, no significant cumulative impacts related to potentially hazardous conditions would occur and this impact would be less than significant. No mitigation would be required.

Impact C-TR-3: The proposed project, in combination with cumulative projects, would not significantly interfere with accessibility. (Less than Significant)

Cumulative projects and citywide growth would contribute to increasing the number of people walking, bicycling, driving, or riding transit on streets surrounding the project site. As described in Impact C-TR-2, cumulative development and transportation projects would enhance the transportation network for all ways of travel and would promote accessibility for people walking and bicycling. The identified cumulative projects would conform to the requirements of the Better Streets Plan, Transit-First Policy, and Vision Zero, and thus would adhere to planning principles that emphasize providing convenient connections and safe routes for people walking and bicycling.

Of the eight cumulative projects, the 1313 Armstrong Street project and the CPHPS project would most enhance accessibility for people walking and bicycling in the vicinity of the project site. The 1313 Armstrong Avenue project would construct new sidewalks adjacent to its site. The Candlestick Point-Hunters Point project will reconstruct Carroll Avenue between Ingalls Street and Arelious Walker Drive, including sidewalks and bicycle lanes (class II) on both sides of the street. In addition, the CPHPS project will construct the Bay Trail within its project site, which will connect with the segment of the Bay Trail that would be constructed as part of the Yosemite Slough Restoration Project.

None of the cumulative projects would include features that would substantially affect vehicle circulation in the project vicinity or impede emergency access. Prior to finalizing the design and dimensions of any planned transportation network changes under City jurisdiction, the fire and police departments' staff would review and approve streetscape modifications, as required through the Transportation Advisory Staff Committee review process, so that emergency vehicle access is not impeded. This same review process would be applied to the proposed project, so that the proposed project would not interfere with emergency access.

Under cumulative conditions, there would be a projected increase in vehicles on the streets within the study area, primarily due to build-out of the CPHPS project. However, with the planned transportation network improvements that will be constructed as part of that project, the increases in vehicles would not impede travel or access for people walking or bicycling, or for emergency vehicles.

[39] As used in this section, a "hazard" refers to a project generated vehicle potentially colliding with a person walking, bicycling, or driving or public transit vehicle that could cause serious or fatal physical injury, accounting for the aspects described below. Human error or non-compliance with laws, weather conditions, time-of-day, and other factors can affect whether a collision could occur. However, for purposes of CEQA, hazards refer to engineering aspects of a project (e.g., speed, turning movements, complex designs, distance between street crossings, sightlines) that may cause a greater risk of collisions that result in serious or fatal physical injury than a typical project. This analysis focuses on hazards that could reasonably stem from a project itself, beyond collisions, that may result from aforementioned non-engineering aspects or the transportation system as a whole.

As a result, no significant cumulative impacts related to accessibility would occur, and this impact would be ***less than significant***. No mitigation would be required.

Impact C-TR-4: The proposed project, in combination with cumulative projects, would not substantially delay public transit. (Less than Significant)

The 1353 Yosemite Avenue/2350 Ingalls Street, 853 Jamestown Avenue, 2200-2250 Jennings Street, and 1400 Carroll Avenue projects are not in the immediate vicinity of the project site and would not involve a substantial amount of new construction (less than 30,000 gross square feet of PDR, industrial or warehouse uses and up to 122 residential units). In addition, these projects do not include transportation features that could delay transit (e.g., roadway lane reductions on streets with transit routes). These projects would not generate a substantial number of vehicle trips during the p.m. peak-hour or redirect vehicles onto adjacent streets with transit routes such that substantial transit delay could occur. The proposed 1313 Armstrong Street project located directly west of the project site would construct about 300,000 square feet of PDR-2 uses. However, this proposed project would also generate less than the 300 peak-hour project vehicle trips, which is the threshold identified in the SF transportation guidelines as the number of vehicle trips that could result in delay for transit.

The new 15 Bayview Hunters Point Express bus route, included in the Bayview Community-Based Transportation Plan, was implemented in January 2021. None of the other transportation projects within the Bayview Community-Based Transportation Plan would be expected to delay transit (e.g., reduce travel lanes on streets with transit routes or redirect vehicles to streets with transit routes).

The CPHPS project's transportation plan includes a transit plan that would implement transit network improvements at various levels throughout the development. Nearby the project site, the transit plan includes extension of the 29 Sunset bus route to Candlestick Point, extension of the 28R 19th Avenue Limited bus route through Candlestick Point into Hunters Point Shipyard, implementation of a new Candlestick Point Express bus to downtown, and conversion of the T Third Street light-rail service from one-car to two-car trains, among other changes. The CPHPS Phase II Final Environmental Impact Report identified a significant and unavoidable project impact on transit operations on multiple bus routes and on the T Third Street light-rail line due to the additional vehicles and new transit riders generated by the development.[40] Due to the proposed project's proximity to the CPHPS project and other cumulative projects, the projects would combine to result in significant cumulative transit delay impacts.

To determine whether the proposed project would make a considerable contribution to the significant cumulative transit delay impact, the number of project-generated p.m. peak hour trips was calculated. During the p.m. peak hour, the proposed project would add 82 new vehicle trips and six transit trips to the transportation network. Given the limited number of p.m. peak-hour vehicle and transit trips that the proposed project would generate, operation of the proposed project would not contribute considerably to the significant cumulative transit impacts. Therefore, cumulative transit delay impacts would be ***less than significant***. No mitigation would be required.

[40] Per the 2019 Transportation Impact Analysis Guidelines, transit capacity is no longer considered in assessing the environmental impacts of a project on public local or regional transit operations to be consistent with state guidance regarding not treating addition of new users as an adverse impact and to reflect funding sources and policies that encourage additional ridership. Therefore, discussion of cumulative transit ridership and capacity utilization for local impacts in the *Candlestick Point-Hunters Point Shipyard Phase II Development Plan Project Final Environmental Impact Report* are no longer applicable and are therefore not considered in the analysis of cumulative transit impacts for this project.

Impact C-TR-5: The proposed project, in combination with cumulative projects, would not cause substantial additional VMT or substantially induce automobile travel. (Less than Significant)

VMT by its very nature is largely a cumulative impact. Under future cumulative conditions, the project site is in a transportation analysis zone (TAZ 892) where the projected year 2040 average daily VMT per employee is more than 15 percent below the future regional average.

For office uses, which most closely represents the proposed training facility, the projected 2040 average daily VMT per employee would be 13.9, which would be 18.4 percent below the 2040 projected regional average daily VMT per employee of 17.0. Given the project site is located in an area where VMT is greater than 15 percent below the projected 2040 regional average, the proposed project's uses would not result in substantial additional VMT.

Thus, no significant cumulative VMT impacts would occur, and cumulative impacts related to VMT would be ***less than significant***. No mitigation would be required.

Impact C-TR-6: The proposed project, in combination with cumulative projects, would not result in significant cumulative impacts to loading. (Less than Significant)

Under cumulative conditions, freight/service vehicle and passenger loading activities would increase as a result of other development projects; however, these activities would occur in the vicinity of their respective sites and would not combine with the proposed project's loading demand. Near the project site, loading activities associated with the 1313 Armstrong Avenue production, distribution, and repair/parcel delivery project directly to the west of the project site would occur within the 1313 Armstrong Avenue site. Loading activities associated with redevelopment of the former Alice Griffith housing project to the south of the project site would also occur within on-site loading spaces and within streets internal to the residential complex and would not occur on Carroll Avenue. As discussed in Impact TR-5, the proposed project would provide an on-site loading bay that would accommodate the proposed project's freight/service vehicle loading demand during the peak hour of loading activities. While dedicated passenger loading facilities would not be provided, as described above, these activities could be accommodated within the project site (or on Hawes Street or Carroll Avenue) without creating potentially hazardous conditions for people walking, bicycling, or driving. No other cumulative development projects have been identified that would contribute to either commercial-vehicle or passenger loading demand on the project block or result in substantial loading deficits that could result in secondary impacts such as potentially hazardous conditions for people walking, bicycling, or driving or substantially delayed public transit. Thus, no significant cumulative loading impacts would occur. Therefore, cumulative loading impacts would be ***less than significant***. No mitigation would be required.

Impact C-TR-7: The proposed project, in combination with cumulative projects, would not result in significant cumulative parking impacts. (Less than Significant)

Per the SF transportation guidelines, if a project site is located within the planning department's map-based screening area[41] it would not result in a substantial parking deficit and secondary parking impacts would be less than significant. According to the planning department's Transportation Information Map and map-based screening tool, the transportation analysis zones that include the project site and adjoining

[41] The map based screening area refers to transportation analysis zones where the existing VMT per capita is less than 15 percent below existing regional VMT per capital and/or where 2040 VMT per capita is less than 15 percent below 2040 regional VMT per capital.

neighborhoods would be within the planning department's map-based screening area under future 2040 cumulative conditions. Thus, under cumulative conditions, cumulative development projects and the proposed project would meet the planning department's parking analysis screening criteria and would not result in substantial vehicular parking deficits. Therefore, cumulative parking impacts would be ***less than significant***. No mitigation would be required.

7. Noise

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

In accordance with the requirements of CEQA, the noise analysis evaluates the proposed project's noise and vibration sources to determine the impact of the proposed project on the existing ambient noise environment. The project site is not within the vicinity of a private airstrip or within 2 miles of a public airport or public use airport; therefore, Topic 6(c) is not applicable. In addition, the proposed project would not include nighttime construction or operation; therefore, impact thresholds related to sleep disturbance are not discussed.

NOISE AND VIBRATION OVERVIEW

Noise

Noise is generally defined as unwanted sound. Sound travels in the form of waves from its source, exerting a sound pressure level (referred to as "sound level") that is measured in decibels (dB). Decibels are measured on a logarithmic scale because sound pressure varies widely within the range of human hearing. Because the human ear is not equally sensitive to all sound levels, noise measurements are weighted more heavily for the frequencies that correspond to the human ear's decreased sensitivity to extremely low and high sound levels. This method of frequency weighting is referred to as A-weighting and the units of measure are A-weighted decibels, or dBA.

Noise levels are measures of noise at a given instant in time. Environmental noise levels fluctuate over time, depending on the sources of sound that contribute to the community noise environment. Background noise levels change throughout a typical day, based on the changes in sources such as traffic, and on the addition of short-duration, single-event noise sources such as aircraft flyovers, emergency vehicle sirens, and nearby noisy motor vehicles. The time-varying characteristic of environmental noise is typically described using the following statistical noise descriptors:

- L_{eq}, used to describe noise over a specified period of time in terms of a single value, also referred to as the "average" sound level.
- L_{max}, the maximum instantaneous noise level measured over a specified period of time.
- L_{dn}, also called the day-night average noise level, averaging the A-weighted noise level during a 24-hour day, after an addition of 10 dB to measured noise levels between the hours of 10 p.m. and 7 a.m. to account for greater nighttime noise sensitivity.
- CNEL (Community Noise Equivalent Level) is similar to L_{dn} but also includes an addition of 5 dB to measured noise levels between 7 p.m. and 10 p.m. after the addition of 10 dB to the measured noise levels between 10 p.m. and 7 a.m. to account for greater noise sensitivity in the evening and nighttime.

For a stationary point-source, sound typically attenuates (decreases) at a rate of 6 dB for each doubling of distance (e.g., a sound level of 80 dB at 50 feet would decrease to 74 dB at 100 feet and 68 dB at 200 feet). For a line source such as traffic on a roadway, sound attenuates at a rate of approximately 3 dB for each doubling of distance for hard sites and 4.5 dB for soft sites (e.g., grass or scattered bushes and trees). Barriers such as buildings that block the line of sight between the sound source and the receiver increase the attenuation of sound over an equivalent distance.

The effects of noise on people range from annoyance and interference with speech to sleep disturbance, and under extremely noisy conditions, hearing impairment. There is a wide variation in the sound levels that cause annoyance in different receivers, depending in part on the existing (ambient) noise level. Except in carefully controlled laboratory environments, a change of 1 or 2 dBA cannot be perceived. In a typical environment, a change of 3 dBA is a barely perceptible difference, a change of 5 dBA is readily perceptible, and a change of 10 dB is generally perceived as a doubling of loudness.

Vibration

Groundborne vibration from construction activities can produce detectable vibration at nearby buildings, infrastructure, and sensitive receptors. The main concerns associated with construction-generated vibration include sleep disturbance, building damage, and interference with vibration-sensitive instruments or machinery, such as that used in research laboratories or hospitals. The potential for construction activities to generate vibration affecting each of these receptor types are discussed below, following the discussion of vibration levels that may be generated during construction.

Potential vibration-related impacts to structures, equipment, utilities, or people from construction are generally limited to the use of impact equipment such as pile drivers (impact and vibratory), hoe rams, and vibratory compactors.

Vibration intensity is expressed as peak particle velocity (PPV), the maximum speed at which the ground moves while it temporarily shakes. Because ground-shaking speeds are very slow, PPV is measured in inches per second.

The nearest buildings to the project site are at least 80 feet to the east and north, across Hawes Street and Armstrong Avenue, respectively.

ENVIRONMENTAL SETTING

Certain land uses are considered more sensitive to noise than others. Examples of these include residential areas, educational facilities, religious institutions, hospitals, childcare facilities, senior housing, hotels, and motels. Existing noise-sensitive land uses in the project site vicinity are residential developments at 1110 Donner Avenue, which is 400 feet east of the project site, and 5800 Third Street, which is 1,300 feet west of the project site. At both of these locations, long-term noise measurements were taken, and traffic noise was modeled, as shown in **Table 9**.

Table 9: Existing Noise Levels

SITE	ADDRESS	MODELED TRAFFIC L_{EQ} DBA	MEASURED AVERAGE 15-MINUTE L_{EQ}	MEASURED PEAK-HOUR L_{DN} DBA
LT-1	1110 Donner Avenue	59.0	60	65
LT-2	5800 Third Street	57.8	67	67.5

Vibration-sensitive buildings comprise historic buildings, residential structures, and buildings where vibration-sensitive equipment is used, such as hospitals or medical facilities. There are no historic buildings within 200 feet of the project site, and the nearest residential uses are at 1110 Donner Avenue, 400 feet to the east. There are no medical offices, hospitals, or research facilities within 1,000 feet; as such, buildings containing vibration-sensitive equipment are not further discussed in this analysis. However, underground utilities may be susceptible to damage from groundborne vibration.

Impact NO-1: Construction activities associated with the proposed project could result in a significant temporary increase in ambient noise levels in the project vicinity in excess of established standards. (Less than Significant with Mitigation)

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

Police Code section 2908 prohibits construction work between 8 p.m. and 7 a.m., if noise would exceed the ambient noise level by 5 dBA at the project property line, unless a special permit is authorized by the Director of Public Works or the Director of Building Inspection. The proposed project is required to comply

with Police Code section 2907. The proposed project would not include nighttime construction, so Police Code section 2908 would not apply.

In addition to the construction noise regulations promulgated in Police Code sections 2907 and 2908, the planning department uses a criterion of 10 dB above the ambient noise level to assess substantial temporary ambient noise level increases from construction. A 10 dB increase in ambient noise levels corresponds to a perceived doubling of loudness. This criterion applies at the property lines of the nearest sensitive receivers.

In addition, the planning department supplements the construction noise analysis with guidance provided in the Construction Noise Assessment of the Federal Transit Administration Transit Noise and Vibration Assessment Manual.[42] Specifically, the planning department uses the general assessment daytime residential noise limit of 90 dBA at residential receptors as developed by the Federal Transit Administration. This assessment results in a reasonable worst-case scenario because it is based on the assumption that the two noisiest pieces of equipment would operate simultaneously.

If any of the above criteria are exceeded (10 dB increase in ambient noise levels, 90 dBA at noise-sensitive receptors), the planning department would evaluate the temporal frequency, duration, and intensity of the exceedance when determining whether construction noise could result in a substantial temporary increase in ambient noise levels.

Construction noise from the proposed project was modeled in three phases—building foundation and shoring work (including site preparation), building construction, and paving. The construction noise analysis evaluated the simultaneous operation of the two noisiest pieces of equipment.[43] The noisiest phase of construction would be the building foundation and shoring work. During the building foundation and shoring work, deep foundations for buildings would be installed with a mix of vibratory and impact hammers. Assuming use of impact pile drivers, the highest CNEL construction noise levels at 1110 Donner Avenue would be 69 dBA, and the peak hour would be 71 dBA, which would exceed ambient noise levels at 1110 Donner Avenue by more than 10 dB. The second-noisiest phase of construction would be paving. During this phase, the highest CNEL construction noise levels 1110 Donner Avenue would be 58 dBA, and the peak-hour noise level would be 60 dBA. These levels would be below the measured ambient noise levels at 1110 Donner Avenue. None of the construction phases would exceed the 90 dBA criteria.

Therefore, the pile-driving noise levels would exceed ambient noise levels by more than 10 dB, and the impact would be significant.

To reduce the impact from the pile driving to less than significant, **Mitigation Measure M-NO-1, Construction Noise Control**, has been identified and agreed to by the project sponsor. This measure requires the preparation of a project-specific noise control plan to meet a performance target of construction activities not resulting in a noise level greater than 90 dBA at noise-sensitive receptors and 10 dBA above the ambient noise level at noise-sensitive receptors. The plan will include specific measures to reduce construction noise levels, such as location of stationary noise sources as far as possible from sensitive receptors, use of shielding to muffle noise from stationary sources, and selection of "quiet" construction methods (e.g., use of intake silencers and engine enclosures. Specific to pile-driving the noise control plan would include implementation of "quiet" pile-driving technologies, such as pre-drilling of piles or use of sonic pile drivers. The noise control plan would also include measures for notifying the public of

[42] Federal Transit Administration, *Transit Noise and Vibration Assessment Manual,* September 2018.
[43] WSP, SoundPLAN Output for 1236 Carroll Avenue, San Francisco, CA. September 23, 2021.

construction activities, complaint procedures, and a plan for monitoring construction noise levels in the event complaints are received.

Mitigation Measure M-NO-1: Construction Noise Control

Prior to issuance of any demolition or building permit, the project sponsor shall submit a project-specific construction noise control plan to the ERO or the ERO's designee for approval. The construction noise control plan shall be prepared by a qualified acoustical engineer, with input from the construction contractor, and include all feasible measures to reduce construction noise. The construction noise control plan shall identify noise control measures to meet a performance target of construction activities not resulting in a noise level greater than 90 dBA at noise-sensitive receptors and 10 dBA above the ambient noise level at noise-sensitive receptors (residences, hospitals, convalescent homes, schools, churches, hotels and motels, and sensitive wildlife habitat). The project sponsor shall ensure that requirements of the construction noise control plan are included in contract specifications. The plan shall also include measures for notifying the public of construction activities, complaint procedures, and a plan for monitoring construction noise levels before and during the beginning of each major phase of construction. The construction noise control plan shall include the following measures to the degree feasible, or other effective measures, to reduce construction noise levels:

- Use construction equipment that is in good working order, and inspect mufflers for proper functionality;
- Select "quiet" construction methods and equipment (e.g., improved mufflers, use of intake silencers, engine enclosures);
- Use construction equipment with lower noise emission ratings whenever possible, particularly for air compressors;
- Prohibit the idling of inactive construction equipment for more than 5 minutes;
- Locate stationary noise sources (such as compressors) as far from nearby noise-sensitive receptors as possible, muffle such noise sources, and construct barriers around such sources and/or the construction site;
- Avoid placing stationary noise-generating equipment (e.g., generators, compressors) within noise-sensitive buffer areas (as determined by the acoustical engineer) immediately adjacent to neighbors;
- Enclose or shield stationary noise sources from neighboring noise-sensitive properties with noise barriers to the extent feasible. To further reduce noise, locate stationary equipment in pit areas or excavated areas, if feasible; and
- Install temporary barriers, barrier-backed sound curtains, and/or acoustical panels around working powered impact equipment and, if necessary, around the project site perimeter. When temporary barrier units are joined together, the mating surfaces shall be flush with each other. Gaps between barrier units, and between the bottom edge of the barrier panels and the ground, shall be closed with material that completely closes the gaps, and dense enough to attenuate noise.

The construction noise control plan shall include the following measures for notifying the public of construction activities, complaint procedures, and monitoring of construction noise levels:

- Designation of an on-site construction noise manager for the proposed project;
- Notification of neighboring noise sensitive receptors within 300 feet of the project construction area at least 30 days in advance of high-intensity noise-generating activities (e.g., pier drilling, pile driving, and other activities that may generate noise levels greater than 90 dBA at noise sensitive receptors) about the estimated duration of the activity;
- A sign posted on site describing noise complaint procedures and a complaint hotline number that shall always be answered during construction;
- A procedure for notifying the planning department of any noise complaints within one week of receiving a complaint;
- A list of measures for responding to and tracking complaints pertaining to construction noise. Such measures may include the evaluation and implementation of additional noise controls at sensitive receptors; and
- Conduct noise monitoring (measurements) at the beginning of major construction phases (e.g., demolition, grading, excavation) and during high-intensity construction activities to determine the effectiveness of noise attenuation measures and, if necessary, implement additional noise control measures.

The construction noise control plan shall include the following additional measures during pile-driving activities:

- When pile driving is to occur within 600 feet of a noise-sensitive receptor, implement "quiet" pile-driving technology (such as pre-drilling of piles, sonic pile drivers, auger cast-in-place, or drilled-displacement, or the use of more than one pile driver to shorten the total pile-driving duration) where feasible, in consideration of geotechnical and structural requirements and conditions;
- Where the use of driven impact piles cannot be avoided, properly fit impact pile driving equipment with an intake and exhaust muffler and a sound-attenuating shroud, as specified by the manufacturer; and
- Conduct noise monitoring (measurements) before, during, and after the pile driving activity.

With implementation of Mitigation Measure M-NO-1, the proposed project's construction noise impact would be ***less than significant with mitigation***.

Impact NO-2: Construction of the proposed project could generate excessive groundborne noise or vibration levels. (Less than Significant with Mitigation)

Structure Damage

A structure's susceptibility to vibration-induced damage depends upon its age, condition, distance from the vibration source, material, and the vibration level. Vibration impacts to structures are usually significant if construction vibration could potentially result in structural or cosmetic damage or, in the case of a historic resource, materially alter the resource. San Francisco uses impact thresholds from the California Department of Transportation, as shown in **Table 10.** Since none of the receivers within 200 feet of the project site are historic structures, fragile structures, or older residential structures, the 0.5-PPV threshold for intermittent sources is used in this assessment.

Table 10. Vibration Guidelines for Potential Damage to Structures

STRUCTURE TYPE AND CONDITION	MAXIMUM PEAK PARTICLE VELOCITY (PPV, IN/SEC)	
	TRANSIENT SOURCES	CONTINUOUS/FREQUENT INTERMITTENT SOURCES
Extremely fragile historic buildings	0.12	0.08
Fragile Buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Source: California Department of Transportation. *Transportation and Construction Vibration Guidance Manual, Table 19*. April 2020. Available: https://dot.ca.gov/programs/environmental-analysis/noise-vibration/guidance-manuals. Accessed March 18, 2021

Note: Transient sources create a single, isolated vibration event (e.g., blasting or drop balls). Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

The major vibration-generating equipment and activities expected to be used during the demolition, excavation, pile driving, and restoration of the project site are presented in **Table 11** at different distances. Equipment vibration reference emission levels used for the predictions were gathered from measurements performed and published by the Federal Transportation Administration. All of the equipment presented in **Table 11** can be operated without risk of exceeding the Caltrans building damage threshold of 0.5 PPV in/sec at 80 feet or more, which is the location of the nearest industrial building. The nearest residential use is approximately 400 feet southeast of the project area. Therefore, damage to structures from construction vibration would be ***less than significant***, and no mitigation would be required.

Table 11. Vibration Levels from Construction Equipment at Nearest Sensitive Receptor

EQUIPMENT	PREDICTED VIBRATION LEVELS, PPV (IN/SEC)
	400 FEET (1110 DONNER AVENUE)
Caisson Drilling	0.003
Large bulldozer	0.003
Hoe Ram	0.003
Small Bulldozer	0.000
Clam Shovel drop (Slurry Wall)	0.006
Load Truck	0.006
Jack Hammer	0.002
Vibratory Roller	0.007
Impact Pile Driver – upper range	0.047
Impact Pile Driver - typical	0.020
Vibratory Pile Driver – upper range	0.023
Vibratory Pile Driver – upper range	0.005

PPV = peak particle velocity

IN/SEC = inches per second

Utility Damage

Underground utilities are generally considered to be less susceptible to damage than surface structures because vibration under the ground surface is lower than at the ground surface, due to the dampening

effects of the substrate. The American Association of State Highway and Transportation Officials notes that at least one utility has established a standard maximum vibration of 4.0 in/sec PPV for buried utilities, noting that underground or restrained concrete structures can withstand vibration of 10.0 in/sec PPV before threshold cracks appear.[44]

A stormwater transport/storage box traverses the project site, from east to west, beneath unbuilt Bancroft Street. If piles are driving within 4 feet of this transport/storage box, damage to this utility could occur. Given the location of the piles is not known at this time, this would be considered a significant impact.

To reduce this impact to less than significant, **Mitigation Measure M-NO-2, Protection of Utility Structures and Vibration Monitoring During Construction**, has been identified and agreed to by the project sponsor. This measure requires the preparation of a Pre-Construction Survey and Vibration Management and Monitoring Plan to identify all feasible measures to avoid damage to utilities.

Mitigation Measure M-NO-2: Protection of Utility Structures and Vibration Monitoring During Construction

Prior to issuance of any demolition or building permit, the project sponsor shall submit a project-specific pre-construction survey and vibration management and monitoring plan to the ERO or the ERO's designee for approval. The plan shall identify all feasible means to avoid damage to the stormwater transport/storage box beneath Bancroft Street. The project sponsor shall ensure that the following requirements of the pre-construction survey and vibration management and monitoring plan are included in contract specifications, as necessary.

Pre-construction Survey. Prior to the start of any ground-disturbing activity, the project sponsor shall engage a consultant to undertake a pre-construction survey of potentially affected utility structures. The project sponsor shall submit the survey to the ERO or the officer's designee for review and approval prior to the start of vibration-generating construction activity.

Vibration Management and Monitoring Plan. The project sponsor shall undertake a monitoring plan to avoid or reduce proposed project-related construction vibration damage to utility structures and to ensure that any such damage is documented and repaired. Prior to issuance of any demolition or building permit, the project sponsor shall submit the plan to the ERO for review and approval.

The vibration management and monitoring plan shall include, at a minimum, the following components, as applicable:

- *Maximum Vibration Level*. Based on the anticipated construction and condition of the affected utility structures, a qualified acoustical/vibration consultant in coordination with a civil engineer (or professional with similar qualifications) shall establish a maximum vibration level that shall not be exceeded at the utility structures, based on existing conditions, character-defining features, soil conditions, and anticipated construction practices.

44 California Department of Transportation. *Transportation and Construction Vibration Guidance Manual*. September 2013. Table 20. http://www.dot.ca.gov/hq/env/noise/pub/TCVGM_Sep13_FINAL.pdf.

- *Vibration-generating Equipment*. The plan shall identify all vibration-generating equipment to be used during construction (including but not limited to site preparation, clearing, demolition, excavation, shoring, foundation installation, and building construction).
- *Alternative Construction Equipment and Techniques*. The plan shall identify potential alternative equipment and techniques that could be implemented if construction vibration levels are observed in excess of the established standard (e.g., drilled shafts [caissons] could be substituted for driven piles, if feasible, based on soil conditions, or smaller, lighter equipment could be used in some cases).
- *Pile-Driving Requirements*. The project sponsor shall incorporate into project construction specifications a requirement that the construction contractor(s) use all feasible means to avoid or reduce damage to potentially affected utility structures. Such methods may include one or more of the following:
  - Incorporate "quiet" pile-driving technologies into project construction (such as drilled shafts, using sonic pile drivers, auger cast-in-place, or drilled-displacement), as feasible; and/or
  - Ensure appropriate excavation shoring methods to prevent the movement of utility structures.
- *Buffer Distances*. The plan shall identify buffer distances to be maintained based on vibration levels and site constraints between the operation of vibration-generating construction equipment and the potentially affected utility structures to avoid damage to the extent possible.
- *Vibration Monitoring*. The plan shall identify the method and equipment for vibration monitoring to ensure that construction vibration levels do not exceed the established standards identified in the plan.
  - Should construction vibration levels be observed in excess of the standards established in the plan, the contractor(s) shall halt construction and put alternative construction techniques identified in the plan into practice, to the extent feasible.
  - The qualified civil engineer shall inspect each affected utility structure (as allowed by property owners) in the event the construction activities exceed the vibration levels identified in the plan.
  - The civil structural engineer shall submit monthly reports to the ERO during vibration-inducing activity periods that identify and summarize any vibration level exceedances and describe the actions taken to reduce vibration.
  - If vibration has damaged utility structures, the civil engineer shall immediately notify the ERO and prepare a damage report documenting the features of the utility structure that has been damaged.
  - Following incorporation of the alternative construction techniques and/or planning department review of the damage report, vibration monitoring shall recommence to ensure that vibration levels at each utility structure are not exceeded.

- *Periodic Inspections*. The plan shall identify the intervals and parties responsible for periodic inspections. The qualified civil engineer shall conduct regular periodic inspections of each affected utility structure (as allowed by property owners) during vibration-generating construction activity on the project site. The plan will specify how often inspections would occur.
- *Repair Damage*. The plan shall also identify provisions to be followed should damage to any utility structure occur due to construction-related vibration. The utility structures shall be remediated to their pre-construction condition (as allowed by property owners) at the conclusion of vibration-generating activity on the site.

Vibration Monitoring Results Report. After construction is complete, the project sponsor shall submit to the ERO a final report from the qualified civil engineer. The report shall include, at a minimum, collected monitoring records, structure condition summaries, descriptions of all instances of vibration level exceedance, identification of damage incurred due to vibration, and corrective actions taken to restore damaged utility structures. The ERO shall review and approve the vibration monitoring results report.

With implementation of Mitigation Measure M-NO-2, the proposed project's impact on utilities would be ***less than significant with mitigation***.

Impact NO-3: Operation of the proposed project would not result in a substantial permanent increase in ambient noise levels in the project vicinity in excess of applicable standards. (Less than Significant)

Traffic Noise

Project-generated traffic noise is considered significant if it is 5 dBA L_{dn}/CNEL above ambient or 3 dBA L_{dn}/CNEL above ambient when sensitive receptors are located in noise-degraded environments. Traffic noise generated by the proposed project was evaluated using Federal Highway Administration Traffic Noise Model. The proposed project would result in 323 daily vehicular trips, including 82 p.m. peak-hour trips. **Table 12** shows the change in traffic noise levels due to the proposed project. The proposed project-generated traffic noise would be less than 2dBA,[45] and it would not be noticeable due to other noise sources in the area. Therefore, permanent noise increases due to project-related traffic would be ***less than significant***, and no mitigation would be required.

Table 12. Project-Generated Traffic Noise

SITE	ADDRESS	EXISTING L_{EQ} DBA	WITH-PROJECT L_{EQ} DBA	NET CHANGE IN TRAFFIC NOISE LEVELS
LT-1	1110 Donner Avenue	59.0	60.2	1.2
LT-2	5800 Third Street	57.8	58.8	1

Mechanical Equipment

Police Code section 2909 stipulates noise limits based on property type. Activities on public properties may not generate a noise level more than 10 dBA above the local ambient noise level at a distance of 25 feet. Commercial and industrial uses may not generate a noise level more than 8 dBA above the local ambient noise level at any point outside the property plane. Although the proposed project would be a publicly

[45] WSP, SoundPLAN Output for 1236 Carroll Avenue, San Francisco, CA. September 23, 2021.

owned facility, it would not be publicly accessible. Therefore, the 8-dBA threshold for industrial sites is used in this analysis.

In addition, no fixed (permanent) noise source may cause the noise level inside any sleeping or living room in a dwelling unit on residential property to exceed 45 dBA between 10 p.m. and 7 a.m. or 55 dBA between 7 a.m. and 10 p.m. when windows are open, except where building ventilation is achieved through mechanical systems that allow windows to remain closed.

Stationary heating, ventilation, and air conditioning equipment typically generates noise levels of 85 dBA at 50 feet. This equipment would be installed on the roofs of the administration, maintenance (shops), and apparatus buildings. The specific locations of this equipment has not been determined. For the purpose of the noise analysis, ventilation systems for each building, with a fan speed of 738 rpm and an air flow of 1,500 cubic meters per hour, were assumed to be placed on each rooftop behind 10-foot screens. In addition, three smoke exhaust scrubber fans, with an air flow of 5,015 cubic meters per hour with a noise level 67 dBA at 50 feet, were included in the assessment of mechanical equipment. Combined operation of this mechanical equipment would result in noise levels of 58 dBA at the property plane, which is below the existing 68 dBA peak one-hour Leq at the property plane.[46] Therefore, the mechanical equipment would not exceed the 8 dBA noise ordinance threshold.

In addition, the nearest sensitive receptors would be the residential development at 1110 Donner Avenue. Noise levels would dissipate over the 400-foot distance between the project site and this receptor. Moreover, this development includes mechanical building ventilation systems that allow the windows to remain closed. Therefore, noise from mechanical equipment would be ***less than significant***, and no mitigation would be required.

Generator

Noise from emergency generators is regulated by Police Code section 2909. In addition to the thresholds above for mechanical equipment, noise from regular generator testing cannot exceed 75 dBA at the property plane. The proposed project would include a single emergency generator located on the west side of the administration building. Generator noise at the property plane would be 34 dBA for the one-hour Leq because the generator would only run 40 percent of the hour, noise would be shielded from off-site sensitive receptors to the east and west by the administration building and maintenance (shops) building, and the generator would be equipped with an exhaust silencer. The existing peak one-hour Leq at the property plan is 68 dBA.[47] Therefore, the proposed emergency generators would be below the criterion of 75 dBA at the property plane. The impact would be ***less than significant***, and no mitigation would be required.

Fire-Training Operations

Noise from temporary events is regulated by Police Code section 2909(d). Noise from events may not exceed 10 dBA above ambient levels. Live-fire training sessions would occur up to four times per day for up to 75 days per year. Such exercises would occur in the central and northern portions of the project site and would involve multiple noise sources. The start of each live-fire session would be signaled by a loudspeaker public address system within the administration, maintenance, and apparatus buildings, as well as ringing a bell within the exterior training area. Depending on the exercise, trainees would drive fire trucks or other equipment within the project site, reaching a live-fire structure, ventilation prop or rescue prop. Sirens may be used. Each siren would sound for a maximum of 10 seconds, once per day for a period of four days, three

[46] WSP, SoundPLAN Output for 1236 Carroll Avenue, San Francisco, CA. September 23, 2021.
[47] WSP, SoundPLAN Output for 1236 Carroll Avenue, San Francisco, CA. September 23, 2021.

weeks in a row, three times per year. At fire locations, exhaust capture systems, with fans, would capture smoke generated by the fires. The maximum duration of any live-fire training activity would be 30 minutes.

The combined noise level of these fire-training operations, as well as of the mechanical equipment and generator discussed above, was modeled for the proposed project. Together, these operations would result in noise levels of 57.9 dBA at the 1110 Donner Avenue sensitive receptor.[48] These noise levels would be below existing noise levels, as well as below the 10-dBA impact threshold. The loudest noise source—the sirens—would generate noise levels of 100 dBA at 100 feet. Because the sirens would sound for a maximum of only 10 seconds, 36 times per year, they would not contribute to an increase of more than 1 dB in either the peak-hour noise levels or the CNEL noise levels in the area.

As noted above, the administration, maintenance, and apparatus buildings would be located on the southern property line, which would shield the noise from fire-training operations from areas to the south and southwest. In addition, the proposed project would include a 12-foot-tall perimeter fence, consisting of a combination of masonry wall and steel fence, which would further dissipate off-site noise. The nearest sensitive receptors would be the residential development at 1110 Donner Avenue. Noise levels would dissipate over the 400-foot distance between the project site and this receptor. This development includes mechanical building ventilation systems that allow the windows to remain closed. Therefore, noise from fire-training operations would be ***less than significant***, and no mitigation would be required.

Impact NO-4: Operation of the proposed project would not result in excessive groundborne vibration levels. (No Impact)

Operation of the fire-training facility would entail the use of vehicles and fire on newly paved surfaces. Groundborne vibration from truck and automobile traffic is not generally perceptible unless the vehicles are operating on irregular surfaces very close to sensitive receptors. The nearest vibration-sensitive receptor is located 400 feet to the east. Therefore, ***no impact*** is anticipated from operational vibration activities of the proposed project.

Impact C-NO-1: The proposed project, in combination with cumulative projects, could result in significant cumulative construction noise impact. (Less than Significant with Mitigation)

Past, present, and reasonably foreseeable future projects are described in Section B of this initial study. The largest cumulative project in the vicinity is the CPHPS Phase II project, which would be built over the course of several years and include multiple instances of impact pile-driving. The project will result in new neighborhoods where operational traffic-generated noise will substantially increase.[49]

Construction of cumulative projects, particularly those in CPHPS Phase II, will include pile-driving. Because pile-driving activities will be periodic over a 20-year period and may overlap with other nearby construction activities during project development, construction-related temporary increases in ambient noise levels will be considered cumulatively significant and unavoidable, reaching levels of 107 dBA Leq. As indicated under Impact NO-2, the proposed project would include impact pile-driving and would generate substantial construction noise of more than 10 dB above ambient noise levels at nearby sensitive receptors. Therefore,

[48] WSP, SoundPLAN Output for 1236 Carroll Avenue, San Francisco, CA. September 23, 2021.

[49] San Francisco Redevelopment Agency, Candlestick Point – Hunters Point Shipyard Phase II Development Plan Project: Final Environmental Impact Report, August 2017, available online: https://sfplanning.s3.amazonaws.com/sfmea/CP-HPS_FEIR_Vol_II_2017-08-11.pdf, accessed August 1, 2021.

construction of the proposed project **would considerably contribute** to significant cumulative construction noise impacts.

Mitigation Measure M-NO-1: Construction Noise Control, identified previously, would reduce construction noise and construction vibration impacts from the proposed project. This measure would require the preparation of a project-specific noise control plan to meet a performance target of construction activities not resulting in a noise level greater than 90 dBA at noise-sensitive receptors and 10 dBA above the ambient noise level at noise-sensitive receptors. With implementation of Mitigation Measure M-NO-1, the proposed project's contribution to cumulative construction noise impacts would be ***less than considerable with mitigation***.

Impact C-NO-2: The proposed project, in combination with cumulative projects, would not result in significant cumulative vibration impact. (Less than Significant)

Construction activities from cumulative projects could produce vibration that, in combination with the proposed project, have the potential to cause vibration effects that would be considered significant. Due to the construction phasing, it is possible that pile driving and other vibratory construction equipment would operate on multiple sites and collectively result in vibration impacts in excess of 0.5 PPV at new residential buildings and modern industrial/commercial buildings. However, groundborne vibration generally attenuates rapidly with distance from the source of the vibration. Maximum project-generated PPV at the nearest cumulative development would be less than 0.3 PPV. As such, the construction of the proposed project **would not considerably contribute** to significant cumulative construction vibration impacts.

Vibration sources anticipated with the operation of cumulative projects could occur from trucks, buses, and light-rail vehicles traveling the neighborhood. These vehicles would not exceed the Caltrans PPV thresholds for damage to buildings or structures. Also, there are no substantial fixed sources of groundborne vibration included as part of the cumulative projects. Finally, the proposed project would result in no impact related to operational vibration.

Impact C-NO-3: The proposed project, in combination with cumulative projects, would not result in significant cumulative operational noise impacts. (Less than Significant)

The CPHPS II project, in combination with past, present, and reasonably foreseeable future development, would result in a substantial, permanent increase in traffic noise levels that would affect existing and future residential uses along all project site access roads. These noise increases, as modeled on 10 of the major site access roads, are expected to raise ambient noise levels by between 3.5 dBA Ldn and 9.8 dBA Ldn above the existing ambient levels. Cumulative noise level increases would occur on several street segments, including along Carroll Avenue east of Third Street, which are the same street segments that would be affected by the fire-training facility.

However, the CPHPS II project would contribute almost the entirety of increase in traffic noise. That project would result in 7,077 vehicle trips, including 4,913 trips for the Candlestick area that would travel along 3 "key routes," one of which is Carroll Avenue. Within the context of that redevelopment and traffic and noise increase, the fire-training facility would add only 82 p.m. peak-hour trips and contribute only been a 0.2 and 1.2 dBA increase during the p.m. peak hour.[50]

[50] WSP, SoundPLAN Output for 1236 Carroll Avenue, San Francisco, CA. September 23, 2021.

The CPHPS II project would also result in redevelopment of the former Alice Griffith Housing Development, directly south of the project site across Carroll Street. The CPHPS II project would result in the location of new residential receptors at this location. Operation of the fire-training facility—including the mechanical equipment, generator, and fire training operations (public address systems, bells, and sirens)—would result in CNEL noise levels of 63.2 dBA at the residential receptors, which would be approximately 4 dBA more than under existing conditions (assuming that the Alice Griffith site has approximately the same existing outdoor noise levels as 1110 Donner Avenue). Therefore, noise generated by operations of the fire-training facility would be within the projected 3.5 dBA Ldn to 9.8 dBA Ldn noise increase under cumulative conditions. Moreover, it is assumed that future residential buildings on the Alice Griffith Site would include mechanical ventilation, such that windows could be kept closed.

Therefore, cumulative impacts from operational noise would be ***less than significant***.

8. Air Quality

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

SETTING

Overview

The Bay Area Air Quality Management District (air district) is the regional agency with jurisdiction over the nine-county San Francisco Bay Area Air Basin (air basin), which includes San Francisco, Alameda, Contra Costa, Marin, San Mateo, Santa Clara, and Napa counties and portions of Sonoma and Solano counties. The air district is responsible for attaining and maintaining air quality in the air basin within federal and state air quality standards, as established by the federal Clean Air Act and the California Clean Air Act, respectively. Specifically, the air district has the responsibility to monitor ambient air pollutant levels throughout the air basin and to develop and implement strategies to attain the applicable federal and state standards. The federal and state Clean Air Acts require air quality plans to be developed for areas that do not meet air quality standards, generally. The air district adopted the most recent air quality plan—the 2017 clean air plan—on April 19, 2017. The clean air plan updates the most recent Bay Area ozone plan—the 2010 clean air

plan—in accordance with the requirements of the California Clean Air Act to implement all feasible measures to reduce ozone; provide a control strategy to reduce ozone, particulate matter, air toxics, and greenhouse gases in a single, integrated plan; and establish emission control measures to be adopted or implemented. The clean air plan contains the following primary goals:

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

The clean air plan represents the most current applicable air quality plan for the air basin. Consistency with this plan is the basis for determining whether the proposed project would conflict with or obstruct implementation of air quality plans (checklist question E.7.a).

Criteria Air Pollutants

In accordance with the state and federal Clean Air Acts, air pollutant standards are identified for the following six criteria air pollutants: ozone, carbon monoxide, particulate matter ($PM_{2.5}$ and PM_{10}), nitrogen dioxide, sulfur dioxide, and lead. These air pollutants are termed criteria air pollutants because they are regulated by developing specific public health- and welfare-based criteria as the basis for setting permissible levels. The air basin is designated as either in attainment or unclassified for most criteria pollutants with the exception of ozone, $PM_{2.5}$, and PM_{10},[51] for which these pollutants are designated as non-attainment for either the state or federal standards.[52] Ozone is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases and nitrogen oxides.

Starting in 2017, increasing levels of $PM_{2.5}$ levels were recorded, with the most notable increase in 2018 because of a very active and extreme wildfire season. Although not as notable in 2019, these events have become more frequent and extreme as evidenced in 2020 in which the entire Bay Area and much of California experienced one of the largest and most extreme wildfire seasons in recorded California history in terms of the number of wildfires, acres burned, and damage. The extreme nature of recent wildfires is increasingly a result of changing weather patterns that include higher temperatures, decreasing rainfall, and shifting winds that result in low-moisture content in trees and plants and high flammability. The health effects of this exposure include eye and throat irritation, coughing, and difficulty breathing—all of which could exacerbate the health effects on persons with asthma or other pre-existing respiratory conditions and also for those who may have contracted COVID-19. The long-term health effects of COVID-19 on the respiratory system are unknown but may be compounded by particulate matter exposure. The public health response to these potentially overlapping environmental conditions continues to focus on the importance of staying inside during extreme wildfire events.

By its very nature, regional air pollution is largely a cumulative impact in that no single project is sufficient in size, by itself, to result in non-attainment of air quality standards. Instead, a project's individual emissions

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

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

contribute to existing cumulative air quality impacts. If a project's contribution to cumulative air quality impacts is considerable, then the project's impact on air quality would be considered significant.

Land use projects typically result in ozone precursor and particulate matter emissions because of increases in vehicle trips, space heating and natural gas combustion, landscape maintenance, and construction activities. For this reason, the air district has established significance thresholds for non-attainment criteria air pollutants, as shown in **Table 13**.

Table 13. Criteria Air Pollutant Significance Thresholds

POLLUTANT	CONSTRUCTION THRESHOLDS	OPERATIONAL THRESHOLDS	
	Average Daily Emissions (lbs./day)	Average Daily Emissions (lbs./day)	Maximum Annual Emissions (tons/year)
Reactive Organic Gases	54	54	10
Nitrogen Oxides	54	54	10
PM_{10}	82 (exhaust)	82	15
$PM_{2.5}$	54 (exhaust)	54	10
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices	Not Applicable	

Source: California Environmental Quality Act Air Quality Guidelines, page 2-2 (Bay Area Air Quality Management District, May 2017).

Ozone Precursors

The significance thresholds for reactive organic gases and nitrogen oxides are based on the stationary source limits in air district regulation 2, rule 2, which requires that any new source that emits criteria air pollutants above the reactive organic gases and nitrogen oxides emissions limit in **Table 13** must offset those emissions. The significance thresholds for particulate matter are based on the emissions limit in the federal New Source Review for stationary sources in nonattainment areas. The air district's California Environmental Quality Act Air Quality Guidelines[53] and supporting materials[54] provide additional evidence to support these thresholds. Projects that would result in criteria air pollutant emissions below these significance thresholds would not result in a cumulatively considerable net increase in non-attainment criteria air pollutants within the air basin.[55] Due to the temporary nature of construction activities, only the average daily thresholds are applicable to construction phase emissions.

***Fugitive Dust*.** Additionally, fugitive dust emissions are typically generated during construction phases. Studies have shown that the application of best management practices at construction sites significantly control fugitive dust and individual measures have been shown to reduce fugitive dust by anywhere from 30 to 90 percent.[56] The air district has identified a number of best management practices to control fugitive dust emissions from construction activities.[57] The City's Construction Dust Control Ordinance (ordinance no.176-08, effective July 30, 2008) requires a number of measures to control fugitive dust and the best management

[53] Bay Area Air Quality Management District, *California Environmental Quality Act Air Quality Guidelines,* May 2017. Available at https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en. Accessed February 5, 2021.

[54] Bay Area Air Quality Management District, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009. Available at https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/revised-draft-ceqa-thresholds-justification-report-oct-2009.pdf?la=en. Accessed February 5, 2021.

[55] Bay Area Air Quality Management District, *CEQA Air Quality Guidelines*, May 2017.

[56] Western Regional Air Partnership. *2006. WRAP Fugitive Dust Handbook.* September 7, 2006. Available at http://www.wrapair.org/forums/dejf/fdh/content/FDHandbook_Rev_06.pdf. Accessed February 5, 2020.

[57] Bay Area Air Quality Management District, *CEQA Air Quality Guidelines*, May 2017.

practices employed in compliance with the Construction Dust Control Ordinance are an effective strategy for controlling construction-related fugitive dust.

Local Health Risks and Hazards

In addition to criteria air pollutants, individual projects may emit toxic air contaminants, which 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 to human health, including carcinogenic effects. Human health effects of toxic air contaminants include birth defects, neurological damage, cancer, and mortality. There are hundreds of different types of toxic air contaminants with varying degrees of toxicity; at a given level of exposure, one toxic air contaminant may pose a hazard that is many times greater than another.

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.[58] Exposures to fine particulate matter ($PM_{2.5}$) are strongly associated with mortality, respiratory diseases, and decreased lung development in children, and other endpoints such as hospitalization for cardiopulmonary disease.[59] In addition to $PM_{2.5}$, diesel particulate matter is also of concern. The California Air Resources Board (California air board) identified diesel particulate matter as a toxic air contaminant in 1998, primarily based on evidence demonstrating cancer effects in humans.[60] The estimated cancer risk from exposure to diesel exhaust is much higher than the risk associated with any other toxic air contaminant routinely measured in the region.

Air pollution does not affect every individual in the population in the same way, and some groups are more sensitive to adverse health effects than others. Land uses such as residences, schools, children's day care centers, hospitals, and nursing and convalescent homes are considered to be the most sensitive to poor air quality because the population groups associated with these uses have increased susceptibility to respiratory distress or, as in the case of residential receptors, their exposure time is greater than that for other land uses. Therefore, these groups are referred to as sensitive receptors. Exposure assessment guidance typically assumes that residences would be exposed to air pollution 24 hours per day, 7 days a week, for 30 years.[61] Therefore, assessments of air pollutant exposure to residents typically result in the greatest adverse health outcomes of all population groups.

In an effort to identify areas of San Francisco most adversely affected by sources of toxic air contaminants, San Francisco partnered with the air district to conduct a citywide health risk assessment based on an inventory and assessment of air pollution and exposures from mobile, stationary, and area sources within San Francisco. Areas with poor air quality—termed the *air pollutant exposure zone*—were identified based on

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

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

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

61 California Office of Environmental Health Hazard Assessment, *Air Toxics Hot Spot Program Risk Assessment Guidelines*, February 2015. Pg. 4-44, 8-6.

health-protective criteria that consider estimated cancer risk, exposures to $PM_{2.5}$, proximity to freeways, and locations with particularly vulnerable populations, as further described below.

Excess Cancer Risk. The air pollutant exposure zone includes areas where modeled cancer risk exceeds 100 incidents per million persons exposed. This criterion is based on U.S. Environmental Protection Agency (U.S. EPA) guidance for conducting air toxic analyses and making risk management decisions at the facility and community-scale level.[62] The 100 per one million excess cancer cases is also consistent with the ambient cancer risk in the most pristine portions of the Bay Area based on air district regional modeling.[63]

Fine Particulate Matter. In April 2011, the U.S. EPA published Policy Assessment for the Particulate Matter Review of the National Ambient Air Quality Standards, "Particulate Matter Policy Assessment." In this document, U.S. EPA staff strongly support a $PM_{2.5}$ standard within the range of 12 to 11 $\mu g/m^3$.[64] The air pollutant exposure zone for San Francisco is based on the health-protective $PM_{2.5}$ standard of 11 $\mu g/m^3$, as supported by the U.S. EPA's Policy Assessment for the Particulate Matter Review of the National Ambient Air Quality Standards, although lowered to 10 $\mu g/m^3$ to account for uncertainty in accurately predicting air pollutant concentrations using emissions modeling programs.

Proximity to Freeways. According to the California air board, studies have shown an association between the proximity of sensitive land uses to freeways and a variety of respiratory symptoms, asthma exacerbations, and decreases in lung function in children. Siting sensitive uses near freeways increases both exposure to air pollution and the potential for adverse health effects. As evidence shows that sensitive uses in an area within a 500-foot buffer of any freeway are at an increased health risk from air pollution,[65] parcels that are within 500 feet of freeways are included in the air pollutant exposure zone.

Health Vulnerable Locations. Based on the air district's evaluation of health vulnerability in the Bay Area, those zip codes (94102, 94103, 94110, 94124, and 94130) in the worst quintile of Bay Area health vulnerability scores as a result of air pollution-related causes were afforded additional protection by lowering the standards for identifying parcels in the air pollutant exposure zone to (1) an excess cancer risk greater than 90 per one million persons exposed, and/or (2) $PM_{2.5}$ concentrations in excess of 9 $\mu g/m^3$.[66]

The above citywide health risk modeling is referenced in the Enhanced Ventilation Required for Urban Infill Sensitive Use Developments (health code), article 38 (ordinance no. 224-14, effective December 8, 2014). The purpose of article 38 is to protect the public health and welfare by establishing an air pollutant exposure zone and imposing an enhanced ventilation requirement for all urban infill sensitive-use development within the zone. The air pollutant exposure zone is also referenced in the San Francisco Environment Code section 25, known as the Clean Construction Ordinance (ordinance no. 28-15, effective April 19, 2015). The purpose of the Clean Construction Ordinance is to protect the public health, safety, and welfare by requiring

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62 Bay Area Air Quality Management District, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009, page 67.

63 Bay Area Air Quality Management District, *CEQA Air Quality Guidelines,* May 2017, page D-43.

64 U.S. Environmental Protection Agency, *Policy Assessment for the Review of the Particulate Matter National Ambient Air Quality Standards.* April 2011. https://www3.epa.gov/ttn/naaqs/standards/pm/data/20110419pmpafinal.pdf, accessed February 5, 2021. The U.S. EPA published a new policy assessment in January 2020. The policy assessment did not include recommendations to change the standards for particulate matter. https://www.epa.gov/sites/production/files/2020-01/documents/final_policy_assessment_for_the_review_of_the_pm_naaqs_01-2020.pdf, accessed February 5, 2021.

65 California Air Resources Board, *Air Quality and Land Use Handbook: A Community Health Perspective.* April 2005. http://www.arb.ca.gov/ch/landuse.htm, accessed February 5, 2021

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

contractors on city public works projects to reduce diesel and other fine particulate matter emissions generated by construction activities. The project site is not located within the air pollutant exposure zone and health code article 38 does not apply to the proposed project. In addition, projects within the air pollutant exposure zone require special consideration to determine whether the project's activities would add a substantial amount of emissions to areas already adversely affected by poor air quality.

IMPACT ANALYSIS

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

The most recently adopted air quality plan for the air basin is the air district's 2017 clean air plan.[67] The clean air plan is a road map that demonstrates how the Bay Area will achieve compliance with the state ozone standards and how the region will reduce the transport of ozone and ozone precursors to neighboring air basins. In determining consistency with the clean air plan, this analysis considers whether the proposed project would:

- Support the primary goals of the plan;
- Include applicable control measures from the plan; and
- Avoid disrupting or hindering implementation of control measures identified in the plan.

The primary goals of the clean air plan are to:

- Protect air quality and health at the regional and local scale;
- Eliminate disparities among Bay Area communities in cancer health risk from toxic air contaminants; and
- Protect the climate by reducing greenhouse gas emissions.

To meet the primary goals, the plan recommends 85 specific control measures and actions. These control measures are grouped into various categories and include stationary and area source measures, mobile source measures, transportation control measures, land use measures, and energy and climate measures. To the extent that the air district has regulatory authority over an emissions source generated by the proposed project, the control measures may be requirements of the proposed project. Other measures in the plan not within the air district's regulatory authority may be advisory or are otherwise not specifically applicable to land use development projects.

The clean air plan recognizes that to a great extent, community design dictates individual travel mode, and that a key long-term control strategy to reduce emissions of criteria pollutants, air toxics, and greenhouse gases from motor vehicles is to channel future Bay Area growth into vibrant urban communities where goods and services are close at hand, and people have a range of viable transportation options.

The control measures most applicable to the proposed project are transportation control measures and energy and climate control measures. The proposed project's impact with respect to greenhouse gases (GHGs) are discussed in Section E.9, Greenhouse Gas Emissions, which demonstrates that the proposed project would comply with the applicable provisions of the City's Greenhouse Gas Reduction Strategy.

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[67] Bay Area Air Quality Management District, *Spare the Air Cool the Climate, Final 2017 Clean Air Plan,* April 2017. https://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en, accessed February 5, 2021.

The proposed project is not a facility typically associated with community growth. Instead, the fire-training facility would consolidate and replace two existing similar training facilities. The modes of transportation to and from the proposed project are expected to remain the same as those that occur at the existing facilities (i.e., a predominant use of personal and vendor vehicles). Although the facility would include 10 class 1 and 4 class 2 spaces for bicycle parking, it is expected that most of the trips associated with the proposed project construction and operations would be private vehicles.

The proposed project's anticipated 371 daily miles net decrease in VMT would result in a small decrease in regional air pollutant emissions due to the consolidation of two existing training facilities into one location. Transportation control measures that are identified in the clean air plan are implemented by the general plan and the planning code (for example, through the City's Transit-First Policy, transportation demand management program requirements, and transit impact development fees). Therefore, the proposed project would include applicable control measures identified in the clean air plan to meet the clean air plan's primary goals.

Example projects that could cause the disruption or delay of the clean air plan control measures are projects that would preclude the extension of a transit line or bike path, or projects that propose excessive parking beyond parking requirements. The proposed project would not preclude the extension of a transit line or a bike path or any other transit improvement, and thus would not disrupt or hinder implementation of the clean air plan's control measures.

The proposed project would also incorporate measures included in the buildings and energy strategies described in the clean air plan, such as use of energy and water efficiency and compliance with and compliance with the San Francisco Environment Code, chapter 7, section 706 (Green Building Requirements for City Buildings: Renewable Energy).

For the reasons described above, the proposed project would not conflict with or obstruct implementation of the clean air plan, and this impact would be ***less than significant***.

Impact AQ-2: The proposed project's construction activities would generate fugitive dust and criteria air pollutants, but would not result in a cumulatively considerable net increase of non-attainment criteria air pollutants within the air basin. (Less than Significant)

Construction activities (short-term) typically result in emissions of ozone precursors and particulate matter in the form of dust (fugitive dust) and exhaust (e.g., vehicle tailpipe emissions). Emissions of ozone precursors and particular matter are primarily a result of the combustion of fuel from on-road and off-road vehicles. However, reactive organic gases are also emitted from activities that involve painting, other types of architectural coatings, or asphalt paving. The proposed project's construction activities would involve the following phases:

- Site preparation
- Grading
- Building construction
- Architectural coating
- Paving

Typical heavy construction equipment would be used during site preparation and grading. Cranes and smaller equipment would be used during building construction. During the proposed project's

approximately 30-month construction period, construction activities would have the potential to result in emissions of ozone precursors and particulate matter, as discussed below.

Fugitive Dust

Proposed project-related excavation, grading, and other construction activities may cause wind-blown dust that could contribute particulate matter into the local atmosphere. Depending on exposure, adverse health effects can occur due to this particulate matter in general and due to specific contaminants, such as lead or asbestos that may be constituents of soil. The current health burden of particulate matter demands that, where possible, public agencies take feasible available actions to reduce sources of particulate matter exposure.

In response, the San Francisco Board of Supervisors approved the Construction Dust Control Ordinance (ordinance 176-08, effective July 30, 2008) with the intent of reducing the quantity of dust generated during site preparation, demolition, and construction work in order to protect the health of the general public and of on-site workers, minimize public nuisance complaints, and to avoid orders to stop work by the San Francisco Department of Building Inspection.

The Construction Dust Control Ordinance requires that all site preparation work, demolition, or other construction activities within San Francisco that have the potential to create dust or to expose or disturb more than 10 cubic yards or 500 square feet of soil comply with specified dust control measures whether or not the activity requires a permit from the San Francisco Department of Building Inspection.[68]

For projects over one-half acre, such as the proposed project, the dust control ordinance requires that the project sponsor submit a dust control plan for approval by the San Francisco Department of Public Health.[69] The site-specific dust control plan would require the implementation of additional dust control measures such as installation of dust curtains and windbreaks, independent third-party inspections and monitoring, provision of a public complaint hotline, and suspension of construction during high wind conditions.

Based upon mapping conducted by the U.S. Geological Survey, the project site may be underlain by serpentine rock.[70] Serpentinite rock commonly contains naturally occurring chrysotile asbestos or tremolite-actinolite, a fibrous mineral that can be hazardous to human health if airborne emissions are inhaled. Proposed project-related excavation, grading, and other construction activities could release naturally occurring asbestos into the atmosphere. On-site workers and the public could be exposed to airborne asbestos unless appropriate control measures are implemented. To address health concerns from exposure to naturally occurring asbestos, the California Air Resources Board enacted an Asbestos Airborne Toxic Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations in July 2001. The requirements established by the Asbestos ATCM are contained in California Code of Regulations Title 17, section 931058, and are enforced by the air district. The proposed project would be required to comply with the requirements of the Asbestos ATCM, which include measures to control fugitive dust from construction activities, in addition to the requirements of the Construction Dust Control Ordinance discussed above.

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68 The director of the San Francisco Department of Building Inspection may waive this requirement for activities on sites less than one-half acre that are unlikely to result in any visible wind-blown dust.

69 The San Francisco Department of Building Inspection will not issue a building permit without written notification from the director of public health that the applicant has a site-specific dust control plan unless the director waives the requirement. Interior-only tenant improvement projects that are over one-half acre in size that will not produce exterior visible dust are exempt from the site-specific dust control plan requirement.

70 San Francisco Planning Department, GIS Layer, "Areas Affected by Serpentine Rocks." Created February 25, 2010 from U.S. Geological Survey and San Francisco Department of Public Health data.

Section E.18, Hazards and Hazardous Materials, provides the analysis of the health risks associated with naturally occurring asbestos.

Compliance with the regulations and procedures set forth by the dust control ordinance would ensure that potential dust-related air quality impacts would be reduced to ***less than significant***.

Criteria Air Pollutants

As discussed above, construction activities would result in emissions of criteria air pollutants from the use of off- and on-road vehicles and equipment and other construction activities.

A quantitative analysis of the proposed project's construction criteria air pollutant emissions was conducted to determine whether the proposed project may exceed the criteria air pollutant significance thresholds in **Table 14**. Construction-related criteria air pollutants generated by the proposed project were quantified using the California Emissions Estimator Model (CalEEMod, version 2020.4.0) and provided within an air quality technical memorandum (memorandum).[71] The model was developed, including default data (e.g., emission factors, meteorology, etc.), in collaboration with air district staff. Default assumptions were used where project-specific information was unknown. For projects located outside the air pollutant exposure zone, like the proposed project, the Clean Construction Ordinance requires equipment to either meet or exceed Tier 2 emissions standards for off-road engines or operate with the most effective air resources board verified diesel emission control strategy. The default fleet mix in CalEEMod reflects the typical construction fleet, which, on average, exceeds Tier 2 emission standards. The modeling included an assumption of the default fleet, which would satisfy the requirements of the Clean Construction Ordinance.

Construction of the proposed project would occur over approximately 30 months. Emissions were converted from tons/year to lbs/day using the estimated construction duration (working days) in each year (148 days in 2024, 252 days in 2025, and 252 days in 2026). The memorandum provides additional assumptions, methodology for calculating criteria air pollutants, and detailed results by construction phase. **Table 14** presents construction-related emissions.

Table 14. Average Daily Project Construction Emissions

AVERAGE DAILY CONSTRUCTION EMISSONS (YEAR)	POLLUTANT EMISSIONS (AVERAGE POUNDS PER DAY)			
	Reactive Organic Gases	Nitrogen Oxides	Exhaust PM_{10}	Exhaust $PM_{2.5}$
2024	1.7	17.6	0.66	0.61
2025	4.8	38.6	1.5	1.35
2026	17.1	39.8	1.6	1.48
Significance Threshold	54	54	82	54

Source: Bay Area Air Quality Management District (2017); WSP (September 2021).

[71] WSP. *Air Quality Technical Memorandum: 1236 Carroll Avenue Project, San Francisco, California*. November 2021.

As shown in **Table 14**, project construction emissions would be below the threshold of significance for reactive organic gases, nitrogen oxides, $PM_{2.5}$, and PM_{10} emissions. Therefore, the proposed project would not exceed any of the significance thresholds for criteria air pollutants and would result in a ***less-than-significant*** impact with respect to criteria air pollutant emissions during construction. No mitigation would be required.

Impact AQ-3: During project operations, the proposed project would result in emissions of criteria air pollutants, but not at levels that would result in a cumulatively considerable net increase in non-attainment criteria air pollutants. (Less than Significant)

The proposed project would generate criteria air pollutant emissions associated with new vehicle trips and emissions from live-fire exercises (stationary source), ventilation training exercises, on-site fire-apparatus driving practice (mobile source), energy use, and testing of an emergency diesel generator (stationary source). Operational-related criteria air pollutants generated by the proposed project were also quantified using CalEEMod and provided within the memorandum. Default assumptions were used where project-specific information was unknown. Refer to the memorandum for detailed assumptions, methodology, and results.

Area, energy, mobile (staff and visitor commuting) and stationary (emergency generator) source emissions were produced from CalEEMod based on land use category of Government Office Building. The proposed project would comply with the Green Building Requirements for City Buildings: Renewable Energy (San Francisco Environment Code, chapter 7, section 706), which sets requirements for the use of renewable energy, energy efficiency, and a target for zero net annual site energy consumption. The energy analysis from CalEEMod assumes the proposed project would use electricity from PG&E's service area, which represents a conservative assumption in comparison with the use of renewable energy during operations.

Unique project emissions (live-fire, ventilation training and on-site mobile source driving practice) were estimated from training schedules, fuel consumed and applicable emission factors. Emissions calculations from live-fire training activities assume that training props would be equipped with exhaust capture systems, as described in Section A.2, Proposed Project Characteristics. **Table 15** shows the average daily and maximum annual emissions associated with operation of the proposed project. **Table 15** also includes the thresholds of significance for criteria air pollutants.

Table 15. Summary of Operational Criteria Air Pollutant Emissions

	REACTIVE ORGANIC GASES	NITROGEN OXIDES	PM_{10}	$PM_{2.5}$
Pounds per Day				
Area Source Emissions[1]	6.99	0.0001	5.5E-05	5.5E-05
Energy Source Emissions[1]	0.16	1.48	0.11	0.11
Mobile Source Emissions[1]	0.73	0.84	0.01	0.01
Stationary Source Emissions[1]	0.001	0.33	0.007	0.007
On-site fire-apparatus mobile sources	0.35	10.6	0.07	0.07
On-site live-fire emissions[2]	7.3	5.8	0.65	0.65
On-site ventilation prop emissions	1.8	0.38	1.63	1.63
On-site off-road equipment (saws)	2.5	0.05	0.41	0.41
Total Project Maximum Daily Emissions (lbs/day)	**19.8**	**19.46**	**2.89**	**2.89**
Significance Threshold (lbs/day)	54.0	54.0	82.0	54.0
Tons per Year				
Area Source Emissions[1]	1.28	<0.001	<0.001	<0.001
Energy Source Emissions[1]	0.03	0.27	0.02	0.02
Mobile Source Emissions[1]	0.13	0.15	0.002	0.002
Stationary Source Emissions[1]	0.0002	0.06	0.001	0.001
On-site fire-apparatus mobile sources	0.06	1.9	0.01	0.01
On-site live-fire emissions	0.19	0.11	0.02	0.02
On-site ventilation prop emissions	0.33	0.07	0.29	0.29
On-site off-road equipment (saws)	0.45	0.01	0.07	0.07
Total Project Annual Emissions (tpy)	**2.47**	**2.57**	**0.41**	**0.41**
Significance Threshold (tpy)	10.0	10.0	15.0	10.0

Source: Bay Area Air Quality Management District (2017); WSP (September 2021).
lbs/day = pounds per day
tpy = tons per year

1 From CalEEMod for general "Government Office Building" land use category.

2 Includes an estimated 90 percent reduction in particulate matter from scrubber device on the training tower, commercial prop, condominium/apartment prop, Victorian House, and container prop. The greatest source of NOx is from the live-fire exercises that utilize propane, which represents the worst case. ForPM_{10} and $PM_{2.5}$, props using wood are worst case. Refer to Appendix F of the air quality technical memorandum for a description of exhaust capture systems.

As shown in **Table 15**, the proposed project would not exceed any of the significance thresholds for criteria air pollutants. With respect to criteria air pollutants, this impact would be ***less than significant***, and no mitigation would be required.

Impact AQ-4: The proposed project's construction and operational activities would generate toxic air contaminants, including diesel particulate matter, that would expose sensitive receptors to substantial pollutant concentrations. (Less than Significant with Mitigation)

As discussed above, the project site is not within an air pollutant exposure zone; therefore, existing background health risks at the project site are not substantial. However, the project site is adjacent to an area that already experiences poor air quality, and project construction activities would temporarily generate additional air pollution, affecting nearby sensitive receptors. A health risk assessment was conducted for the proposed project to evaluate the potential health risks to nearby sensitive receptors located in the air pollutant exposure zone that would result from implementing the proposed project.

The proposed project would generate toxic air contaminants during construction from the use of diesel-powered construction equipment, and would generate toxic air contaminants during operations from increased vehicle trips, live-fire training activities, and the use of a diesel-powered generator. The construction and operational health risks from the proposed project's emissions are further analyzed below.

Property use within the 1,000-foot area surrounding the project site is residential, commercial, and industrial. As described in the memorandum,[72] all potentially sensitive receptors within the 1,000-foot area surrounding the project site are residential receptors.

Sensitive receptor locations within the nearby air pollutant exposure zone (generally to the south and west of the project site) cover residential locations. A portion of the air pollutant exposure zone receptor group is located at 1313 Armstrong Avenue, which is also a project included in the cumulative impact analysis. Additionally, sensitive receptor locations are in the 1,000-foot study area closer to the proposed project site but outside the air pollutant exposure zone. Those receptors are residences in the area south of Carroll Avenue (Alice Griffith Housing Project), generally east of the project site.

A health risk assessment was conducted for the proposed project to determine if construction and/or operation would substantially contribute to existing health risks at the off-site sensitive receptors described above. Consistent with the citywide health risk assessment, the analysis performed focuses on diesel particulate matter and $PM_{2.5}$ because these, more so than other types of air pollutants, pose significant health impacts at the local level. An assessment of cancer risk associated with wood smoke was also included due to the live-fire exercises that are part of the proposed project. The air quality technical memorandum provides a detailed discussion of the methods used for these analyses.[73]

Near-field air dispersion modeling (i.e., the flow of air pollutants, its interaction with on-site building obstacles and movement off-site into the surrounding area) of diesel particulate matter and $PM_{2.5}$ from project construction and operation was conducted to represent the highest expected impacts from the proposed project on sensitive receptors under the following scenarios:

- **Scenario 1:** chronic 30-year off-site residential exposure to dispersed emissions commencing at the start of proposed facility construction and continuing through facility operation. Under Scenario 1, residential risks from construction emissions would be added to residential risks associated with operational emissions from a combined total of 30 years of exposure.

[72] WSP. *Air Quality Technical Memorandum: 1236 Carroll Avenue Project, San Francisco, California*. November 2021.
[73] WSP. *Air Quality Technical Memorandum: 1236 Carroll Avenue Project, San Francisco, California*. November 2021.

- **Scenario 2:** chronic 30-year off-site residential exposure to annual average exposure concentrations commencing at the time of facility operation. Scenario 2 evaluates the impact on sensitive receptors from 30 years of exposure to operational emissions only (not construction of the proposed project).

The excess lifetime cancer risk and $PM_{2.5}$ concentrations from project construction and operational emissions were added to the existing health risks from the draft 2020 citywide health risk assessment database at each receptor point to determine the existing plus project cancer risk and $PM_{2.5}$ concentration at the proposed project's maximally exposed sensitive receptor. Potential health risks on sensitive receptors identified within and outside the air pollutant exposure zone are analyzed based on the thresholds of significance shown in **Table 16**.

Table 16. Proposed Project Health Risk Assessment Thresholds of Significance

AFFECTED SENSITIVE RECEPTORS	THRESHOLDS FOR CONSTRUCTION AND OPERATION	
	$PM_{2.5}$ ($\mu g/m^3$)	**Excess Cancer Risk (cases per one million population)**
Criteria for sensitive receptor located within the APEZ – Outside Health Vulnerability zip code[a] – Within Health Vulnerability zip code[b]	 10.0 9.0	 100.0 90.0
Project contributions to sensitive receptor locations within the APEZ	0.2	7.0
Project contributions to sensitive receptor locations not within the APEZ[a]	0.3	10.0

APEZ = Air Pollutant Exposure Zone

$PM_{2.5}$ = particulate matter of 2.5 microns in diameter or less; $\mu g/m^3$ = micrograms per cubic meter

[a] From Bay Area Air Quality Management District, *California Environmental Quality Act Guidelines Update, Proposed Air Quality CEQA Thresholds of Significance*, May 2010, page 2-2.

[b] From San Francisco Department of Public Health, Environmental Health, Planning, *Memorandum to File regarding 2014 Air Pollutant Exposure Zone Map dated April 9, 2014.*

[c] A 0.2 $\mu g/m^3$ increase in $PM_{2.5}$ would result in a 0.28 percent increase in non-injury mortality or an increase of about 21 excess deaths per 1,000,000 population per year from non-injury causes in San Francisco. This information is based on Jerrett M. et al., Spatial Analysis of Air Pollution and Mortality in Los Angeles, Epidemiology, 16:727-736, 2005. The excess cancer risk has been proportionally reduced to result in a significance criterion of 7 per million persons exposed.

Results of the exposure assessment for both scenarios mentioned above for off-site receptors within and outside the air pollutant exposure zone are presented in **Table 17** and **Table 18**, respectively.

As shown in **Table 17**, the unmitigated excess cancer risk and $PM_{2.5}$ concentration that would occur at the off-site maximally exposed individual resident within the air pollutant exposure zone from existing background sources and construction and operation of the proposed project are 80.6 in a million and 7.83 $\mu g/m^3$, respectively. Results are similar for Scenarios 1 and 2. The unmitigated contribution to existing health risks at the off-site exposed individual resident within the air pollutant exposure zone from construction and operation of the proposed project would result in a net increase in $PM_{2.5}$ of 0.01 $\mu g/m^3$, which is below the threshold of significance of 0.2 $\mu g/m^3$. The net increase in cancer risk from proposed project construction and operation would be 1.2 in a million, which does not exceed the significance threshold of 7.0 in a million and represents a less-than-significant impact for nearby receptors located within the nearby air pollutant exposure zone.

Table 17. Existing Plus Project Lifetime Cancer Risk and $PM_{2.5}$ Concentration at Maximally Exposed Off-Site Receptors within the Air Pollutant Exposure Zone

Project Lifetime Scenario	Source	Excess Cancer Risk (in a million)	PM2.5 Concentration (µg/m³)
		Within APEZ[c]	Within APEZ[c]
Scenario 1[a]	Background Health Risks and $PM_{2.5}$ concentration (Citywide Health Risk Assessment)	79.4	7.8
	Project Contribution	**1.2**	**0.03**
	Existing Plus Project	80.6	7.83
	Project Contribution Threshold of Significance	7.0	0.2
	Above Project Construction Threshold?	**No**	**No**
Scenario 2[b]	Background Health Risks and $PM_{2.5}$ concentration (Citywide Health Risk Assessment)	79.4	7.8
	Project Contribution	**0.9**	**0.03**
	Existing Plus Project	80.3	7.83
	Project Contribution Threshold of Significance	7.0	0.2
	Above Project Contribution Threshold?	**No**	**No**

APEZ = air pollutant exposure zone; PM2.5 = fine particulate matter; µg/m³ = micrograms per cubic meter.

a) Scenario 1 corresponds to chronic 30-year off-site residential exposure to dispersed emissions commencing at the start of proposed facility construction and continuing through facility operation.

b) Scenario 2 corresponds to chronic 30-year off-site residential exposure to annual average exposure concentrations commencing at the time of facility operation.

c) Receptor locations within the nearby APEZ (generally to the west of the project site) cover residential and non-residential (commercial/industrial) locations. A portion of the APEZ receptor group is located on property of a known cumulative project (1313 Armstrong Avenue). Location of maximum at 553700, 4175140 (UTM meters)

As shown in **Table 18**, the unmitigated excess cancer risk and highest $PM_{2.5}$ concentration from existing background sources and construction and operation of the proposed project that would occur outside of the air pollutant exposure zone is at the corner of Carroll Avenue and Giants Drive (Alice Griffith Housing Project), are 32.4 in a million and 8.32 µg/m³ under Scenario 1 and 31.4 in a million and 8.33 µg/m³ under Scenario 2, respectively. Since the area where these sensitive receptors are located (south of Carroll Avenue) is in a health vulnerable zip code, the criteria for evaluating potential impacts are first whether the proposed project would be brought into the air pollutant exposure zone, which would require a cancer risk of 90 in a million and particulate matter concentration of 9.0 µg/m³, and second, if the project would then exceed the applicable thresholds. In both scenarios of analysis, the proposed project would not bring the sensitive receptor area into the air pollutant exposure zone. However, proper design and implementation of the scrubbers to meet specific performance criteria cannot be guaranteed. As such, the impact is considered ***significant***. **Mitigation Measure M-AQ-4: Design and Maintenance Standards for Exhaust Capture Control Systems for Live-Fire Training Operations** would require the project sponsor to design exhaust control systems units with proper sizing, develop a standard operating procedure for use of particulate matter removal and control devices (scrubbers), ensure that these air pollution control systems are properly maintained at the correct intervals, document the amount of wood burned during live-fire exercises, and have such documentation available to the planning department upon request.

Table 18. Existing Plus Project Lifetime Cancer Risk and $PM_{2.5}$ Concentration at Maximally Exposed Off-Site Receptors Outside the Air Pollutant Exposure Zone

Project Lifetime Scenario	Source	Excess Cancer Risk (in a million)	$PM_{2.5}$ Concentration ($\mu g/m^3$)
		Outside APEZ[c]	**Outside APEZ[c]**
Scenario 1[a]	Background Health Risks and $PM_{2.5}$ concentration (citywide health risk assessment)	27.4	8.21
	Project Contribution	**5**	**0.11**
	Existing Plus Project	**32.4**	**8.32**
	Criteria for sensitive receptor located within the APEZ (within Health Vulnerability zip code)	**90.0**	**9.0**
	Above Project Contribution Threshold?	**No**	**No**
Scenario 2[b]	Background Health Risks and $PM_{2.5}$ concentration (citywide health risk assessment)	27.4	8.21
	Project Contribution	**4**	**0.12**
	Existing Plus Project	**31.4**	**8.33**
	Criteria for sensitive receptor located within the APEZ (within Health Vulnerability zip code)	**90.0**	**9.0**
	Above Project Contribution Threshold?	**No**	**No**

APEZ= Air pollutant exposure zone; $PM_{2.5}$ = fine particulate matter; $\mu g/m^3$ = micrograms per cubic meter.

a) Scenario 1 corresponds to chronic 30-year off-site residential exposure to dispersed emissions commencing at the start of proposed facility construction and continuing through facility operation.

b) Scenario 2 corresponds to chronic 30-year off-site residential exposure to annual average exposure concentrations commencing at the time of facility operation.

c) Sensitive receptor locations outside of the APEZ are residences in the area south of Carroll Avenue. Receptors in the 1,000-foot study area outside of the APEZ generally east and north of the project location are located in commercial/industrial, vacant land or open water areas. Location of maximum is at the corner of Carroll Avenue and Giants Drive, at 554200, 4174940 (UTM meters)

Mitigation Measure M-AQ-4: Design and Maintenance Standards for Exhaust Capture Control Systems for Live-Fire Training Operations

Prior to approval of a building permit permitting construction to occur, the project sponsor shall submit a plan to the Environmental Review Officer (ERO) or the officer's designee demonstrating with reasonable certainty that the proposed live-fire prop structures include properly designed exhaust capture control systems (i.e., scrubber systems and exhaust stack attached in an outer structure) to reduce criteria air pollutants and toxic air contaminants emissions during project operations. The plan shall detail how the following requirements are met:

- The following live-fire structures shall be equipped with an exhaust capture control system that consists of an outer structure to capture and direct smoke through the prop, remove air pollutants through a scrubber system, then exit to an exhaust stack:
  - Training tower
  - Condominium/apartment
  - Commercial structure
  - Victorian house
  - Container structure

- Scrubber systems shall be used in the live-fire training area and shall be designed to meet a minimum performance standard of removal efficiency of 90 percent of particulate matter. Sizing will be developed by design engineers with knowledge of exhaust capture control systems during the design phase of the proposed project.
- Scrubber systems shall be ready for use during the preparation phase of the live-fire training evolution prior to smoke production to ensure these systems are at their normal operating condition when live-fire training starts. The preparation phase may entail establishing minimum air flow to have proper velocity in the scrubber and making sure the scrubber liquid system is operational for efficient particle removal.
- Scrubber systems, including scrubbing solution and accessories, shall be properly maintained at the correct maintenance intervals (which will be listed in the plan), and follow manufacturer's recommendations to ensure consistent contaminant removal efficiency throughout project perpetuity.
- The project sponsor shall prepare and submit to the ERO the operational procedures for operation of each live-fire prop.
- The project sponsor shall keep and maintain documentation on the installation and maintenance of the exhaust control systems, the amount of wood pallets and Excelsior wood fiber burned (in pounds) and the number of live-fire training exercises conducted per year, and submit such documentation to the Planning Department within 60 days of request. Should documentation indicate that live-fire exercises are not being conducted in accordance with the air quality analysis assumptions, additional air quality analysis may be required. If necessary, additional control measures shall be placed on the project to reduce air quality effects from live fires.

With implementation of Mitigation Measure M-AQ-4, health risk impacts would be ***less than significant with mitigation***.

Impact AQ-5: The proposed project would not create objectionable odors that would affect a substantial number of people. (Less than Significant with Mitigation)

Typical odor sources of concern include wastewater treatment plants, sanitary landfills, transfer stations, composting facilities, petroleum refineries, asphalt batch plants, chemical manufacturing facilities, fiberglass manufacturing facilities, auto body shops, rendering plants, and coffee roasting facilities. The proposed project would create odors during construction and operations.

During construction, diesel exhaust from construction equipment and paving and architectural coating activities would generate some odors. However, construction-related odors would be temporary and would not persist upon project completion.

During the proposed project operations, each live-fire training event would create odors from the combustion of 192 pounds of a combination of wood and hay. Propane would also be used as fuel during live-fire training exercises; however, propane is clean-burning, meaning that odors disappear after combustion. The smoke from wood burning is made up of a complex mixture of gases and fine particles.[74] Odors would be directed toward vacant land away from sensitive receptors due to the prevailing wind

[74] U.S. Environmental Protection Agency (U.S. EPA), Wood Smoke and Your Health, 2016, https://www.epa.gov/burnwise/wood-smoke-and-your-health, accessed September 23, 2021.

pattern at the proposed project area (west to east direction). The project sponsor would also be required to comply with the air district regulation 5, section 111.3, which establishes special conditions for allowable fires, and prohibits the ignition of materials or fuel when the wind velocity is less than 5 miles per hour, or when the wind direction at the site shall be such that the direction of smoke drift is toward a populated area in order to minimize local nuisances caused by smoke and particulate fallouts.

Exposure to smoke and odors from wood and hay combustion from live-fire training exercises would be controlled by the implementation of exhaust capture and control systems; however, proper design and implementation of the scrubbers to meet specific performance criteria cannot be guaranteed. Therefore, smoke generated during live-fire training operations has the potential to be objectionable and affect nearest sensitive receptors. As such, impacts during operations would be ***significant***. With implementation of **Mitigation Measure M-AQ-4, Design and Maintenance Standards for Exhaust Capture Control Systems for Live-Fire Training Operations,** combustion emissions resulting in odor sources during live-fire training operations are expected to be controlled, and this impact would be ***less than significant with mitigation***.

CUMULATIVE AIR QUALITY IMPACTS

As discussed above, regional air pollution is by its very nature a cumulative impact. Emissions from past, present, and future projects contribute to the region's adverse air quality on a cumulative basis. No single project by itself would be sufficient in size to result in regional non-attainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulative adverse air quality impacts.[75] The project-level thresholds for criteria air pollutants are based on levels below which new sources are not anticipated to result in a considerable net increase in non-attainment criteria air pollutants. Therefore, cumulative criteria air pollutant analysis is presented in Impacts AQ-2 and AQ-3. The remainder of this cumulative air quality analysis addresses cumulative health risks and odors to sensitive receptors.

Impact C-AQ-1: The proposed project, in combination with cumulative projects, would contribute to cumulative air quality impacts. (Less than Significant with Mitigation)

The project site is not located within an air pollutant exposure zone; however, nearby sensitive receptors located west of the project site already experience poor air quality. The following cumulative projects overlap with the 1,000-foot air quality study area defined for the proposed project and are likely to involve off-road construction equipment and/or other toxic air contaminant emissions sources:

- 1353 Yosemite Avenue / 2350 Ingalls Street / 1401 Yosemite Avenue: 20,000 square feet of production, distribution, and repair.
- 1313 Armstrong Avenue: 300,000-square-foot production, distribution, and repair facility.
- Yosemite Slough Wetland Restoration Project within Candlestick Point State Recreation Area: Phase 3: open space/wetlands.
- 1400 Carroll Ave: 20,000 square feet of warehouse.
- CPHPS Phase II: 693-acre residential/mixed use/retail development and park land project.

Qualitatively, the magnitude of construction and operation emissions generally corresponds to the size of the development with greater emissions from larger projects. Typical emissions generated by these projects are primarily mobile source emissions from personal vehicles and delivery trucks during construction and

[75] Bay Area Air Quality Management District, *CEQA Air Quality Guidelines,* May 2017, page 2-1.

operation. The Yosemite Slough Wetland Restoration project may generate emissions during construction activity; however, during operation only minor mobile source emissions would occur from visitor traffic.

Emissions from construction and operation of 1353 Yosemite Avenue, 1400 Carroll Avenue, and Yosemite Slough would be expected to be minor and not contribute to a cumulative impact. The 1313 Armstrong Avenue project may create a substantial quantity of construction emissions that could increase criteria air pollutant and toxic air contaminant emissions; however, the timeline of the project is unknown. In the event the construction schedule of the 1313 Armstrong Avenue project overlaps with the proposed project construction activities, it is expected that both projects would be subject to the same regulatory requirements to control emissions from construction equipment.

Construction of the CPHPS Phase II project would include the northern portion of the Alice Griffith Housing Project development across Carroll Avenue from this proposed project. Addendum 5 to the 2010 EIR indicates that construction adjacent to the proposed project could occur between 2025 and 2031;[76] however, given the construction schedule at that Alice Griffith for the Candlestick project, it is unlikely that there will be any sensitive receptors at Alice Griffiths during construction of the fire training facility project. Construction of the CPHPS Phase II project would require the implementation of the same air quality regulatory requirements described for the proposed project, in addition to mitigation measures that require the implementation of emission control devices. In particular, mitigation measures require that construction equipment used in the Alice Griffith parcels utilize equipment which meets the U.S. EPA Tier 2 standards outfitted with California air board Level 3 VDECS for particulate matter control (or equivalent) throughout the entire duration of construction activities on those parcels. Moreover, the revised construction schedule for the CPHPS Phase II project resulted in cleaner off-road construction equipment than modeled for the 2010 Project and moved more equipment away from the perimeter of the site. In particular, mitigation measures require that construction equipment used in the Alice Griffith parcels utilize equipment which meets the U.S. EPA Tier 2 standards outfitted with California air board Level 3 VDECS for particulate matter control (or equivalent) throughout the entire duration of construction activities on those parcels.

Addendum 5 to the CPHPS Phase II project 2010 Final Environmental Impact Report states that construction impacts at Candlestick Point were found to not exceed Bay Area Air Quality Management District thresholds of significance for cancer risk or chronic noncancer health indices after mitigation. Risk was assessed at off-site sensitive receptors, workers, and potential on-site residents at the Alice Griffith parcels. The maximum exposed individual cancer risk from this project inside Alice Griffith would be 4.5 in 1 million, while the maximum chronic noncancer risk would be 0.02, below the applicable significance thresholds of 10 in 1 million and 1.0, respectively. However, this value was obtained using outdated guidance from the Office of Environmental Health Hazards Assessment (OEHAA). OEHAA's website describes that converting from the old methodology to the new methodology could have a cancer risk up to three times higher.[77]

The potential for the proposed project to contribute to cumulative air quality impacts is analyzed based on whether the addition of the CPHPS Phase II project and other nearby projects would bring the area into the air pollutant exposure zone. **Table 19** shows the addition of health risk assessment results from the potential

[76] Office of Community Investment & Infrastructure. 2018. Addendum 5 to the CPHPS Phase II project 2010 Final Environmental Impact Report. Appendix F Construction Resource Information.

[77] Office of Environmental Health Hazards Assessment. 2021. Frequently Asked Questions Related to the OEHHA Guidelines. https://ww2.arb.ca.gov/resources/documents/frequently-asked-questions-related-oehha-guidelines.

concurrent construction of the project (unmitigated cancer risk and $PM_{2.5}$ concentrations) and the CPHPS Phase II project.

Table 19. Cumulative Lifetime Cancer Risk and $PM_{2.5}$ Concentrations at Maximally Exposed Receptor (Alice Griffith Housing Project – South of Carroll Avenue)

Source	Cancer Risk (in 1 million)	$PM_{2.5}$ concentration ($\mu g/m^3$)
Background Health Risks and $PM_{2.5}$ concentration (citywide health risk assessment) [a]	27.4	8.21
Candlestick Point–Hunters Point Shipyard Phase II Project contribution (adjusted to new methodology) [b]	13.5	0.02
Proposed Project contribution [c]	5	0.12
Background Plus Cumulative Projects	**45.9**	**8.35**
Criteria for sensitive receptor located within the APEZ (within Health Vulnerability zip code)	**90.0**	**9.0**
Above Criteria?	**No**	**No**

Key: APEZ= Air pollutant exposure zone; $PM_{2.5}$ = fine particulate matter; $\mu g/m^3$ = micrograms per cubic meter.

Notes:

[a] Background cancer risk and PM2.5 concentrations were estimated from the draft 2020 citywide health risk assessment database.

[b] The 2010 FEIR stated that the maximum exposed individual cancer risk from this project inside Alice Griffith would be 4.5 in one million1. However, this value was obtained using outdated guidance from the Office of Environmental Health Hazards Assessment (OEHAA). OEHAA's website describes that converting from the old methodology to the new methodology could have a cancer risk up to three times higher.

[c] Cancer risk from Scenario 1, unmitigated. $PM_{2.5}$ concentration from Scenario 2, unmitigated.

As shown in **Table 19**, the proposed project in combination with the CPHPS Phase II project would not exceed the lifetime cancer risk during concurrent construction and would not bring the sensitive receptors area into the air pollutant exposure zone. Since the area where these sensitive receptors are located (south of Carroll Avenue) is in a health vulnerable zip code, the criteria for evaluating potential impacts are first whether the proposed project would be brought into the air pollutant exposure zone, which would require a cancer risk of 90 in a million and particulate matter concentration of 9.0 $\mu g/m^3$, and second, if the proposed project would then exceed the applicable thresholds. However, proper design and implementation of the scrubbers to meet specific performance criteria cannot be guaranteed. As such, the impact is considered ***significant***. **Mitigation Measure M-AQ-4: Design and Maintenance Standards for Exhaust Capture Control Systems for Live-Fire Training Operations** would require the project sponsor to design exhaust control systems units with proper sizing, develop a standard operating procedure for use of particulate matter removal and control devices (scrubbers), ensure that these air pollution control systems are properly maintained at the correct intervals, document the amount of wood burned during live-fire exercises, and have such documentation available to the planning department upon request.

With implementation of Mitigation Measure M-AQ-4, the proposed project's cumulative impacts on health risk would be ***less than significant with mitigation***.

The air district considers roads with less than 10,000 vehicles per day "minor low-impact sources," stating that these sources "do not pose a significant health impact even in combination with other nearby sources. These determinations were made through extensive modeling, sources tests, and evaluation of their toxic air

contaminant emissions."[78] The proposed project's 334 average daily vehicle trips would be considered minor low-impact sources that do not pose a significant health impact even in combination with other nearby sources.

The proposed project and cumulative projects would also generate some odors during construction, but odors would be temporary. Upon completion of construction activities cumulative projects combined with the proposed project would not generate substantial odors. Therefore, cumulative odor impacts would be considered ***less than significant.***

9. Greenhouse Gas Emissions

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

GHG emissions and global climate change represent cumulative impacts. GHG emissions cumulatively contribute to the significant adverse environmental impacts of global climate change. No single project could generate enough GHG emissions to noticeably change the global average temperature; instead, the combination of GHG emissions from past, present, and future projects have contributed and will continue to contribute to global climate change and its associated environmental impacts.

The air district has prepared guidelines and methodologies for analyzing GHGs. These guidelines are consistent with CEQA Guidelines sections 15064.4 and 15183.5, which address the analysis and determination of significant impacts from a proposed project's GHG emissions. CEQA Guidelines section 15064.4 allows lead agencies to rely on a qualitative analysis to describe GHG emissions resulting from a project. CEQA Guidelines section 15183.5 allows for public agencies to analyze and to mitigate GHG emissions as part of a larger plan to reduce GHGs and describes the required contents of such a plan. Accordingly, the planning department prepared Strategies to Address Greenhouse Gas Emissions,[79] which presents a comprehensive assessment of policies, programs, and ordinances that collectively represent the City's qualified GHG reduction strategy in compliance with the CEQA guidelines. These GHG reduction actions have resulted in a 35 percent reduction in GHG emissions in 2017 compared to 1990 levels,[80]

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78 Bay Area Air Quality Management District, Recommended Methods for Screening and Modeling Local Risks and Hazards, pg. 12, May 2011, https://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/BAAQMD%20Modeling%20Approach.ashx, accessed February 2, 2021.

79 San Francisco Planning Department, *Strategies to Address Greenhouse Gas Emissions in San Francisco,* July 2017, https://sfplanning.org/project/greenhouse-gas-reduction-strategies#info, accessed September 2019.

80 San Francisco Department of the Environment, *San Francisco's Carbon Footprint.* https://sfenvironment.org/carbon-footprint, accessed February 2021.

exceeding the year 2020 reduction goals outlined in the air district's clean air plan, Executive Order S-3-05, and Assembly Bill 32 (also known as the Global Warming Solutions Act).[81]

Given that the City has met the state and region's 2020 GHG reduction targets and the City's GHG reduction goals are consistent with, or more aggressive than, the long-term goals established under Executive Order S-3-05,[82] Executive Order B-30-15,[83,84] and Senate Bill 32,[85,86] the City's GHG reduction goals are consistent with Executive Order S-3-05, Executive Order B-30-15, Assembly Bill 32, Senate Bill 32, and the 2017 clean air plan. Therefore, proposed projects that are consistent with the City's GHG reduction strategy would be consistent with the aforementioned GHG reduction goals, would not conflict with these plans or result in significant GHG emissions, and would therefore not exceed the City's applicable GHG threshold of significance.

The following analysis of the proposed project's impact on climate change focuses on the proposed project's contribution to cumulatively significant GHG emissions. Because no individual project could emit GHGs at a level that could result in a significant impact on the global climate, this analysis is in a cumulative context, and this section does not include an individual project-specific impact statement.

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

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

The proposed project would entail construction of the administration building, maintenance building, apparatus building, and the training tower structure. Total gross feet of permanent structures on site would be approximately 116,200 square feet, and several additional prop structures would be installed for training exercises. Construction activities would also result in temporary increases in GHG emissions.

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81 *Executive Order S-3-05, Assembly Bill 32*, and the air district's clean air plan (continuing the trajectory set in the 2010 Clean Air Plan) set a target of reducing GHG emissions to below 1990 levels by year 2020.

82 Office of the Governor, *Executive Order S-3-05*, June 1, 2005, http://static1.squarespace.com/static/549885d4e4b0ba0bff5dc695/t/54d7f1e0e4b0f0798cee3010/1423438304744/California+Executive+Order+S-3-05+(June+2005).pdf. Executive Order S-3-05 sets forth a series of target dates by which statewide emissions of GHGs need to be progressively reduced, as follows: by 2010, reduce GHG emissions to 2000 levels (approximately 457 million metric tons of carbon dioxide equivalents (MTCO2E)); by 2020, reduce emissions to 1990 levels (approximately 427 million MTCO2E); and by 2050 reduce emissions to 80 percent below 1990 levels (approximately 85 million MTCO2E). Because of the differential heat absorption potential of various GHGs, GHG emissions are frequently measured in "carbon dioxide-equivalents," which present a weighted average based on each gas's heat absorption (or "global warming") potential.

83 Office of the Governor, *Executive Order B-30-15,* April 29, 2015, https://www.gov.ca.gov/news.php?id=18938, accessed March 3, 2016. Executive Order B-30-15, issued on April 29, 2015, sets forth a target of reducing GHG emissions to 40 percent below 1990 levels by 2030 (estimated at 2.9 million $MTCO_2E$).

84 San Francisco's GHG reduction goals are codified in section 902 of the environment code and include (i) by 2008, determine City GHG emissions for year 1990; (ii) by 2017, reduce GHG emissions by 25 percent below 1990 levels; (iii) by 2025, reduce GHG emissions by 40 percent below 1990 levels; and by 2050, reduce GHG emissions by 80 percent below 1990 levels.

85 Senate Bill 32 amends California Health and Safety Code Division 25.5 (also known as the California Global Warming Solutions Act of 2006) by adding section 38566, which directs that statewide greenhouse gas emissions to be reduced by 40 percent below 1990 levels by 2030.

86 Senate Bill 32 was paired with Assembly Bill 197, which would modify the structure of the State Air Resources Board; institute requirements for the disclosure of greenhouse gas emissions criteria pollutants, and toxic air contaminants; and establish requirements for the review and adoption of rules, regulations, and measures for the reduction of greenhouse gas emissions.

During operations, the proposed project would contribute to annual long-term increases in GHGs as a result of increased vehicle trips (mobile sources) and operations that result in an increase in energy use, water use, wastewater treatment, and solid-waste disposal.

The proposed project would be subject to regulations adopted to reduce GHG emissions as identified in the GHG reduction strategy. As discussed below, compliance with the applicable regulations would reduce the proposed project's GHG emissions related to transportation, energy use, waste disposal, wood burning, and use of refrigerants.

Compliance with the City's Commuter Benefits Ordinance, the Healthy Air and Clean Transportation Ordinance transit-first policies, the use of biodiesel for municipal fleets, and the provision of bicycle parking, showers, and lockers in new buildings would reduce the proposed project's transportation-related emissions.[87] These regulations reduce GHG emissions from single-occupancy vehicles by promoting the use of alternative transportation modes with zero or lower GHG emissions on a per capita basis.

The proposed project would comply with green-building requirements for energy efficiency, such as meeting LEED Gold certification, indoor potable water use reduction requirements, and renewable energy and energy efficiency requirements outlined in San Francisco Environment Code, Chapter 7 for projects over 10,000 feet. Except for petroleum fuels required for fire-training operations, the new buildings would be all electric. Compliance with these requirements promotes energy and water efficiency, thereby reducing the proposed project's energy-related GHG emissions.

The proposed project's waste-related emissions would be reduced through compliance with the City's Resource Conservation Ordinance, which establishes construction and demolition debris recycling requirements, and Mandatory Recycling and Composting Ordinance. These regulations reduce the amount of materials sent to a landfill, thus reducing GHGs emitted by landfill operations. These regulations also promote reuse of materials, conserving their embodied energy[88] and reducing the energy required to produce new materials.

Other regulations, including street tree planting requirements would reduce emissions of GHGs. Regulations requiring low-emitting finishes would reduce *volatile organic compounds*.[89] Thus, the proposed project was determined to be consistent with San Francisco's GHG reduction strategy.[90]

The project sponsor is required to comply with these regulations, which have proven effective as the city's GHG emissions have measurably decreased when compared to 1990 emissions levels, demonstrating that the City has met and exceeded Executive Order S-3-05, Assembly Bill 32, and the clean air plan GHG reduction goals for the year 2020. Furthermore, the City has met its 2017 GHG reduction goal of reducing GHG emissions to 25 percent below 1990 levels by 2017. Other existing regulations, such as those implemented through Assembly Bill 32, will continue to reduce a proposed project's contribution to climate change. In addition, the City's local GHG reduction targets are consistent with the long-term GHG reduction

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87 San Francisco Planning Department, *Compliance Checklist Table for Greenhouse Gas Analysis: Table 2*. Municipal Projects for 1236 Carroll Avenue, September 27, 2021.

88 Embodied energy is the total energy required for the extraction, processing, manufacture, and delivery of building materials to the building site.

89 While not a GHG, volatile organic compounds are precursor pollutants that form ground-level ozone. Increased ground-level ozone is an anticipated effect of future global warming that would result in added health effects locally. Reducing volatile organic compound emissions would reduce the anticipated local effects of global warming.

90 San Francisco Planning Department, *Compliance Checklist Table for Greenhouse Gas Analysis: Table 2,* Municipal Projects for 1236 Carroll Avenue, September 27, 2021.

goals of Executive Order S-3-05, Executive Order B-30-15, Assembly Bill 32, Senate Bill 32, and the clean air plan. Therefore, because the proposed project would be consistent with the City's GHG reduction strategy, it would also be consistent with the GHG reduction goals of Executive Order S-3-05, Executive Order B-30-15, Assembly Bill 32, Senate Bill 32, and the clean air plan, would not conflict with these plans, and would therefore not exceed the City's applicable GHG threshold of significance. As such, the proposed project impact would be ***less than significant*** with respect to GHG emissions, and no mitigation would be required.

10. Wind

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

Planning Code section 148, Reduction of Ground-level Wind Currents in C-3 Districts, requires buildings to be shaped so as not to cause ground-level wind currents to exceed defined comfort and hazard criteria. This project site is located in a district that is not subject to the wind regulations in Planning Code section 148. However, for the purposes of environmental review under the California Environmental Quality Act, the planning department uses the wind hazard criterion of Planning Code section 148 to determine if a proposed project would have significant wind impacts.

The wind hazard criterion requires that buildings not cause equivalent wind speeds to reach or exceed the hazard level of 26 mph as averaged from a single full hour of the year.

Impact WI-1: The proposed project would not create wind hazards in publicly accessible areas of substantial pedestrian use. (Less than Significant)

Average wind speeds in San Francisco are the highest in the summer and lowest in winter. However, the strongest peak winds occur in winter. Throughout the year, the highest wind speeds occur in mid-afternoon and the lowest in the early morning. West-northwest, west, northwest, and west-southwest are the most frequent and strongest of primary winds during all seasons (referred to as prevailing winds).

Tall buildings and exposed structures can strongly affect the wind environment for pedestrians. A building that stands alone or is much taller than the surrounding buildings can intercept and redirect winds that might otherwise flow overhead and bring them down the vertical face of the building to ground level, where they create ground-level wind and turbulence. These redirected winds can be relatively strong, turbulent, and incompatible with the intended uses of nearby ground-level spaces. A building with a height that is similar to the heights of surrounding buildings typically would cause little or no additional ground-level wind acceleration and turbulence. Thus, wind impacts are generally caused by large building masses that extend substantially above their surroundings, and by buildings oriented such that a large wall catches a prevailing wind, particularly if such a wall includes little or no articulation. In general, new buildings less than approximately 80 feet in height are unlikely to result in substantial adverse effects on ground-level winds

such that pedestrians would be uncomfortable. Such winds may exist under existing conditions, but shorter buildings typically do not cause substantial changes in ground-level winds.

The proposed project would result in the construction of the 110-foot-tall training tower structure. All other buildings would be less than 80 feet tall. To assess the impacts of the training tower, a qualitative *pedestrian wind study* was prepared for the proposed project by a qualified wind consultant.[91] The purpose of the wind study was to assess the wind environment around the project site in terms of pedestrian safety and, if necessary, to recommend changes to the proposed project to reduce wind impacts.

The qualitative assessment was based on available architectural drawings and design files for the proposed project, as well as information regarding the surrounding environment. Existing, existing plus project, and project plus cumulative configurations were evaluated.

As noted in the wind study, since the proposed buildings would be taller than the immediate surroundings, some of the upper-level westerly winds would be redirected (i.e., downwashed) toward ground level. This is expected to create conditions that would likely be windier than currently exist at some locations, specifically on the sidewalk along the northside side of Carroll Avenue, as well as in the interior of the project site. However, however, the height and width of the taller building elements would likely still not be large enough to create hazardous wind conditions. The proposed project would not result in significant pedestrian-level wind effects. As such, the proposed project impact would be ***less than significant*** related to wind hazards, and no mitigation would be required.

Impact C-WI-1: The proposed project, in combination with cumulative projects, would result in less than significant cumulative impacts on wind. (Less than Significant)

The cumulative context for wind hazards would be localized and limited to the immediate vicinity of the project site. Cumulative development in the project vicinity (within a 0.25-mile radius of the project site) includes the projects identified in **Table 4**, and shown in **Figure 9**. The cumulative development projects in **Table 4** consist of new buildings at a range of heights (26 to 420 feet). However, the cumulative development includes no taller buildings west of the project site; buildings to the west would range from 26 to 40 feet in height. As such, they would not have a significant impact on pedestrian-level winds. The proposed CPHPS Phase II project includes low-rise residential development, with buildings 40 to 65 feet tall, to the south of Carroll Avenue and east of Hawes Street, in the former Alice Griffith community. The scale of the buildings within this development and the direction (i.e., to the south and southeast) are such that they would not affect ground-level winds at the 1236 Carroll Avenue project site. The taller buildings of the CPHPS Phase II Project would be located more than 500 feet to the east and south, and as such they would not affect ground-level winds in the project site vicinity. The wind study determined that the proposed project impact, in combination with cumulative projects, would be ***less than significant*** related to cumulative wind hazards, and no mitigation would be required.

[91] Rowan Williams Davis & Irwin Inc. (RWDI), 1236 Carroll Avenue, San Francisco, CA, Pedestrian Wind Study, RWDI #2104533, September 8, 2021.

11. Shadow

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

Impact SH-1: The proposed project would not create new shadow that substantially and adversely affects the use and enjoyment of publicly accessible open space. (Less than Significant)

In 1984, San Francisco voters approved an initiative known as "Proposition K, The Sunlight Ordinance," which was codified as Planning Code section 295 in 1985. Planning Code section 295 generally prohibits new structures above 40 feet in height that would cast additional shadows between one hour after sunrise and one hour before sunset, at any time of the year, on open space that is under the jurisdiction of the San Francisco Recreation and Park Commission unless those shadows would not result in a significant adverse effect on the use of the open space. Public open spaces that are not under the jurisdiction of the recreation and park commission as well as private open spaces are not subject to Planning Code section 295.

The nearest public open space to the project site is the Candlestick Point State Recreation Area, which comprises vacant land directly east of the site. This area also includes Yosemite Slough one block to the north. The proposed project would include buildings greater than 40 feet in height; therefore, the planning department prepared preliminary shadow fan diagrams to determine whether the proposed project would have the potential to cast new shadows on nearby parks.[92] The shadow fan diagrams, which evaluated both the 50-foot-tall administration building and 110-foot-tall fire-training tower structure, indicate that the proposed project would cast net new shadows on the Candlestick Point State Recreation Area to the east, as well as a sliver of Yosemite Slough to the north.

To assess the impacts of all structures proposed, a qualified shadow consultant prepared a *shadow analysis* for the proposed project.[93] The purpose of the analysis is to provide shadow diagrams showing the net new shadows cast by the proposed project. In the context of this report "net new shadows" refers to the areas of shadowing caused by the proposed building or cumulative buildings that are not already shadowed under the existing condition. A 3D model of the proposed development and the surroundings was created. The model was used to produce a set of computer-generated shadow diagrams for the proposed development, highlighting net new shadows cast by the proposed project on an hourly basis from one hour after sunrise to one hour before sunset, and at the top of each hour in between, for the following days of the year:

- Winter solstice (December 21), when midday sun is at its lowest and shadows are at their longest
- Summer solstice (June 21), when midday sun is at its highest and shadows are at their shortest
- Spring/fall equinox (March 21, September 21), when shadows are midway through a period of lengthening or shortening

[92] San Francisco Planning Department, *Preliminary Shadow Fan Analysis: 1236 Carroll Avenue*, July 8, 2021.
[93] Rowan Williams Davis & Irwin Inc. (RWDI), 1236 Carroll Avenue, San Francisco, CA, Shadow Analysis, RWDI #2104533. September 23, 2021.

The analysis found that the net new shadows from the proposed project would be generally confined to an area within 500 feet of the project site. The proposed project buildings would mainly cast net new shadows on the buildings immediately to the northeast of the development during March, September, and December evenings. Some shadows would be cast to the south and southwest on areas currently undeveloped or vacant in the mornings during the summer. In December evenings, some shadows are expected to fall on a small area of the Yosemite Slough and the South Basin to the northeast of the proposed development. In addition, during evenings throughout the year, some shadows are predicted to fall on a small section of the Candlestick Point State Recreation Area to the east of the 1236 Carroll Avenue site.

The net new shadows cast on the public open spaces at Yosemite Slough and Candlestick Point State Recreation Area would be of limited duration during the afternoon and early evening hours. In addition, the portion of the Candlestick Point State Recreation Area east of the project site is not heavily used; it contains tidal marsh zone and grassland / coastal shrub zone, but there are no trails or other recreational features in this portion of the open space.[94] Therefore, the net new shadows generated by the proposed project would not substantially and adversely affect the use and enjoyment of publicly accessible open space.

The proposed project would cast new shadows on sidewalks in the vicinity of the project site, but new shadow coverage would be generally transitory in nature and would not substantially affect the function of sidewalks (which, in the vicinity of the site, are used primarily as pedestrian walkways and not as places for extended periods of stationary activity). These new shadows would not be above levels that are common for San Francisco's urban environment.

Therefore, this impact would be ***less than significant***, and no mitigation would be required.

Impact C-SH-1: The proposed project, in combination with cumulative projects, would not result in significant cumulative shadow impacts. (Less than Significant)

The qualitative shadow study assessed whether shadows from the proposed project could combine with shadows from cumulative development projects to create or contribute to a cumulative shadow impact on public open spaces. Of the cumulative projects identified in **Table 4**, and shown in **Figure 9**, the redevelopment of the Alice Griffith site—as part of the larger CPHPS Phase II redevelopment plan—would entail low-rise residential development of 3- to 4-story buildings that are 35 to 65 feet tall. Combined with shadow from the fire-training facility, shadows from the CPHPS Phase II project would be cast on a very small area of Yosemite Slough and the South Basin to the northeast of the proposed development. In addition, during evenings throughout the year, some shadows are predicted to fall on a small section of the Candlestick Point State Recreation Area to the east of the 1236 Carroll Avenue project sit

The cumulative net new shadows cast on the public open spaces at Yosemite Slough and Candlestick Point State Recreation Area would be of limited duration during the afternoon and early evening hours. In addition, the portion of the Candlestick Point State Recreation Area east of the project site is not heavily used; it contains tidal marsh zone and grassland / coastal shrub zone, but there are no trails or other recreational features in this portion of the open space. The Yosemite Slough Wetland Restoration Project within Candlestick Point State Recreation Area: Phase 3 would include formalization of the San Francisco Bay Trail on both sides of the slough. Depending on the ultimate design and location of the trail, cumulative net shadow could reach this trail. But the shadow would be of limited duration and would not substantially

[94] California State Parks, Candlestick Point State Recreation Area (brochure), 2003, https://www.parks.ca.gov/pages/519/files/CandlestickPt.pdf, accessed October 21, 2021.

affect the use of the trail. Therefore, the net new shadows generated by the proposed project combined with the cumulative projects would not substantially and adversely affect the use and enjoyment of publicly accessible open space.

Cumulative development would cast new shadows on sidewalks in the vicinity of the project site, but new shadow coverage would be generally transitory in nature and would not substantially affect the function of sidewalks (which, in the vicinity of the site, are used primarily as pedestrian walkways and not as places for extended periods of stationary activity). These new shadows would not be above levels that are common for San Francisco's urban environment.

Regarding shadow from other cumulative development projects, the CPHPS Phase II redevelopment plan would also allow for high-rise development (buildings greater than 105 feet tall), but these buildings would be located more than 400 feet southeast of the 1236 Carroll Avenue project site.[95] Both the 1313 Armstrong Avenue and 1353 Yosemite Avenue projects would result in buildings that are less than 40 feet tall that would not cast extensive new shadows. Other cumulative projects would be located too far from the project site vicinity to cast shadow on the Yosemite Slough or that portion of the Candlestick Point State Recreation Area.

While these cumulative projects would cast new shadows onto sidewalks and streets in the area, shadows from the proposed project and these cumulative projects would not be above levels common for San Francisco's urban environment. Therefore, the cumulative impact would be ***less than significant***, and no mitigation would be required.

12. Recreation

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

[95] San Francisco Redevelopment Commission, *Candlestick Point: Design for Development*, 2016, https://sfocii.org/sites/default/files/Documents/Project%20Areas/HPSY/Phase%202%20%26%20Candlestick/Candlestick%20Point%20Design%20for%20Development%20reduced%20.pdf, accessed July 2021.

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

The number of trainees and community groups who would use the facility would vary throughout the year, as indicated in **Table 2**. On-site staff (employment) would average 32 persons per day. The proposed project would increase the intensity of use of the project site, including by employees, trainees, and additional workshops intended for citizen or nonprofit organization use. The number of staff members would fluctuate based on scheduling.

The San Francisco Recreation and Parks Department (recreation and parks department) administers more than 220 parks, playgrounds, and open spaces throughout the city, as well as recreational facilities that include recreation centers, swimming pools, golf courses, and athletic fields, tennis courts, and basketball courts.[96] In 2003, voters passed Proposition C, which mandated the evaluation of park maintenance at city parks. The recreation and parks department conducts quarterly maintenance evaluations at each city park to identify and address maintenance standards and schedules to improve park conditions and allocate resources as necessary. In addition, the 2014 Recreation and Open Space Element of the general plan identified areas of "high-need," which are given highest priority for the construction of new parks and recreation improvements.[97] The project site is within a lesser-need area and is within a short distance to greater-need areas.

Vacant land within the Candlestick Point State Recreation Area is directly east of the site. Other neighborhood parks and recreational facilities near the proposed project are the 4.39-acre Gilman Playground Park (approximately 0.32 mile south) and the 3.72-acre Bay View Park KC Jones Playground Park (located 0.46 mile west-northwest). The north shore of Yosemite Slough, which is also part of the Candlestick Point State Recreation Area, is 0.19 mile north. Bayview Park, which consists of a series of walking trails, is 0.59 mile south. These parks could experience increased use by employees, trainees, or community groups associated with use of the proposed facility. However, the proposed project would not include residential uses or populations, and it is unlikely to result in a substantial increased use of existing regional and neighborhood parks or other recreational facilities within the project vicinity such that physical deterioration would be expected to occur. The proposed project would also not require the construction or expansion of recreational facilities. The increase in recreational facility use as a result of the proposed project would be negligible; therefore, the proposed project's impact on recreational facilities would be ***less than significant***, and no mitigation would be required.

Impact C-RE-1: The proposed project, in combination with cumulative projects, would result in less-than-significant impacts on recreational resources. (Less than Significant)

Cumulative development in the project vicinity, as identified in **Table 4**, and shown in **Figure 9**, would result in an intensification of land uses and a cumulative increase in the demand for recreational facilities and resources. The City and County of San Francisco has accounted for such growth as part of the 2014 Recreation and Open Space Element of the general plan. In addition, San Francisco voters passed three bond measures—one each in 2008, 2012, and 2020—to fund the acquisition, planning, and renovation of the city's network of recreational resources. As discussed above, neighborhood parks are within several blocks of the

[96] San Francisco Recreation and Parks Department, sfrecpark.org, accessed July 2021.

[97] San Francisco Planning Department, *San Francisco General Plan, Recreation and Open Space Element*, April 2014, http://openspace.sfplanning.org/, accessed July 2021.

project site. It is expected that these existing recreational facilities would be able to accommodate the increase in demand for recreational resources generated by nearby cumulative development projects. The proposed project would not considerably contribute to this increased demand. For these reasons, the proposed project would not combine with cumulative projects in the project vicinity to create a significant cumulative impact on recreational facilities or resources. Therefore, this impact would be ***less than significant***, and no mitigation would be required.

13. Utilities and Service Systems

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

The project site is within an urban area that is served by water storage, treatment, and distribution facilities; combined wastewater and stormwater collection, storage, treatment, and disposal facilities; electric power, natural gas, and telecommunication facilities; and solid-waste collection and disposal service systems.

Impact UT-1: The proposed project would not require or result in the relocation or construction of new or expanded, water, wastewater treatment, or stormwater drainage, electric power, natural gas, or telecommunications facilities, nor would it result in a determination by the wastewater treatment provider that it has inadequate capacity to serve the proposed project's projected demand in addition to the provider's existing commitments. (Less than Significant)

The project site has no active utility connections. The project site would be connected to San Francisco's combined sewer system, which collects and treats most of the wastewater and stormwater at one of the three SFPUC treatment facilities; the proposed project would connect to the system via the existing sewer that runs beneath Bancroft Avenue. Wastewater and stormwater generated by the proposed project would be treated at the Southeast Water Pollution Control Plant, which treats 57 million gallons per day (mgd) of wastewater and has the capacity to treat up to 250 mgd of wastewater during a rainstorm.[98]

As shown in the Project Description (**Table 2**), the proposed project would increase intensity of use of the project site from intermittent to regular use by employees, trainees, and community groups. Implementation of the proposed project would therefore increase wastewater flows from the project site. The proposed project is subject to LEED certification and therefore would incorporate water-efficient fixtures, as required by title 24 of the California Code of Regulations and the San Francisco Green Building Ordinance. Compliance with these regulations would reduce wastewater flows and the amount of potable water used for building functions. The SFPUC's infrastructure capacity plans account for projected population and employment growth. The incorporation of water-efficient fixtures into new development is also accounted for by the SFPUC because widespread adoption can lead to more efficient use of existing capacity. For these reasons, the population increase associated with the proposed project would not require the construction of new or expansion of existing wastewater treatment facilities.

The project site has been an undeveloped dirt lot with a gravel surface since at least 1968. In 2002, the lot was paved with parking spaces. Since 2002, portions of the paving have been covered over with additional dirt, gravel, and debris from construction laydown activities. Regardless, the project site comprises impervious surfaces, and the proposed project would not increase impervious surfaces.

The City's Stormwater Management Ordinance (Ordinance No. 83-10, effective May 22, 2010) requires projects to maintain, reduce, or eliminate the existing volume and rate of stormwater runoff discharged from the project site. In addition, for projects replacing 5,000 square feet or more of impervious surface, stormwater flows are required to be reduced by 25 percent below existing conditions. To achieve these objectives, the proposed project would be required to implement and install appropriate stormwater management systems that retain runoff on site, promote stormwater reuse, and limit (or eliminate altogether) site discharges from entering the city's combined stormwater/sewer system. This, in turn, would limit the incremental demand on both the collection system and wastewater facilities resulting from stormwater discharges.

As discussed in more detail in Impact UT-2, the proposed project would require installation of utilities and therefore would result in an incremental increase in the demand for new water supplies but would not itself

[98] Waste and Water Digest, Plant Profile: Southeast Treatment Plant. September 23, 2020. https://www.wwdmag.com/treatment-plants/plant-profile-southeast-treatment-plant. Accessed July 2021.

result in the need for the construction of new or expanded water treatment facilities or delivery infrastructure.

The proposed project would result in an incremental increase in the demand for electricity, natural gas, and telecommunications, which would not be in excess of amounts expected and provided for in the project area by utility service providers.

For these reasons, the utilities demand associated with the proposed project would not exceed the service capacity of the existing providers and would not require the construction of new facilities or expansion of existing facilities. Therefore, this impact would be ***less than significant***, and no mitigation would be required.

Impact UT-2: Sufficient water supplies are available to serve the proposed project and reasonably foreseeable future development in normal, dry, and multiple dry years unless the Bay-Delta Plan Amendment is implemented; in that event the public utilities commission may develop new or expanded water supply facilities to address shortfalls in single and multiple dry years, but this would occur with or without the proposed project. Impacts related to new or expanded water supply facilities cannot be identified at this time or implemented in the near term; instead, the public utilities commission would address supply shortfalls through increased rationing, which could result in significant cumulative effects, but the proposed project would not make a considerable contribution to impacts from increased rationing. (Less than Significant)

The SFPUC adopted the 2020 Urban Water Management Plan (2020 plan) in June 2021.[99] The 2020 plan estimates that current and projected water supplies will be sufficient to meet future demand for retail water[100] customers through 2045 under wet- and normal-year conditions; however, in dry years, the SFPUC would implement water use and supply reductions through its Water Shortage Contingency Plan and a corresponding Retail Water Shortage Allocation Plan.[101]

In December 2018, the State Water Resources Control Board adopted amendments to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary, which establishes water quality objectives to maintain the health of our rivers and the Bay-Delta ecosystem (the Bay-Delta Plan Amendment).[102] The state water board has indicated that it intends to implement the Bay-Delta Plan Amendment by the year 2022, assuming all required approvals are obtained by that time. Implementation of the Bay-Delta Plan Amendment would result in a substantial reduction in the SFPUC's water supplies from the Tuolumne River watershed during dry years, requiring rationing to a greater degree in San Francisco than previously anticipated to address supply shortages.

Implementation of the Bay-Delta Plan Amendment is uncertain for several reasons and whether, when, and the form in which the Bay-Delta Plan Amendment would be implemented, and how those amendments

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99 San Francisco Public Utilities Commission, *2020 Urban Water Management Plan for the City and County of San Francisco*, adopted June 11, 2021. This document is available at Urban Water Management Plan | SFPUC.

100 "Retail" demand represents water the SFPUC provides to individual customers within San Francisco. "Wholesale" demand represents water the public utilities commission provides to other water agencies supplying other jurisdictions.

101 San Francisco Public Utilities Commission, *2020 Urban Water Management Plan for the City and County of San Francisco, Appendix K – Water Shortage Contingency Plan,* adopted June 11, 2021. This document is available at Urban Water Management Plan | SFPUC.

102 State Water Resources Control Board Resolution No. 2018-0059, Adoption of Amendments to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary and Final Substitute Environmental Document, December 12, 2018, https://www.waterboards.ca.gov/plans_policies/docs/2018wqcp.pdf.

could affect SFPUC's water supply, is currently unknown. In acknowledgment of these uncertainties, the 2020 plan presents future supply scenarios both with and without the Bay-Delta Plan Amendment, as follows:

1. Without implementation of the Bay-Delta Plan Amendment wherein the water supply and demand assumptions contained in section 8.4 of the 2020 plan would be applicable
2. With implementation of a voluntary agreement between the SFPUC and the State Water Resources Control Board that would include a combination of flow and non-flow measures that are designed to benefit fisheries at a lower water cost, particularly during multiple dry years, than would occur under the Bay-Delta Plan Amendment)
3. With implementation of the Bay-Delta Plan Amendment as adopted wherein the water supply and demand assumptions contained in section 8.3 of the 2020 plan would be applicable

Water supply shortfalls during dry years would be lowest without implementation and highest with implementation of the Bay-Delta Plan Amendment. Shortfalls under the proposed voluntary agreement would be between those with and without implementation of the Bay-Delta Plan Amendment.[103]

Under these three scenarios, the SFPUC would have adequate water to meet demand in San Francisco through 2045 in wet and normal years.[104] Without implementation of the Bay-Delta Plan Amendment, water supplies would be available to meet demand in all years except for a 4.0 mgd (5.3 percent) shortfall in years four and five of a multiple year drought based on 2045 demand.

With implementation of the Bay-Delta Plan Amendment, shortfalls would range from 11.2 mgd (15.9 percent) in a single dry year to 19.2 mgd (27.2 percent) in years two through five of a multiple year drought based on 2025 demand levels and from 20.5 mgd (25.4 percent) in a single dry year to 28.5 mgd (35.4 percent) in years four and five of a multiple year drought based on 2045 demand.

The proposed project does not require a water supply assessment under the California Water Code. Under sections 10910 through 10915 of the California Water Code, urban water suppliers like the SFPUC must prepare water supply assessments for certain large "water-demand" projects, as defined in CEQA Guidelines section 15155.[105] The proposed fire-training facility does not qualify as a "water-demand" project as defined

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[103] On March 26, 2019, the SFPUC adopted Resolution No. 19-0057 to support its participation in the voluntary agreement negotiation process. To date, those negotiations are ongoing under the California Natural Resources Agency. The SFPUC submitted a proposed project description that could be the basis for a voluntary agreement to the state water board on March 1, 2019. As the proposed voluntary agreement has yet to be accepted by the state water board as an alternative to the Bay-Delta Plan Amendment, the shortages that would occur with its implementation are not known with certainty; however, if accepted, the voluntary agreement would result in dry year shortfalls of a lesser magnitude than under the Bay-Delta Plan Amendment.

[104] Based on historic records of hydrology and reservoir inflow from 1920 to 2017, current delivery and flow obligations, and fully implemented infrastructure under the 2018 Phased Water System Improvement Program Variant, normal or wet years occurred 85 out of 97 years. This translates into roughly nine normal or wet years out of every 10 years. Conversely, system-wide rationing is required roughly one out of every 10 years. This frequency is expected to increase as climate change intensifies.

[105] Pursuant to CEQA Guidelines section 15155(1), "a water-demand project" means:
(A) A residential development of more than 500 dwelling units.
(B) A shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.
(C) A commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor area.
(D) A hotel or motel, or both, having more than 500 rooms
(E) An industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.
(F) A mixed-use project that includes one or more of the projects specified in subdivisions (a)(1)(A), (a)(1)(B), (a)(1)(C), (a)(1)(D), (a)(1)(E), and (a)(1)(G) of this section.
(G) A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

by CEQA Guidelines section 15155(a)(1) and a water supply assessment is not required and has not been prepared for the proposed project. The following discussion considers the potential water supply impacts for projects—such as the proposed project—that do not qualify as "water-demand" projects.

No single development project alone in San Francisco would require the development of new or expanded water supply facilities or require the SFPUC to take other actions, such as imposing a higher level of rationing across the city in the event of a supply shortage in dry years. Therefore, a separate project-only analysis is not provided for this topic. The following analysis instead considers whether the proposed project in combination with both existing development and projected growth through 2045 would require new or expanded water supply facilities, the construction or relocation of which could have significant impacts on the environment. It also considers whether a high level of rationing would be required that could have significant cumulative impacts. It is only under this cumulative context that development in San Francisco could have the potential to require new or expanded water supply facilities or require the SFPUC to take other actions, which in turn could result in significant physical environmental impacts related to water supply. If significant cumulative impacts could result, then the analysis considers whether the project would make a considerable contribution to the cumulative impact.

Based on guidance from the California Department of Water Resources and a citywide demand analysis, the SFPUC has established 50,000 gallons per day as the maximum water demand for projects that do not meet the definitions provided in CEQA Guidelines section 15155(a)(1).[106] The development proposed by the proposed project would represent 23 percent of the 500,000 square feet threshold for a water-demand analysis, as provided in section 15155(1)(B). On average, 32 employees would be on the site, and an additional up to 165 training participants would be present, which would be well below the 1,000-employee threshold required for a water-demand analysis. In addition, the proposed project would incorporate water-efficient fixtures as required by title 24 of the California Code of Regulations and the City's Green Building Ordinance. Fire-training activities using water would occur up to four times per day for up to 75 days per year. Activities would be of limited duration, and fires would be controlled, such that water use would not be substantial. Moreover, the project would represent a relocation of use, and associated water demand, from the existing fire department facilities on Treasure Island (649 Avenue N) and at 2310 Folsom Street (at 19th Street). It is therefore reasonable to assume that the proposed project would result in an average daily demand of substantially less than 50,000 gallons per day of water.

Assuming the proposed project would demand no more than 50,000 gallons of water per day, its water demand would represent a small fraction of the total projected demand, ranging at most from 0.07 to 0.06 percent between 2025 and 2045. As such, the proposed project's water demand would not require or result in the relocation or construction of new or expanded water facilities, the construction or relocation of which could cause significant environmental effects.

Sufficient water supplies are available to serve the proposed project and reasonably foreseeable future development in normal, dry, and multiple dry years unless the Bay-Delta Plan Amendment is implemented. As indicated above, the proposed project's maximum demand would represent less than 0.06 percent of the total demand in 2045 when the retail water supply shortfall projected to occur with implementation of the Bay-Delta Plan Amendment would be up to 35.4 percent in a multi-year drought. The SFPUC has indicated that it is accelerating its efforts to develop additional water supplies and explore other projects that would

[106] Memorandum, from Steven R. Ritchie, Assistant General Manager, Water Enterprise, San Francisco Public Utilities Commission to Lisa Gibson, Environmental Review Officer, San Francisco Planning Department – Environmental Planning, May 31, 2019.

improve overall water supply resilience through an alternative water supply program. The SFPUC has taken action to fund the study of additional water supply projects, but it has not determined the feasibility of the possible projects and has determined that the identified potential projects would take anywhere from 10 to 30 years or more to implement. The potential impacts that could result from the construction and/or operation of any such water supply facility projects cannot be identified at this time. In any event, under such a worst-case scenario, the demand for the SFPUC to develop new or expanded dry-year water supplies would exist regardless of whether the proposed project is constructed.

Given the long lead times associated with developing additional water supplies, in the event the Bay-Delta Plan Amendment were to take effect sometime after 2022 and result in a dry-year shortfall, the expected action of the SFPUC for the next 10 to 30 years (or more) would be limited to requiring increased rationing. As discussed in the SFPUC memorandum, the SFPUC has established a process through its Retail Water Shortage Allocation Plan for actions it would take under circumstances requiring rationing. The level of rationing that would be required of the proposed project is unknown at this time. Both direct and indirect environmental impacts could result from high levels of rationing. However, the small increase in potable water demand attributable to the proposed project compared to citywide demand would not substantially affect the levels of dry-year rationing that would otherwise be required throughout the city. Therefore, the proposed project would not make a considerable contribution to a cumulative environmental impact caused by implementation of the Bay-Delta Plan Amendment. Project impacts related to water supply would be ***less than significant***.

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

WASTEWATER AND STORMWATER

The geographic context for cumulative wastewater and stormwater impacts is the Southeast Water Pollution Control Plant drainage basin. The city's combined sewer system and treatment facilities are designed to accept both wastewater and stormwater flows. As with the proposed project, all reasonably foreseeable projects in the drainage basin would be required to comply with San Francisco regulations regarding wastewater and stormwater generation. Although cumulative projects would likely result in increased wastewater flows, regulations require that, for projects replacing 5,000 square feet or more of impervious surface, stormwater flows be reduced by 25 percent over existing conditions. The 25 percent reduction in stormwater flows would result in an overall reduction in combined flows during peak wet-weather flow events. Therefore, the proposed project impact, in combination with cumulative projects, would be ***less than significant*** on the combined sewer collection and treatment system.

WATER

As discussed in Impact UT-2, no single development project alone in San Francisco would require the development of new or expanded water supply facilities. The analysis provided in Impact UT-2 considers whether the proposed project, in combination with both existing development and projected growth through 2040, would require new or expanded water supply facilities, the construction or relocation of which could have significant cumulative impacts on the environment. Therefore, no separate cumulative analysis is required.

SOLID WASTE

The geographic context for cumulative solid-waste impacts is the city. Long-range growth forecasts are considered in planning for future landfill capacity. In addition, the city currently exceeds statewide goals for

reducing solid waste and is therefore expected to reduce solid-waste volumes in the future. All projects are required to comply with San Francisco's construction and demolition debris recovery and recycling and composting ordinances. As with the proposed project, cumulative projects' compliance with these ordinances would reduce the solid waste generation from construction and operation of cumulative development projects.

Although cumulative development projects could incrementally increase total waste generation from the city by increasing the number of residents and excavation, demolition, and remodeling activities associated with growth, the increasing rate of landfill diversion citywide through recycling, composting, and other methods would result in a decrease of total waste that requires depositing into the landfill. Given the City's progress to date on diversion and waste reduction and given the future long-term capacity available at the Recology Hay Road Landfill and other area landfills, reasonably foreseeable development projects would be served by a landfill with sufficient permitted capacity to accommodate their solid-waste disposal needs. For these reasons, the proposed project impact, in combination with cumulative projects, would be ***less than significant*** related to solid waste.

CONCLUSION

Based on the above, the proposed project would not combine with cumulative projects to create a significant cumulative impact on utilities and service systems, and this impact would be ***less than significant***. No mitigation would be required.

14. Public Services

Topics:	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact	Not Applicable
Would the project: a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services such as fire protection, police protection, schools, parks, or other public facilities?	☐	☐	☒	☐	☐

Section E.12, Recreation, discusses the proposed project's impacts to parks. Impacts to other public services are discussed below. The proposed project would not add housing units at the project site or otherwise induce residential population growth. However, the proposed project would relocate existing uses, which would increase employee and trainee population at the site. The proposed project's impacts on demand for public services are further discussed below.

Impact PS-1: The proposed project would increase demand for police protection, fire protection services, and other government services, but not to an extent that would require new or physically altered government facilities, the construction of which would cause significant environmental impacts. (Less than Significant)

FIRE PROTECTION AND MEDICAL EMERGENCY SERVICE

The impacts of construction of the fire-training facility are analyzed throughout this initial study, including in Section 4, Cultural Resources; Section 6, Transportation and Circulation; Section 7, Noise; Section 8, Air Quality; Section 17, Hydrology and Water Quality; and Section 18, Hazards and Hazardous Materials. As indicated throughout this initial study, the construction of the proposed project would not result in significant environmental effects.

The fire department provides fire suppression and emergency medical services in the city, including the project site.

The fire department consists of three divisions, which are subdivided into 10 battalions and 45 active stations throughout the city. Fire Station No. 17, located at 1295 Shafter Avenue, approximately 0.5 mile northwest of the project site, would serve the project site.[107] The increased employee and trainee population resulting from the proposed project would be expected to increase local demand for fire protection and emergency medical services. However, this increase in demand would be local to the project site vicinity, and it would not be substantial given the overall demand for such services on a citywide basis. Furthermore, the fire department conducts ongoing assessments of its service capacity and response times to maintain acceptable service levels, given the demand resulting from changes in population.

Fire-training operations would entail controlled burn at props and within live-fire structures, similar to existing conditions at the Treasure Island facility. These operations would be carefully monitored pursuant to existing fire department practices, such that fires would be carefully managed and extinguished by on-site resources and personnel.

The proposed project would be required to comply with the applicable requirements of the California Fire Code, which includes requirements pertaining to fire protection systems, provision of state-mandated fire alarms, fire extinguishers, appropriate building access and egress, and emergency response notification systems. In addition, the proposed project would be required to comply with the California Fire Code requirements pertaining to high-rise structures as well as approved water supply capable of supplying the required flow for fire protection.

This impact would be ***less than significant***, and no mitigation would be required.

POLICE PROTECTION SERVICES

The San Francisco Police Department, headquartered at 850 Bryant Street in the Hall of Justice, provides police protection services for the city. The project site is within the Bayview District of the San Francisco Police Department, and the Bayview Station, located at 201 Williams Avenue, is the nearest police station located approximately 1 mile west of the project site.[108] The increased employee and trainee population resulting from the proposed project would be expected to increase local demand for police protection

[107] San Francisco Fire Department, *Fire Station Locations*, https://sf-fire.org/sites/default/files/FileCenter/Documents/1975-Station%20Location%20Map%20-%20w%20FS51.pdf, accessed July 29, 2021.

[108] San Francisco Police Department, *Police District Maps*, http://sanfranciscopolice.org/police-district-maps, accessed July 29, 2021.

services. The police department conducts ongoing assessments of its staffing and facility needs as part of the City's annual operating and capital budget processes. The increase in local demand resulting from the proposed project would not be substantial given the overall demand for such services on a citywide basis. As such, the proposed project would not require the construction of new, or alteration of existing police protection facilities, the construction of which could cause significant environmental impacts. This impact would be ***less than significant***, and no mitigation would be required.

SCHOOLS

The proposed project would not include housing units that would generate public school students. Therefore, implementation of the proposed project would not result in a substantial unmet demand for school facilities, and the proposed project would not require the construction of new, or alteration of existing school facilities, the construction of which could cause a significant environmental impact. Therefore, there would be **no impact.**

OTHER PUBLIC SERVICES

The proposed project would also incrementally increase the demand for other governmental services and facilities, such as libraries. The San Francisco Public Library operates 27 branches throughout San Francisco, with the closest library (the Bayview Lina Brooks Burton branch) located approximately 1 mile northeast of the project site. The increased employee and trainee population resulting from the proposed project would not be expected to increase demand on library services. Therefore, implementation of the proposed project would not require the construction of new, or alteration of, existing public facilities (including library facilities), the construction of which could cause significant environmental impacts. Therefore, there would be **no impact.**

Impact C-PS-1: The proposed project, in combination with cumulative projects, would not result in a cumulative impact on public services. (Less than Significant)

The geographic contexts for cumulative fire, police, and library impacts are the police, fire, and library service areas, while the geographic context for cumulative school impacts is the school district service area. The reasonably foreseeable future projects within 0.25 mile of the project site or, in the case of schools, within the school district, in combination with the proposed project, would increase the population in the area, leading to an increase in demand for public services, including fire and police protection, school services, and library services. These essential city service providers continually assess demand, based on anticipated growth and service needs. By analyzing their service metrics, these agencies and services are able to adjust staffing, capacity, response times, and other measures of performance. As a result, the proposed project in combination with cumulative projects would not result in any service gap in fire, police, schools, or library services. Further, the project would not contribute to demand for public schools under cumulative conditions. Therefore, the proposed project would not combine with cumulative projects in the project vicinity to result in the need for the construction of new, or alteration of existing public services facilities, the construction of which could cause significant environmental impacts. Thus, cumulative public services impacts would be ***less than significant***, and no mitigation would be required.

15. Biological Resources

Topics:	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact	Not Applicable
Would the project:					
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☐	☒
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐	☐
f) Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☐	☒

The project site is used as a construction laydown area and is covered by impervious surfaces, as well as additional dirt, gravel, and debris from construction laydown activities. The project site does not contain federally protected wetlands as defined by section 404 of the Clean Water Act, riparian habitat, or other sensitive natural communities. In addition, the project site is not within an adopted habitat conservation plan, a natural community conservation plan, or other approved local, regional, or state habitat conservation plan areas. Therefore, topics E.15(b), E.15(c), and E.15(f) are not applicable to the proposed project.

Impact BI-1: The proposed project would not have a substantial adverse effect, either directly or through habitat modifications, on any special-status species (Less than Significant)

The project site is covered by asphalt. Dirt, gravel, and debris from construction laydown activities have covered over a portion of that asphalt. There are no existing trees on site or around the perimeter of the site,

and unmanaged vegetation grows around the site's perimeter. Due to the developed nature of the project site and the surrounding area, the project site does not provide suitable habitat for special-status plant or wildlife species. Although some special-status bird species have the potential to forage or could be present as seasonal visitors to San Francisco Bay or the open space and habitat areas within Candlestick Point State Recreation Area, none are expected to nest there. Therefore, the proposed project is not expected to have any effect on listed or candidate wildlife species, and the impact on these species would be ***less than significant***.

Impact BI-2: The proposed project could interfere with the movement of native resident or wildlife species or with established native resident or migratory wildlife corridors. (Less than Significant with Mitigation)

BIRD-SAFE BUILDINGS

Structures in an urban setting may present risks for birds as they traverse their migratory paths due to building location and/or features. The City has adopted guidelines to address this issue and provided regulations for bird-safe design within the city.[109] Planning Code section 139, Standards for Bird-Safe Buildings, establishes building design standards to reduce avian mortality rates associated with bird strikes. The building standards are based on two types of hazards:

- Location-related hazards that pertain to new buildings within 300 feet of an urban bird refuge
- Feature-related hazards such as free-standing glass walls, wind barriers, skywalks, balconies, and greenhouses on rooftops that have unbroken glazed segments 24 square feet or larger in size

Any project that contains building-feature hazards must apply bird-safe glazing treatments on 100 percent of the feature in compliance with Planning Code section 139.

The project site is within 300 feet of an Urban Bird Refuge at Candlestick Point State Recreation Area; therefore, the standards for location-related hazards would apply.[110] The proposed project would be required to comply with the building-feature-related hazard standards of Planning Code section 139 by using bird-safe glazing treatments on 100 percent of any building-feature-related hazards such as free-standing glass walls, wind barriers, and balconies. Compliance with the City's bird-safe building standards would ensure the proposed project buildings do not interfere with the movement of a native resident or wildlife species, or with an established native resident or migratory wildlife corridor.

NESTING BIRDS AND WILDLIFE MOVEMENT

The stands of trees and shrubs within the Candlestick Point State Recreation Area to the east of the project site may provide suitable habitat for common migratory birds. Nearly all nesting birds are protected under the California Fish and Game Code and the federal Migratory Bird Treaty Act. As such, disturbance of these nesting birds could result in a significant impact. **Mitigation Measure M-BI-2a, Nesting Bird Protection,** has been identified and agreed to by the project sponsor. Mitigation Measure M-BI-2a would require vegetation

[109] San Francisco Planning Department. *Standards for Bird-Safe Buildings*, https://sfplanning.org/sites/default/files/documents/reports/bird_safe_bldgs/Standards%20for%20Bird%20Safe%20Buildings%20-%2011-30-11.pdf, accessed July 30, 2021.

[110] San Francisco Planning Department, *Urban Bird Refuge Map,* 2014, https://sfplanning.org/sites/default/files/resources/2018-08/Urban%20Bird%20Refuge.pdf, accessed July 30, 2021.

removal outside of the nesting season, and if nesting season cannot be avoided, implementation of pre-construction surveys by a qualified wildlife biologist.

Wildlife from the adjacent Candlestick Point State Recreation Area may also enter the project site. Construction activities may affect wildlife traversing the site, which would result in a significant impact. **Mitigation Measure M-BI-2b, Wildlife Exclusion**, has been identified and agreed to by the project sponsor. Mitigation Measure M-BI-2b would require installation of a wildlife exclusion fence prior to construction.

Mitigation Measure M-BI-2a: Nesting Bird Protection

Nesting birds and their nests in the adjacent sensitive habitat of Candlestick Point State Recreation Area shall be protected during construction by implementation of the following:

- To the extent feasible, within 250 feet of the Candlestick Point State Recreation Area, the project sponsor shall conduct activities including, but not limited to, ground disturbance, site grading, and other construction activities that may compromise breeding birds or the success of their nests outside of the nesting season (January 15 through August 15).
- If construction activities during the bird-nesting season cannot be fully avoided within 250 feet of the Candlestick Point State Recreation Area, a qualified wildlife biologist shall conduct pre-construction nesting surveys within 72 hours prior to the start of construction or demolition. Surveys shall be repeated in construction areas that have been inactive for more than two weeks during nesting season, if the qualified wildlife biologist determines that new nesting starts may have begun in previously surveyed areas. Typical experience requirements for a "qualified biologist" include a minimum of four years of academic training and professional experience in biological sciences and related resource management activities and a minimum of two years of experience in biological monitoring or surveying for nesting birds. Surveys of suitable habitat shall be performed in the Candlestick Point State Recreation Area within 100 feet of the project site in order to locate any active nests of common bird species and within 250 feet of the project site to locate any active raptor (birds of prey) nests.
- If active nests are located during the pre-construction nesting bird surveys, a qualified biologist shall evaluate if the schedule of construction activities within 250 feet of the Candlestick Point State Recreation Area could affect the active nests; if so, the following measures shall apply, as determined by the biologist:
  - If construction within 250 feet of the Candlestick Point State Recreation Area is not likely to affect the active nest, construction may proceed without restriction; however, a qualified biologist shall regularly monitor the nest at a frequency determined appropriate for the construction activity to confirm there is no adverse effect. Spot-check monitoring frequency would be determined on a nest-by-nest basis considering the particular construction activity, duration, proximity to the nest, and physical barriers that may screen activity from the nest. The qualified biologist may revise their determination at any time during the nesting season in coordination with the planning department.
  - If it is determined that construction within 250 feet of the Candlestick Point State Recreation Area may affect the active nest, the qualified biologist shall establish a no-disturbance buffer around the nest(s) and all project work shall halt within the buffer until a qualified biologist determines the nest is no longer in use. These buffer distances shall be equivalent to the survey distances (100 feet for passerines and 250 feet for raptors); however, the buffers may

be adjusted if an obstruction, such as a building, is within line of sight between the nest and construction.

  - Modifying nest buffer distances, allowing certain construction activities within the buffer, and/or modifying construction methods in proximity to active nests shall be done at the discretion of the qualified biologist and in coordination with the planning department and the California Department of Fish and Wildlife, if necessary. Necessary actions to remove or relocate an active nest(s) shall be coordinated with the planning department and approved by California Department of Fish and Wildlife, if necessary.
  - Any work that must occur within established no-disturbance buffers around active nests shall be monitored by a qualified biologist. If adverse effects in response to project work within the buffer are observed and could compromise the nest, work within the no-disturbance buffer(s) shall halt until the nest occupants have fledged.
  - Any birds that begin nesting within the survey area amid construction activities are assumed to be habituated to construction-related or similar noise and disturbance levels, so no-disturbance buffer zones around nests may be reduced or eliminated in these cases as determined by the qualified biologist in coordination with the planning department and California Department of Fish and Wildlife, if necessary. Work may proceed within 250 feet of those active nests as long as the nests and their occupants are not directly affected.

- In the event inactive nests are observed within 250 feet of the project site at any time throughout the year, any removal or relocation of the inactive nests shall be at the discretion of the qualified biologist in coordination with the planning department and California Department of Fish and Wildlife, as appropriate. Work may proceed within 250 feet of these inactive nests.

Mitigation Measure M-BI-2b: Wildlife Exclusion

Wildlife exclusion fencing shall be installed around the proposed project footprint to isolate the active construction area from neighboring habitat and to prevent wildlife from entering the work area. The exclusion fencing shall be a minimum above-ground height of 34 inches to discourage wildlife from climbing over the fence. The fencing shall be keyed into a shallow trench 4 to 6 inches deep and backfilled with soil or gravel. If installed on pavement or hard surface, the lower edge can be weighted by a continuous row of sandbags or geotextile tubes. Installation shall be supervised by a qualified biologist. The biologist shall have the authority to direct the installation of the exclusion fencing to ensure the fence is installed in a manner that maximizes its intent and purpose to minimize impacts on wildlife. The exclusion fence shall be regularly inspected and fully maintained throughout the duration of the active construction phase. Repairs shall be made within 24 hours of discovery of breaches in the fence.

Implementation of these measures would reduce the impact to ***less than significant with mitigation***.

CONSTRUCTION AND OPERATIONAL AIR QUALITY AND NOISE IMPACTS ON WILDLIFE HABITAT

There are no adopted standards or thresholds of significance by the planning department that can be readily applied to evaluation of such effects. Some air quality effects have been documented (for example, the atmospheric deposition of air pollutants such as sulfur and nitrogen) that have been linked to changes in natural ecosystems, shifts in abundance of plants and animals, increase in disease and insect outbreaks, and changes in ecosystem processes such as nutrient cycling. However, these effects are generally attributed to

air quality changes on a regional scale, as opposed to ongoing effects of a single project. Analyses of the effects of fire, in particular, tend to focus on discreet events associated with prescribed burn programs where the issue of concern is incineration of biota, not impacts resulting from exposure to smoke.

Regarding construction noise during construction of the proposed project, assuming the use of impact pile drivers, the highest CNEL construction noise levels 1110 Donner Avenue would 69 dBA, and at the peak hour would be 71 dBA. At a distance of 75 feet from the eastern edge of the project site, where nesting habitat exists, sound levels would be higher. However, **Mitigation Measure M-NO-1, Construction Noise Control**, has been identified and agreed to by the project sponsor. This measure requires the preparation of a project-specific noise control plan to meet a performance target of construction activities not resulting in a noise level greater than 90 dBA at noise-sensitive receptors and 10 dBA above the ambient noise level at noise-sensitive receptors. Such a noise control plan would also reduce noise at nearby nesting habitats. Therefore, the impact would be **less than significant with mitigation**.

Operation of the training facility is expected to be relatively frequent, with the potential for events that generate substantial increases in noise, including sudden or episodic noise events that can startle wildlife and cause temporary or permanent nest abandonment. Such events could increase the chance of nest failure in habitat that borders the training facility. If the training events are relatively continuous, and therefore becomes the new noise environment, then birds seeking suitable breeding sites may move to other available sites, which are fairly plentiful in the Candlestick Point State Recreation Area and elsewhere in the region. Also, under continuous elevated noise conditions, nesting starts near the training facility would be considered acclimated to those levels. Most bird species expected to utilize available nesting sites within the Candlestick Point State Recreation Area would likely be species that are adaptable to relatively constant high levels of urban noise, such as house finch, European starling, mourning dove, white-crowned sparrow, etc. The proposed project is not expected to generate significant increases in background noise (i.e., noise not associated with specific training events); traffic noise would increase only slightly (less than 2 dBA), which would be barely noticeable near the project site. Stationary mechanical equipment, such as ventilation systems, would be contained behind screens to attenuate sound levels.

Training events are expected to be more episodic, for approximately 75 days per year. The loudest noise source during these events would be the sirens. Sirens would sound approximately 36 days per year (three times a year, for 4 days a week, 3 weeks in a row). The noise level generated by the sirens is estimated to be 100 dBA at 100 feet, for a duration of 10 seconds. High sound levels can produce flushing events for nesting birds, exposing nests and increasing the likelihood of predation or causing abandonment. However, because the sirens would sound only once a day and for a short period of time, the effect is not expected to be sufficient to cause reproductive failure. In addition, the proposed project would include a 12-foot-tall perimeter fence, consisting of a combination of masonry wall and steel fence that would attenuate sound levels for nest sites near ground level in the Candlestick Point State Recreation Area. Any effects also are expected to be limited to relatively common bird species (i.e., not federal or state listed or candidate species), for which ample opportunities exist for nesting in similar habitat within the region. Noise effects to such common species would be negligible because they readily adapt to brief disturbances. Therefore, the impact would be ***less than significant***.

During operation of the proposed project, live-fire emissions would be produced from combustion of wood/hay and propane to provide heat and smoke for training. As indicated in Section E.8, Air Quality, with implementation of **Mitigation Measure M-AQ-4, Design and Maintenance Standards for Exhaust Capture Control Systems for Live-Fire Training Operations,** the proposed project would not result in off-site toxic

air contaminant emissions above the significance thresholds (for human receptors). This implies that the very low level of such emissions would disperse rapidly and not cause disruption of breeding in the adjacent open space. Therefore, the impact would be ***less than significant with mitigation***.

SUMMARY

For the reasons stated above, the proposed project impacts to migratory birds would be ***less than significant with mitigation***.

Impact BI-3: The proposed project would not conflict with the City's local tree ordinance. (Less than Significant)

The project site does not contain any protected trees as defined by the City's Urban Forestry Ordinance, Public Works Code section 801, et seq.[111] Pursuant to the City's Green Landscaping Ordinance, the proposed project would install 113 trees along the curb edges of the project site, within a 5-foot landscaping strip.[112] Therefore, the proposed project would not conflict with the City's local tree ordinance, and this impact would be ***less than significant***. No mitigation would be required.

Impact C-BI-1: The proposed project, in combination with cumulative projects, would not result in a cumulative impact related to biological resources. (Less than Significant)

The project site and the surrounding area do not support any candidate, sensitive, or special-status species. The nearest wetlands are located at Yosemite Slough, 300 feet north of the project site. Cumulative development projects identified in **Table 4**, would also be subject to the requirements of the Migratory Bird Treaty Act, California Fish and Game Code, and the City's bird-safe building standards and Urban Forestry Ordinance. Therefore, the proposed project would not combine with cumulative development projects to result in a cumulative impact related to biological resources and cumulative impacts would be ***less than significant***. No mitigation would be required.

16. Geology and Soils

Topics:	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact	Not Applicable
Would the project: a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:					

[111] San Francisco Public Works Code, *Article 16: Urban Forestry Ordinance*, 1995, https://sfenvironment.org/sites/default/files/agenda/attach/public_works_code_groves_explanatory_documents_consolidated.pdf, accessed July 2021.

[112] San Francisco Planning Department, *Guide to San Francisco Green Landscaping Ordinance*, 2010, https://default.sfplanning.org/publications_reports/Guide_to_SF_Green_Landscaping_Ordinance.pdf, accessed July 2021.

Topics:	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact	Not Applicable
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐	☐
iv) Landslides?	☐	☐	☒	☐	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐	☐
c) Be located on geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐	☐

The proposed project would connect to San Francisco's sewer and stormwater collection and treatment system. It would not use a septic water disposal system. Therefore, Topic E.16(e) is not applicable to the proposed project.

This section describes the geology, soils, and seismicity characteristics of the project area as they relate to the proposed project and relies on the information and findings from a geotechnical characterization from subsurface exploration that was conducted for the project site and proposed project.[113] The geotechnical characterization includes field exploration and borings, a review of available geologic and geotechnical data for the site vicinity, an engineering analysis of the proposed project in the context of geologic and geotechnical site conditions, and project-specific design and construction recommendations.

[113] San Francisco Department of Public Works, *SFFD Fire Training Facility: Geotechnical Characterization from Subsurface Exploration,* September 10, 2021.

The project site, at 17 feet above sea level, generally slopes downward from south to north. Average elevation of the project site is 17 feet above mean seal level. The project site was located in the San Francisco Bay until 1938 where evidence of bay filling was observed that resulted in the raising of the western corner of the target site above water. In 1946 and 1956, additional filling was conducted, which resulted in the northern corner and southeast corner of the site to be above water. By 1963, the entire site had been filled and raised above water.[114]

Boring logs from the geotechnical characterization indicate that the site is blanketed by artificial fill that is up to 15 feet thick at Carroll Avenue. This fill generally thickens heading toward Yosemite Avenue to as much as 32 feet thick. The northeastern and central portions of the site lie beyond the historic San Francisco Bay shoreline; this area is underlain by 3 feet of Young Bay Mud. Across the site, alluvial soils are present between depths of approximately 25 to 95 feet, and Old Bay Mud is present between depths of approximately 85 and 105 feet. Bedrock is present at a depth of approximately 15 feet at Carroll Avenue and slopes downward to a depth of 140 feet at the northeastern edge of the project site. Groundwater has been recorded at depths of 10 feet.

To establish foundations and ground improvements, the proposed project would require a combination of excavation and ground improvement to a depth of 20 feet across the 300,000-square-foot project site, resulting in 17,000 cubic yards of excavation. Ground improvement would minimize earthquake-induced liquefaction ground settlement. Individual buildings and structures would be supported by a mix of shallow foundations (such as mat and spread footings) and deep foundations (comprising piles installed to a depth of 100 feet using a mix of vibratory and impact hammers). These foundations would be designed for anticipated building loads and forces caused by liquefaction induced in the fill, as well as possible consolidation settlement.[115] As part of the building permit review process, project plans would be reviewed for conformance with the geotechnical characterization recommendations for the proposed project.

APPLICABLE REGULATIONS

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 (Alquist-Priolo Act). The Alquist-Priolo Act (Public Resources Code section 2621 et seq.) is intended to reduce the risk to life and property from surface fault rupture during earthquakes. The Alquist-Priolo Act prohibits the location and construction of most types of structures intended for human occupancy[116] over active fault traces and strictly regulates construction in the corridors along active faults (i.e., earthquake fault zones).

State Building Code Chapters 18 and 16. Chapter 18, Soils and Foundations, of the state building code provides the parameters for geotechnical investigations and structural considerations in the selection, design, and installation of foundation systems to support the loads from the structure above. Section 1803 (Geotechnical Investigations) sets forth the scope of geotechnical investigations conducted. Section 1804 (Excavation, Grading and Fill) specifies considerations for excavation, grading, and fill to protect adjacent structures and to prevent destabilization of slopes due to erosion and/or drainage. In particular, Section 1804.1 (Excavation Near Foundations) requires that adjacent foundations be protected against a reduction in lateral support as a result of project excavation. This is typically accomplished by underpinning or protecting

[114] AEW Engineering Inc., *Phase I Environmental Site Assessment Report 1236 Carroll Ave, San Francisco CA*, July 16, 2021

[115] San Francisco Public Works Bureau of Engineering. SFFD Fire Training Facility Structural Design Narrative. Undated. Included in the Public Project Application for 1235 Carroll Avenue, submitted May 11, 2021.

[116] With reference to the Alquist-Priolo Act, a structure for human occupancy is defined as one "used or intended for supporting or sheltering any use or occupancy, which is expected to have a human occupancy rate of more than 2,000 person-hours per year" (California Code of Regulations, title 14, division 2, section 3601[e]).

said adjacent foundations from detrimental lateral or vertical movement, or both. Section 1807 (Foundation Walls, Retaining Walls, and Embedded Posts and Poles) specifies requirements for foundation walls, retaining walls, and embedded posts and poles to ensure stability against overturning, sliding, and excessive pressure, and water lift, including seismic considerations. Sections 1808 through 1810 (Foundations) specify requirements for foundation systems based on the most unfavorable loads specified in Chapter 16, Structural, for the structure's seismic design category in combination with the soil classification at the project site. The San Francisco Department of Building Inspection (building department) reviews project plans for conformance with the recommendations in project-specific geotechnical report during its review of the building permit for a project and may require additional site-specific soils report(s) through the building permit application process.

State Seismic Hazards Mapping Act of 1990 (Landslide and Liquefaction Hazard Zones). Pursuant to the Seismic Hazards Mapping Act of 1990 (seismic hazards act), the California State Geologist has designated seismic hazard zones for landslide and liquefaction hazards. These mapped areas enable cities and counties to adequately prepare the safety element of their general plans and to encourage land use management policies and regulations to reduce and mitigate those hazards in order to protect public health and safety.[117]

Projects located within a seismic hazard zone for liquefaction or landslide hazard are subject to the seismic hazards act requirements, which include the preparation of a geotechnical investigation by qualified engineer and/or geologist to delineate the area of hazard and to propose measures to address any identified hazards. The local building official must incorporate the recommended measures to address such hazards into the conditions of the building permit.

SAN FRANCISCO BUILDING CODES

Building Department Permit Review Process. San Francisco relies on the state and local regulatory review process for review and approval of building permits pursuant to the following:

- California Building Standards Code (California Code of Regulations, title 24)
- San Francisco Building Code, which is the state building code, plus local amendments (including administrative bulletins) that supplement the state code
- Building department's implementing procedures, including information sheets
- Seismic Hazards Mapping Act of 1990 (Public Resources Code sections 2690 to 2699.6)
- Administrative Bulletin No. AB-82 provides guidelines and procedures for structural, geotechnical, and seismic hazard engineering design review.[118]
- Information Sheet No. S-05 identifies the type of work for which geotechnical reports are required, such as for new construction, building additions, and grading, and report submittal requirements.[119]

Mandatory Interdepartmental Project Review. Projects that involve new construction of a building eight stories or more, new construction in a seismic hazard zone for liquefaction hazard, or new construction in a seismic hazard zone for landslide hazard are subject to a mandatory interdepartmental project review prior

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117 In the context of the seismic hazards act, "mitigation" refers to measures that are consistent with established practice and that will reduce seismic risk to acceptable levels, rather than the mitigation measures that are identified under the California Environmental Quality Act (CEQA) to reduce or avoid environmental impacts of a proposed project.

118 San Francisco Department of Building Inspection, *Administrative Bulletin No. AB-082, Guidelines and Procedures for Structural, Geotechnical, and Seismic Hazard Engineering Design Review*, November 21, 2018, https://sfdbi.org/sites/default/files/AB-082.pdf.

119 San Francisco Department of Building Inspection, *Information Sheet No. S-05, Geotechnical Report Requirements*, May 7, 2019, https://sfdbi.org/sites/default/files/IS%20S-05.pdf.

to a public hearing before the planning commission or the issuance of the new construction building permit. The interdepartmental review meeting must include representatives from the planning, building, public works, and fire departments to address compliance with applicable codes, and design and project construction considerations.[120]

San Francisco Public Works Code. Section 146, Construction Site Runoff Control, requires that all construction sites must implement best management practices to minimize surface runoff erosion and sedimentation. In addition, pursuant to section 146.7 if construction activities would disturb 5,000 square feet or more of ground surface, then the project sponsor must have an Erosion and Sediment Control Plan (erosion and sediment control plan) developed and submit a project application to the San Francisco Public Utilities Commission prior to commencing construction-related activities. An erosion control plan is a site-specific plan that details the use, location and emplacement of sediment and erosion control devices.

Impact GE-1: The proposed project would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, or landslides, and would not be located on unstable soil that could result in lateral spreading, subsidence, liquefaction, or collapse. (Less than Significant)

To ensure that the potential for adverse effects related to geology and soils are adequately addressed, the City relies on the state and local regulatory process for review and approval of building permits pursuant to the California Building Code and the San Francisco Building Code, which is the state building code plus local amendments that supplement the state code, including the building department's administrative bulletins. The applicable state and local regulations applicable to this proposed project are described above.

The project site is within an area identified as a liquefaction seismic hazard zone. Based on the characterization of subsurface conditions, the primary geotechnical issues for the site include the following:

- Presence of uncontrolled and undocumented fill
- Potential for liquefiable soils or weak soils near proposed improvements
- Presence of weak, compressible Young Bay Mud beneath the fill
- Sloping surface of competent soil/bedrock

To establish foundations and ground improvements, the proposed project would require a combination of excavation and ground improvement across the 317,300-square-foot project site to a depth of 20 feet across the project site, resulting in 17,000 cubic yards of excavation. Ground improvement would minimize earthquake-induced ground settlement across the site. Any of the following ground-improvement methods may be used:

- Vibro-compaction
- Vibro-replacement, such as stone columns
- Dynamic methods, such as deep dynamic compaction
- Earthquake drains
- Other deep soil mixing with interconnected shear walls

[120] San Francisco Planning Department. *Interdepartmental Project Review,* http://forms.sfplanning.org/ProjectReview_ApplicationInterdepartmental.pdf

To address Young Bay Mud consolidation beneath the site, ground improvement may also include surcharging or pre-loading, with or without wick drains, to speed consolidation and reduce settlement, drilled-displacement columns, or deep soil mixing with interconnected shear walls.

The proposed project would include a retaining wall around the perimeter of the site where the difference in elevation between the finished grade of the project site and the grade of the surrounding streets is greater than 2 feet, specifically along Armstrong Avenue and the northern portions of Hawes Street and Griffith Street.

To support the buildings and structures, a mix of shallow foundation and deep foundation options are under consideration. Shallow foundation options include mat foundations or spread footings. Deep foundations could include H piles, torque down steep pipe piles, auger-cast-in-place piles, or pre-cast concrete piles. Piles could require deep installation to a maximum depth of 100 feet; such piles would be installed with a combination of vibratory and impact hammers.

During the building department's review of building permit application, the building department would review the construction plans for conformance with recommendations in the project-specific geotechnical report. In addition, the building permit application would be reviewed pursuant to the building department's implementation of the California Building Code and San Francisco Building Code, including administrative bulletins, local implementing procedures such as the building department information sheets, and state laws, regulations, and guidelines would ensure that the proposed project would have no significant impacts related to soils, seismic, or other geological hazards. Thus, the proposed project's impact related to soils, seismic, or other geological hazards would be ***less than significant***, and no mitigation would be required.

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

The project site is occupied by existing surface pavement, and a portion of that pavement has been further covered by dirt, gravel, and debris from construction laydown activities. The proposed project would require 300,000 square feet of surface soil disturbance and 17,000 cubic yards of excavation. Maximum depth of excavation is estimated to be 20 feet below ground surface, and piles would be installed to a maximum depth of 100 feet, which could create the potential for windborne and waterborne soil erosion. Sloping terrain is more susceptible to soil erosion than flat terrain. Due to the sloping nature of the project site, with elevation decreases from south to north, soil erosion could occur.

Grading and excavation would expose topsoil on site and could potentially result in erosion. However, the project sponsor and its contractor would be required to comply with San Francisco Public Works Code section 146, Construction Site Runoff Control, which requires all construction sites to implement best management practices to minimize surface runoff erosion and sedimentation.[121] Pursuant to section 146.7, if construction activities disturb 5,000 square feet or more of ground surface, the project sponsor must develop an erosion and sediment control plan. The erosion and sediment control plan must be submitted to the SFPUC for review and approval prior to commencing construction-related activities. The erosion and sediment control plan would identify best management practices to control discharge of sediment and other pollutants from entering the city's combined sewer system during construction. Compliance with section 146

[121] San Francisco Public Utilities Commission, San Francisco Construction Site Runoff Control Program, 2018, https://sfpuc.org/construction-contracts/design-guidelines-standards/stormwater-management, accessed July 2021.

would ensure that the proposed project would not result in substantial loss of topsoil or soil erosion. Therefore, impacts related to loss of topsoil or substantial soil erosion during construction would be ***less than significant***, and no mitigation would be required.

Impact GE-3: The project site would not be located on a geologic unit or soil that is unstable, or that could become unstable as a result of the project. (Less than Significant)

As described in the geotechnical characterization, the project site is located on uncontrolled and undocumented fill, liquefiable soils, and weak soils. Design and construction would follow final geotechnical recommendations. Preliminary recommendations include a mix of ground-improvement measures to a depth of 20 feet, as well as a mix of shallow mat/spread footing foundations and deep-pile foundations to a depth of 100 feet. In addition, the proposed project would be required to comply with the mandatory provisions of the California Building Code and San Francisco Building Code. Adherence to these requirements would further ensure that the project sponsor adequately addresses any potential impacts related to unstable soils as part of the design-level geotechnical investigation that would be prepared for the proposed project. Therefore, any potential impacts related to unstable soils would be ***less than significant***, and no mitigation measures would be required.

Impact GE-4: The proposed project would not create substantial risks to life or property as a result of being located on expansive soil. (Less than Significant)

Expansive soils are typically very fine grained with a high percentage of clay and can damage structures and buried utilities and increase maintenance requirements. Expansive soils expand and contract in response to changes in soil moisture, most notably when nearby surface soils change from saturated to a low-moisture content condition and back again. The expansion potential of the project site soil, as measured by its plasticity index, will be determined upon conclusion of the geotechnical studies. Nonetheless, the San Francisco Building Code would require an analysis of the project site's potential for soil expansion impacts and, if applicable, implementation of measures to address them as part of the design-level geotechnical investigation prepared for the proposed project. Therefore, potential impacts related to expansive soils would be ***less than significant***, and no mitigation measures would be required.

Impact GE-5: The proposed project would not directly or indirectly destroy a unique geologic feature of the site. (No Impact)

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

Impact GE-6: The proposed project could directly or indirectly destroy a unique paleontological resource or site. (Less than Significant)

Paleontological resources are the fossilized evidence of past life found in the geologic record. Fossils are preserved in sedimentary rocks, which are the most abundant rock type exposed at the surface of the earth. Despite the abundance of these rocks, and the vast numbers of organisms that have lived through time, preservation of plant or animal remains as fossils can be a rare occurrence. In many cases, fossils of animals and plants occur only in limited areas and in small numbers relative to the distribution of the living

organisms they represent. Fossils of vertebrates—animals with backbones—are sufficiently rare to be considered nonrenewable resources.

The probability for finding paleontological resources can be broadly predicted from the geologic units present at or near the surface. Therefore, geologic mapping classifications of soil units can be used for assessing the potential for the occurrence of paleontological resources.[122]

The project site was once underwater and was backfilled between the 1930s and 1960s. The proposed project would require excavation to a depth of approximately 20 feet, as well as pile installation to a depth of up to 100 feet. Based on the known history of the subsurface, it is unlikely to yield any fossils. Therefore, impacts on paleontological resources would be ***less than significant***.

Impact C-GE-1: The proposed project, in combination with cumulative projects, would not result in a cumulative impact related to geology and soils. (Less than Significant)

Environmental impacts related to geology and soils are generally site specific. All development within San Francisco is subject to the seismic safety standards and design review procedures of the California Building Code and San Francisco Building Code and to construction site runoff regulations of section 146 of the public works code. These regulations ensure that cumulative effects of development on seismic safety, geologic hazards, and erosion would be less than significant. For these reasons, the proposed project would not combine with cumulative projects in the project vicinity to create a significant cumulative impact related to geology and soils.

Additionally, impacts related to paleontology are generally site specific and limited to a project's construction area. Therefore, the proposed project would not have the potential to combine with effects of cumulative projects to result in cumulative impacts on paleontological resources.

17. Hydrology and Water Quality

Topics:	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact	Not Applicable
Would the project:					
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	☐	☐	☒	☐	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would:	☐	☐	☒	☐	☐

[122] Bureau of Land Management, *Potential Fossil Yield Classification System for Paleontological Resources on Public Lands*, July 8, 2016, https://www.blm.gov/sites/blm.gov/files/uploads/IM2016-124_att1.pdf.

Topics:	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact	Not Applicable
i) Result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐	☐
ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off-site;	☐	☐	☒	☐	☐
iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐	☐
iv) Impede or redirect flood flows?	☐	☐	☒	☐	☐
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due a project inundation?	☐	☐	☒	☐	☐
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐	☐

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

Proposed project-related wastewater and stormwater would flow to the city's combined stormwater/sewer system via sewer laterals extending from buildings, via various existing catch basins in the public right-of-way around the site, and via newly constructed catch basins on Hawes Street, ultimately draining to the existing 18-foot-wide transport/storage box sewer beneath Bancroft Street.

All discharge would then be treated to standards contained in the City's National Pollutant Discharge Elimination System Permit for the Southeast Water Pollution Control Plant prior to discharge into San Francisco Bay. The National Pollutant Discharge Elimination System standards are set and regulated by the San Francisco Bay Regional Water Quality Control Board. Therefore, because the proposed project's wastewater and stormwater would be treated at the Southeast Water Pollution Control Plant to state standards, the proposed project would not conflict with San Francisco Bay Regional Water Quality Control Board requirements.

Construction Dewatering and Stormwater Runoff

The proposed project would be required to comply with San Francisco Public Works Code article 4.2, section 146 (Construction Site Runoff Control) and section 147 (Stormwater Management). The purpose of the City's construction site runoff control program is to protect water quality by controlling the discharge of sediment or other pollutants from construction sites and preventing erosion and sedimentation due to construction activities. The intent of the City's stormwater management program is to reduce the volume of stormwater entering the city's combined and separate sewer systems and to protect and enhance the water quality of receiving waters, pursuant to, and consistent with federal and state laws, lawful standards, and orders

applicable to stormwater and urban runoff control, and the City's authority to manage and operate its drainage systems.

As described in Section E.16, Geology and Soils, the proposed project would be required to implement best management practices to control construction site runoff. The site resides in a combined sewer area and has been determined to trigger compliances with the San Francisco Stormwater Management Requirements and Design Guidelines, which requires sites with existing imperviousness of greater than 50 percent to reduce the stormwater runoff rate and volume by 25 percent relative to pre-design conditions for the two-year, 24-hour design storm.

The proposed project would also be required to comply with the Maher Ordinance (San Francisco Health Code article 22A), which requires further site management and reporting requirements for potential hazardous soils (see Impact HZ-2 for a discussion of the Maher Ordinance).

As discussed under Section E.16, Geology and Soils, groundwater has been encountered at a depth of 10 feet. Therefore, dewatering for the proposed project is likely necessary during construction. If any groundwater is encountered during construction, it would be discharged into the combined stormwater/sewer system and subject to the requirements of the San Francisco Sewer Use Ordinance (Ordinance No. 19-92,[123] amended by Ordinance No. 116-97), as supplemented by San Francisco Public Works Order No. 158170.[124]

To comply with these regulations, if dewatering is necessary during construction, a Batch Wastewater Discharge Permit would be required by the San Francisco Public Utilities Commission for "non-routine, occasional, or other temporary discharges, such as dewatering of construction sites."[125] A permit may be issued only after laboratory analysis of potential pollutants, and if an effective pretreatment system is maintained and operated. Each permit for such discharge would contain specified water quality standards and may require the project sponsor to install and maintain meters to measure the volume of the discharge to the combined sewer system.

Construction activities such as excavation would expose soil and could result in erosion and excess sediments being carried in stormwater runoff to the combined stormwater/sewer system. In addition, stormwater runoff from temporary on-site use and storage of vehicles, fuels, waste, and other hazardous materials could carry pollutants to the combined stormwater/sewer system if proper handling methods are not employed. As discussed in Section E.16, Geology and Soils, the proposed project would be required to develop and implement an erosion and sediment control plan that would identify best management practices to control discharge of sediment and other pollutants from entering the city's combined sewer system during construction. Further, runoff from the project site would drain into the city's combined stormwater/sewer system, ensuring that such runoff is properly treated at the Southeast Treatment Plant before being discharged into San Francisco Bay.

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123 City and County of San Francisco, *Industrial Waste Ordinance #19-92*, 2008, https://sfpublicworks.org/sites/default/files/Industrial_Waste_Ordinance-19-92.pdf, accessed July 30, 2021.

124 City and County of San Francisco, *San Francisco Public Works Order No. 158170, Industrial Waste Discharge Limits into City's Sewerage System*, 2008, https://infrastructure.sfwater.org/fds/fds.aspx?lib=SFPUC&doc=619040&data=238330400, accessed July 30, 2021.

125 San Francisco Public Utilities Commission, *Batch Wastewater Discharge Permit Application Instructions*, 2019, https://sfpuc.org/sites/default/files/programs/BatchWastewaterDischarge-Instructions.pdf, accessed August 10, 2021.

Operational Wastewater Discharges

The combined sewer line currently serving the project site is an 18-foot-wide transport/storage box. In compliance with the San Francisco Stormwater Management Requirements, both stormwater volume and peak flow would be reduced. Non-stormwater flow from site operations may drain to the combined sewer, but according to internal communications within Public Works, in the proposed project condition, there is not capacity issue connecting the project to this transport/storage box.[126]

During operation, wastewater discharges would be related to the training and administrative uses. At-grade surfaces would be graded to direct runoff water from fire-training exercises to drop inlets, which would direct flows to mechanical filtration systems before discharging to the combined stormwater/sanitary sewer system. Given that the fire training operations would use substantially less than 25,000 gallons per day, an Industrial User Wastewater Discharge Permit is unlikely to be required from the SFPUC Wastewater Enterprise/Collection System Division.

Operational Stormwater Discharges

Operational stormwater discharges would include runoff from streets, sidewalks, and other impervious surfaces. Discharges from the proposed project or project variants would be subject to the permit requirements of public works code article 4.1 and supplemented by public works order no. 158170. Wastewater and stormwater generated at the project site would be directed to the city's combined sewer system and treated to the standards of the National Pollutant Discharge Elimination System permit for the Southeast Water Pollution Control Plant prior to discharge to San Francisco Bay.

The proposed project would not result in an increase in impervious surfaces. The site is already 100 percent impervious, consisting entirely of asphalt, although approximately 75,000 square feet of that paving (~25 percent of the project site) is partially covered with a surface layer of sediment and debris from construction laydown activities. The proposed site condition consists of approximately 266,750 square feet impervious surface (~93 percent) and 21,250 square feet of pervious surface (~7 percent).

In accordance with the City's stormwater management ordinance, a stormwater control plan is required to be submitted for review and approval by the San Francisco Public Utilities Commission. The stormwater control plan must comply with the Stormwater Design Guidelines and meet performance measures set by the San Francisco Public Utilities Commission related to the proposed project's stormwater runoff rate and volume. To ensure that the proposed project meets the San Francisco Public Utilities Commission's requirements, low-impact development features are proposed and would include a stormwater catchment system designed using best management practices in accordance with existing San Francisco Public Utilities Commission regulations and standards.

Stormwater management features, such as bioswales along the project site perimeter, would be designed to reduce the stormwater runoff rate and volume by 25 percent relative to pre-development conditions for the two-year, 24-hour design storm, as required for sites with existing imperviousness of greater than 50 percent, although a modification of performance requirements could result in a decrease in volume reduction requirements up to a minimum of 10 percent, in conjunction with a 1:1 ratio of increased peak-rate reduction up to a maximum of 40 percent. The proposed project may be eligible for a modification of performance requirements due to a potential combination of high groundwater and poorly infiltrating soils. The proposed

[126] Bear, Nicholas, personal communication, June 17, 2021.

project must be evaluated for potential rainwater harvesting in order to be eligible for modified compliance, and a Modified Compliance Application must be submitted prior to a preliminary Stormwater Control Plan.

Stormwater Best Management Practices may also be implemented in the adjacent public right-of-way (i.e., sidewalks) to comply with standard performance requirements.[127] This would reduce peak flows entering the combined sewer system during wet-weather events and minimize the potential for downstream or localized flooding. Compliance with San Francisco's Stormwater Design Guidelines would reduce the quantity and rate of stormwater runoff to the city's combined sewer system and improve the water quality of those discharges.

According to San Francisco Public Utilities Commission Combined Sewer System Best Management Practices Sizing Calculator,[128] under the existing condition for the two-year, 24-hour storm, the runoff volume is 60,850 cubic feet and the peak flow is 7.90 cubic feet per second. Therefore, to comply with the standard 25 percent reductions, the proposed condition runoff volume and peak flow must both be reduced to 45,640 cubic feet and 5.93 cubic feet per second, respectively. If a modification of performance requirements is applied, a proposed condition runoff volume could be allowed as high as 54,765 cubic feet (10 percent reduction), with a corresponding proposed condition peak flow rate of 4.74 cubic feet per second (40 percent reduction).

These reductions would be achieved by implementing stormwater best management practices capable of evapotranspiration, detention, and/or retention. The proposed project would minimize disruption of natural hydrology by implementing low-impact design approaches such as reduced impervious cover, reuse of stormwater, or increased infiltration.

For these reasons, the proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade water quality. This impact would be ***less than significant***, and no mitigation would be required.

Impact HY-2: The proposed project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level. (Less than Significant)

The project site is within the boundaries of the South San Francisco Groundwater Basin.[129] This basin is not used as a potable water source, and there are no plans to develop this basin for groundwater production. As discussed under Section E.16, Geology and Soils, groundwater has been encountered at a depth of 10 feet. Therefore, dewatering for the proposed project would be necessary during construction. If groundwater were encountered during on-site excavation, dewatering activities would be necessary. Construction dewatering, if necessary, would represent a temporary condition on the underlying groundwater table.

The proposed project would not require long-term dewatering and does not propose to extract any underlying groundwater supplies. The proposed project is required to comply with the City's Stormwater Design Guidelines, including the requirement to maintain a post-construction runoff rate and volume 25 percent below pre-development conditions for a two-year, 24-hour design storm. In addition, given the project site location on San Francisco Bay fill and one block (approximately 330 feet) south of Yosemite

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127 San Francisco Public Utilities Commission, *Stormwater Management Requirements and Design Guidelines*, 2016, https://sfwater.org/Modules/ShowDocument.aspx?documentID=9026, accessed July 30, 2021.

128 San Francisco Public Utilities Commission, Combined Sewer Area BMP Sizing Calculator v.2.2.1, 2021, https://sfpuc.org/sites/default/files/construction-and-contracts/design-guidelines/BMP_CSS-Sizer_v221_210701.xlsm, accessed August 4, 2021.

129 State of California Department of Water Resources, DWR Mapping Tool, https://sgma.water.ca.gov/webgis/index.jsp?appid=gasmaster&rz=true, accessed July 30, 2021.

Slough, groundwater elevation at this location is heavily influenced by the water elevation in San Francisco Bay, as opposed to conditions at the project site, and groundwater is likely saline or brackish and unsuitable for potable supply.

For these reasons, the proposed project would not deplete groundwater supplies or substantially interfere with groundwater recharge. This impact would be ***less than significant***, and no mitigation would be required.

Impact HY-3: The proposed project would not result in altered drainage patterns that would cause substantial erosion or flooding or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems. (Less than Significant)

No streams or rivers exist at the project site. Therefore, the proposed project would not alter the course of a stream or river or substantially alter the existing drainage pattern of the project site or area. During the construction of the proposed project, a potential for erosion and transportation of soil particles would exist, but as stated in Impact HY-1, the proposed project would be subject to and be required to comply with regulations that limit the amount of runoff from the project site. The existing project site is covered with impervious surfaces, and a portion of that impervious area is further covered with dirt, gravel, and debris from construction laydown activities. The proposed building footprints, fire-training structures, and pavement would cover most the project site, with the exception of a 5-foot-wide landscaped perimeter. The proposed project would not result in an increase in impervious surface. The proposed project is required to comply with the City's Stormwater Design Guidelines, including the requirement to maintain a post-construction runoff rate and volume at least 25 percent below pre-development conditions for a two-year, 24-hour design storm. Therefore, the proposed project would not result in altered drainage patterns that would cause substantial erosion or flooding or contribute runoff that would exceed the capacity of existing or planned stormwater drainage systems and impacts would be ***less than significant***. No mitigation would be required.

Impact HY-4: The proposed project would not risk release of pollutants due a project inundation in flood hazard, tsunami, or seiche zones. (Less than Significant)

According to the San Francisco Public Utilities Commission 100-Year Storm Flood Risk Map, the project site is not within a 100-year flood hazard area.[130] In addition, incorporating between 3 feet and 5.5 feet of sea level rise by 2100 (as projected in the San Francisco Sea Level Rise Action Plan), the project site would not be inundated by a 100-year storm surge event.[131, 132]

The project site is in an area identified as being subject to potential inundation in the event of a tsunami along the San Francisco coast.[133] Tsunamis are large sea waves generated by underwater earthquakes, or similar large-scale, short-duration phenomena, such as volcanic eruptions, that can cause considerable damage to low-lying coastal areas. Seiches are waves—also caused by large-scale, short-duration

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130 San Francisco Public Utilities Commission, *100-Year Storm Flood Risk Map*, 2019, https://sfplanninggis.org/floodmap/, accessed July 30, 2021.

131 City and County of San Francisco, *Sea Level Rise Action Plan*, March 2016, https://sfpublicworks.org/sites/default/files/2%20160309_SLRAP_Executive%20Summary_ED_0.pdf, accessed July 30, 2021.

132 Bay Conservation and Development Commission. *Adapting to Rising Tides Bay Shoreline Flood Explorer*, https://explorer.adaptingtorisingtides.org/home, accessed July 30, 2021.

133 City and County of San Francisco, *Community Safety Element of the San Francisco General Plan*, 2012, Map 5 (Tsunami Hazard Zones San Francisco) and Map 6 (Potential Inundation Areas Due to Reservoir Failure), http://www.sf-planning.org/ftp/General_Plan/Community_Safety_Element_2012.pdf, accessed July 30, 2021.

phenomena that result from the oscillation of confined bodies of water (such as reservoirs, lakes, and bays)—that may also damage low-lying adjacent areas, although not as severely as tsunamis.

The expected 100-year wave run-up height from a tsunami at South Basin and Yosemite Sough is 4.2 feet.[134, 135] Even with a sea level rise of 3 to 5.5 feet, development of the fire-training facility (approximately 17 feet above Yosemite Slough) would be several feet above this potential tsunami wave run-up elevation (approximately 9.7 feet), as well as above less severe seiche waves. Therefore, the impacts from tsunami and seiche inundation would be ***less than significant***. No mitigation would be required.

Impact C-HY-1: The proposed project, in combination with the cumulative projects, would result in less than significant cumulative impacts on hydrology and water quality. (Less than Significant)

The proposed project would result in a less-than-significant impact with respect to release of pollutants due to inundation. Therefore, the proposed project would not have the potential to combine with cumulative development projects to result in a cumulative impact related to this topic.

Like the proposed project, all cumulative development projects identified in **Table 4**, and shown in **Figure 9**, would be required to comply with the City's stormwater management ordinance and guidelines, and all stormwater and wastewater would be treated to the standards in the City's National Pollutant Discharge Elimination System permit. Therefore, cumulative impacts related to increased runoff and water quality would be **less than significant**.

Regarding impacts to groundwater, the South San Francisco Groundwater Basin is not a potable water source. Further, upon completion of construction activities, the proposed project would have no impact on groundwater levels, which are primarily influenced by the water elevation of San Francisco Bay and Yosemite Slough, approximately 330 feet to the north. For these reasons, the proposed project would not combine with cumulative development projects to result in cumulative groundwater impacts.

Overall, the proposed project would not combine with cumulative projects to result in cumulative impacts to hydrology and water quality. No mitigation would be required.

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134 Garcia, A.W. and Houston, J.R., 1975. *Type 16 Flood Insurance Study: Tsunami Predictions for Monterey and San Francisco Bays and Puget Sound*, United States Army Corps of Engineers Technical Report H-75-17, Figure 58, converted to SFCD, https://usace.contentdm.oclc.org/digital/collection/p266001coll1/id/4802/, accessed July 30, 2021.

135 This value is expressed according to the National Geodetic Vertical Datum of 1929. The San Francisco City Datum is a local vertical geodetic reference system specific to the City and County of San Francisco and formally established in 1964 as 8.61 feet above the National Geodetic Vertical Datum of 1929. City & County of San Francisco Department of Public Works. https://bsm.sfdpw.org/subdivision/benchmark/DatumPlanes.aspx, accessed July 30, 2021.

18. Hazards and Hazardous Materials

Topics:	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact	Not Applicable
Would the project:					
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☒	☐	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐	☐
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☐	☒

The project site is not located within an airport land use plan area or within an airport land use plan, or within two miles of a public airport or public use airport—which would result in a safety hazard or excessive noise for people residing or working in the area—and is not located within or adjacent to a wildland area. Therefore, topics E.18(e) and E.18(g) are not applicable to the proposed project.

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

Project construction would involve the use of potentially hazardous materials such as vehicle fuels and fluids that could be released should an accidental leak or spill occur. However, standard construction best

management practices for the use and handling of such materials would be implemented to avoid or reduce the potential for such conditions to occur. Any use of potentially hazardous material during construction of the proposed project would comply with local, California Highway Patrol, and federal regulations regarding the handling of potentially hazardous materials.

During operations, two underground fiberglass fuel-oil tanks (one 12,000-gallon diesel tank and one 6,000-gallon gasoline tank) would be used for fire department apparatus refueling. In addition, propane would be stored in a metal 12,000-gallon grade tank securely anchored to a raised concrete pad. The tank would be used to induce burning on live-fire props.

Project operations would include the use of common hazardous materials such as cleaning products and fuels, as well fire retardant stored in a protective location. After use during training activities, water and fire retardant would flow to drop inlets, which would direct flows to mechanical filtration systems before discharging to the combined stormwater/sewer system.

The proposed project would be subject to San Francisco Health Code articles 21 and 22, implemented by the San Francisco Department of Public Health (public health department) to ensure employee safety by identifying hazardous materials in the workplace, providing safety information to workers who handle hazardous materials, and adequately training workers. Under article 21, any facility that handles hazardous materials, including hazardous wastes, in excess of specified quantities would be required to obtain a certificate of registration from the public health department and to implement a hazardous materials business plan that includes inventories, a program for reducing the use of hazardous materials and generation of hazardous wastes, site layouts, a program and implementation plan for training all new employees and annual training for all employees, and emergency response procedures and plans. Under San Francisco Health Code article 22, generators of hazardous waste must pay an annual fee to the public health department based on the quantity of hazardous wastes generated annually. The project sponsor would be required to update its hazardous materials business plan for the fire-training facility. For these reasons, hazardous materials used during operation would not pose substantial public health or safety hazards resulting from routine use, transport, or disposal.

The impact of the proposed development on the public and the environment related to the routine transport, use, and handling of hazardous materials therefore would be **less than significant**.

Impact HZ-2: The proposed project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. (Less than Significant)

NATURALLY OCCURRING ASBESTOS

Based upon mapping conducted by the U.S. Geological Survey, the project site may be underlain by serpentine rock.[136] The proposed project would involve soil disturbance throughout the project site, potentially releasing serpentinite into the atmosphere.

Health Effects of Serpentinite

Serpentinite commonly contains naturally occurring chrysotile asbestos or tremolite-actinolite, a fibrous mineral that can be hazardous to human health if airborne emissions are inhaled. In the absence of proper

[136] San Francisco Planning Department, GIS Layer, "Areas Affected by Serpentine Rocks." Created February 25, 2010 from U.S. Geological Survey and San Francisco Department of Public Health data.

controls, naturally occurring chrysotile asbestos could become airborne during the excavation and handling of excavated materials. On-site workers and the public could be exposed to airborne asbestos unless appropriate control measures are implemented. Exposure to asbestos can result in health ailments such as lung cancer, mesothelioma (cancer of the lungs and abdomen), and asbestosis (scarring of lung tissues that results in constricted breathing).[137] The risk of disease depends upon the intensity and duration of exposure;[138] health risk from naturally occurring chrysotile asbestos exposure is proportional to the cumulative inhaled dose (quantity of fibers) and increases with the time since first exposure. A number of factors influence the disease-causing potency of any given asbestos (such as fiber length and width, fiber type, and fiber chemistry); however, all forms are carcinogens. Although the California Air Resources Board has not identified a safe exposure level for asbestos in residential areas, exposure to low levels of asbestos for short periods of time poses minimal risk.[139]

Regulation Applicable to Serpentinite

To address health concerns from exposure to naturally occurring chrysotile asbestos, the California Air Resources Board enacted an ATCM for Construction, Grading, Quarrying, and Surface Mining Operations in July 2001, which became effective for projects located within the San Francisco Bay Area Air Basin on November 19, 2002. The requirements established by the Asbestos ATCM are contained in California Code of Regulations Title 17, section 93105,[140] and are enforced by the air district.

The Asbestos ATCM requires construction activities in areas where naturally occurring chrysotile asbestos is likely to be found to employ best available dust control measures. Before the start of construction activities the project sponsor would be required to submit the necessary documentation to air district to ensure compliance with the Asbestos ATCM. The Asbestos ATCM would require the project sponsor to prepare and obtain air district approval of an asbestos dust mitigation plan. The planning department would send a notification letter informing the air district of proposed construction activities and the required asbestos mitigation plan. The project sponsor would be required to ensure that construction contractors comply with the Asbestos ATCM requirements to prevent airborne (fugitive) dust containing asbestos from migrating beyond property boundaries during excavation and handling of excavated materials. The measures implemented as part of asbestos dust mitigation plan would protect workers and the public and would include, but are not limited to, the following requirements:

- Construction vehicle speed at the work site must be limited to 15 miles per hour or less.
- Prior to any ground disturbance, sufficient water must be applied to the area disturbed to prevent visible emissions from crossing the property line.
- Areas to be graded or excavated must be kept adequately wetted to prevent visible emissions from crossing the property line.
- Storage piles must be kept adequately wetted, treated with a chemical dust suppressant, or covered when material is not being added to or removed from the pile.

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137 California Air Resources Board, *Fact Sheet #1 Health Information on Asbestos*, 2002, http://www.arb.ca.gov/toxics/Asbestos/1health.pdf, accessed April 15, 2013.

138 California Air Resources Board, *Naturally Occurring Asbestos, General Information*, 2002, http://www.arb.ca.gov/toxics/Asbestos/general.htm, accessed April 15, 2013.

139 California Air Resources Board, *Fact Sheet #1 Health Information on Asbestos*, 2002. http://www.arb.ca.gov/toxics/Asbestos/1health.pdf, accessed April 15, 2013.

140 California Air Resources Board, *Regulatory Advisory, Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations*, July 29, 2002.

- Equipment must be washed down before moving from the property onto a paved public road.
- Visible track-out on the paved public road must be cleaned using wet sweep or a high efficiency particulate air filter equipped vacuum device within 24 hours.

In addition, the air district may require the project sponsor or a qualified third-party consultant to conduct air monitoring for off-site and on-site migration of asbestos dust during construction activities and to modify the dust mitigation plan on the basis of the air monitoring results if necessary.

Furthermore, the proposed project would be required to prepare a dust control plan in compliance with San Francisco Health Code article 22B, Construction Dust Control Ordinance, as described in Impact AQ-2. The measures required pursuant to the dust control plan would also control fugitive dust that may contain asbestos. Dust suppression activities required by the Construction Dust Control Ordinance include watering all active construction areas sufficiently to prevent dust from becoming airborne; increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water must be used if required by San Francisco Public Works Code article 21, section 1100 et seq. If not required, reclaimed water should be used whenever possible. Contractors would provide as much water as necessary to control dust (without creating runoff in any area of land clearing, and/or earth movement). During excavation and dirt-moving activities, contractors would wet sweep or vacuum the streets, sidewalks, paths, and intersections where work is in progress at the end of the workday. Inactive stockpiles (where no disturbance occurs for more than seven days) greater than 10 cubic yards or 500 square feet of excavated materials, backfill material, import material, gravel, sand, road base, and soil would be covered with a 10 millimeter (0.01 inch) polyethylene plastic (or equivalent) tarp, braced down, or use other equivalent soil stabilization techniques. Therefore, compliance with the California Code of Regulations, Title 17, section 93105 and article 22B would ensure that the proposed project would not result in a significant hazard to the public or environment from exposure to naturally occurring chrysotile asbestos, and the proposed project would result in a ***less-than-significant*** impact.

HAZARDOUS SOIL AND GROUNDWATER

The proposed project would require excavation of approximately 17,000 cubic yards of soil to a depth of approximately 20 feet on site and also require shallow subsurface disturbance activities in order to perform street improvements, utility installation, and stormwater basin installation. Piles would be installed to a maximum depth of 100 feet. Soil disturbance would result in over 50 cubic yards of disturbance in an area that the public health department, as set forth in San Francisco Building Code section 106A.3.2.4, has identified as likely containing hazardous substances in the soil or groundwater. Therefore, before the proposed project may obtain a building permit, it must comply with the requirements of San Francisco Health Code article 22A, which the public health department administers. Under article 22A (commonly called “the Maher Ordinance”), the project sponsor must retain the services of a qualified professional to prepare a site history report (commonly referred to as a “Phase I environmental site assessment”). The site assessment must determine whether hazardous substances may be present on the site at levels that exceed health risk levels or other applicable standards established by the California Environmental Protection Agency (Cal/EPA), the San Francisco Bay Regional Water Quality Control Board, and the California Department of Toxics Substances Control. Unless the public health department has determined that the applicant has complied with San Francisco Health Code article 22A, the project sponsor is required to conduct soil and/or groundwater sampling and analysis under a work plan approved by the public health department. The sampling analysis must provide an accurate assessment of hazardous substances present at the site that may be disturbed, or may cause a public health or safety hazard, given the intended use of the

site. Where such analysis reveals the presence of hazardous substances that exceed Cal/EPA public health risk levels given the intended use, the project sponsor must submit a site mitigation plan to the public health department. The site mitigation plan must identify the measures that the project sponsor would take to ensure that the intended use would not result in public health or safety hazards in excess of the acceptable public health risk levels established by Cal/EPA or other applicable regulatory standards. The site mitigation plan also must identify any soil and/or groundwater sampling and analysis that recommends the project sponsor conduct following completion of the measures to verify that remediation is complete. If the project sponsor chooses to mitigate public health or safety hazards from hazardous substances through land use or activity restrictions, the project sponsor must record a deed restriction specifying the land use restrictions or other controls that would ensure protection of public health or safety from hazards substances remaining on the site.[141]

To comply with various regulatory requirements, the public health department would require the site mitigation plan to contain measures to mitigate potential risks to the environment and to protect construction workers, nearby residents, workers, and/or pedestrians from potential exposure to hazardous substances and underground structures during soil excavation and grading activities. The site mitigation plan must also contain procedures for initial response to unanticipated conditions such as discovery of underground storage tanks, sumps, or pipelines during excavation activities. Specified construction procedures at a minimum must comply with San Francisco Building Code section 106A.3.2.6.3 and San Francisco Health Code article 22B related to construction dust control; and San Francisco Public Works Code section 146 et seq. concerning construction site runoff control. Additional measures would typically include notification, field screening, and worker health and safety measures to comply with Cal/OSHA requirements. The public health department would require discovered underground storage tanks to be closed pursuant to San Francisco Health Code article 21 and comply with applicable provisions of chapters 6.7 and 6.75 of the California Health and Safety Code (commencing with section 25280) and its implementing regulations. The closure of any underground storage tank must also be conducted in accordance with a permit from the fire department.

If remediation is required, it would typically be achieved through one of several methods that include off-haul and disposal of contaminated soils,[142] on-site treatment of soil or groundwater, or a vapor barrier installation. Alternatively, or in addition, restriction on uses or activities at the project site may be required along with a recorded deed restriction. Compliance with San Francisco Health Code article 22A and the related regulations identified above would ensure that project activities that disturb or release of hazardous substances that may be present at the project site would not expose users of the site to unacceptable risk levels for the intended project uses.

In compliance with San Francisco Health Code article 22A, the project sponsor has enrolled in the Maher program and submitted Phase I and Phase II environmental site assessments to the public health department, as well as a geotechnical report. The findings of each study are summarized below.

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[141] In the context of the seismic hazards act, "mitigation" refers to measures that are consistent with established practice and that will reduce seismic risk to acceptable levels, rather than the mitigation measures that are identified under the California Environmental Quality Act (CEQA) to reduce or avoid environmental impacts of a proposed project.

[142] Off-haul and disposal of contaminated materials from the project site would be in accordance with the federal Resource Conservation and Recovery Act and United States Department of Transportation regulations and the California Hazardous Waste Control program (California Health and Safety Code section 21000 et seq.

Phase I Environmental Site Assessment

According to the Phase I environmental site assessment, the following environmental conditions were identified:[143]

- Potential Recognized Environmental Conditions:
  - *Buckeye Properties. 1296 Armstrong Avenue*. This site is approximately 100 feet from the project site. Excavations during sewer inspections in 1986 revealed groundwater contamination with polychlorinated biphenyls, 1-2 dichloroethane, and benzene. No files were available from the regional board's Envirostor or Department of Toxic Substance Control's GeoTracker websites, and the Envirostor database entry lists the site type as "historical." Due to the proximity to the project site, similar development histories, the detection of contamination in groundwater, and the lack of follow-up investigation, this site is considered a Potential Recognized Environmental Concern for the project site.
  - *Former Gasoline Station. 2495 Jennings Street.* This site is located 0.24 mile from the project site and is listed as "Open—Inactive" status as July 21, 2014, in the GeoTracker database. According to the database, a leak was reported at the former gas station on October 14, 1998. A work plan for subsurface investigation was approved by the Local Oversight Program on July 24, 2011. The continued requesting investigation status and updated work plans, but as of July 21, 2014, no investigation had been conducted. Due to the presence of a confirmed fuel release, the lack of any environmental investigations, and the location of the site upgradient from the project site, this site is considered a Potential Recognized Environmental Concern for the project site.
- Vapor Encroachment Conditions:
  - *Buckeye Properties. 1296 Armstrong Avenue*. This site is approximately 100 feet from the project site. Groundwater flow directions in the proximity of the project site are not known and are likely tidally influenced. Excavations during sewer inspections in 1986 revealed groundwater contamination with polychlorinated biphenyls, 1,2-dichloroethane, and benzene, which are chemicals of concern from a vapor encroachment standpoint. No further information was available from state or local government databases. In the absence of additional data regarding the amount or extent of contamination, the above site constitutes a vapor encroachment condition.

Based on the results of the Phase I environmental site assessment, the Phase II environmental site assessment was recommended to establish baseline environmental subsurface conditions at the target site, and to determine if impacts from off-site potential recognized environmental conditions or vapor encroachment conditions are present. The Phase I environmental site assessment also recommended compliance with San Francisco Health Code article 22A for any excavation of more than 50 cubic yards.

Phase II Environmental Site Assessment

A Phase II environmental site assessment was conducted to investigate subsurface material, the results of which are below:[144]

- Soils: Arsenic, cobalt, lead, nickel, total petroleum hydrocarbons-diesel, benzo(a)pyrene, dibenzo(a,h)anthracene, and asbestos were reported in soil samples above the respective regulatory criteria. Subsurface soils were not expected to pose significant adverse impacts to human health and the

[143] AEW, *Draft Phase I Environmental Site Assessment Report: 1236 Carroll Avenue, San Francisco, CA*, March 19, 2021.
[144] AEW. *Phase II Environmental Site Assessment Report, 1236 Carroll Avenue, San Francisco, California*, July 26, 2021.

environment, provided that excavation greater than 10 feet in depth follows air district regulations, as indicated above.

- Groundwater: Benzene, ethylbenzene, and naphthalene were all detected above commercial/industrial groundwater vapor intrusion environmental screening level in a single borehole. Based on local topography, groundwater in this area likely flows to the north away from Bay View Heights toward Yosemite Slough.
- Soil Vapor: No volatile organic compounds or methane were detected above their respective environmental screening levels. Isopropyl alcohol was detected in all three samples, indicating that leaking of ambient air into the soil vapor samples may have occurred.

Based on the results of the sampling, the following key recommendations are proposed for the proposed project:

- Asbestos-containing soil is present at the site at a depth of approximately 10 feet in the vicinity of a single boring, and California class I (non-RCRA) hazardous soil is present at the site at a depth of 20 feet in the vicinity of multiple borings. If future site development or construction involves excavation or disturbance of soil at these depths and locations, proper handling and disposal protocols will be necessary to ensure that there are no impacts to human health and environment.
- The site is an area that is subject to compliance with San Francisco Health Code article 22A (Maher Ordinance). If future site development involves disturbance or excavation of over 50 cubic yards of soil, the proposed project would be subject to compliance with the Maher Ordinance. Results of this Phase II environmental site assessment may be used to fulfill all or part of the subsurface investigation requirements of the Maher Ordinance but would be subject to public health department approval.
- Dust mitigation during construction would include appropriate and applicable dust management and monitoring protocols as required by San Francisco Health Code article 22B requirements, and California Code of Regulations title 17 section 93105.
- If the site is developed, proper soil and waste management and handling protocols would be developed and implemented by the future contractor to address the handling and management of soil and waste on this project at the site.
- To ensure the safety of personnel during construction, a health and safety program would be developed and implemented to protect workers from exposures to chemicals in accordance with the applicable federal and state Occupational Safety and Health Administration's regulations.
- If construction of occupied structures is anticipated in the vicinity of boring B-8 (in the northeast corner of the site), additional soil vapor sampling may be necessary to determine if there are soil gas impacts from elevated levels of benzene, ethylbenzene, or naphthalene in the groundwater.
- If construction of occupied structures is anticipated elsewhere on the site, additional soil vapor sampling may be necessary to confirm that there are no compounds which may cause future impacts to indoor air at the site.

CONCLUSION

The proposed project would be required to remediate potential soil or groundwater contamination described above in accordance with San Francisco Health Code article 22A. The public health department would oversee this process. Compliance with article 22A would ensure that no unacceptable exposures to

the public would occur. Thus, the proposed project would not result in a significant hazard to the public or environment from the disturbance or release of contaminated soil or groundwater, and the proposed project's impact would be ***less than significant***.

Impact HZ-3: The proposed project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school. (Less than Significant)

Bret Harte Elementary School and Bret Harte Child Development are both approximately 0.25 mile south of the project site. However, as described in Impact HZ-1, hazardous materials used during project operation would not pose any substantial public health or safety hazards through their routine transport, use, or disposal. As noted in Impact HZ-2, the project sponsor would be required to prepare a site mitigation plan in accordance with San Francisco Health Code article 22A, which would ensure that the proposed project would not result in a significant hazard to the public or environment due to the release of hazardous soil and groundwater. Similarly, since the project site does not have any structures with asbestos or lead-based paint, the proposed project would likely not result in a significant hazard to the public or environment. Therefore, this impact would be ***less than significant***.

Impact HZ-4: The proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan and would not expose people or structures to a significant risk of loss, injury, or death involving fires. (Less than Significant)

Pursuant to California Government Code section 65962.5, the Secretary for Environmental Protection maintains a list of sites with potentially hazardous wastes, commonly referred to as the Cortese List. The Cortese List includes hazardous waste sites from the Department of Toxic Substances Control's EnviroStor database, hazardous facilities identified by the Department of Toxic Substances Control that are subject to corrective action pursuant to Health and Safety Code section 25187.5, a leaking underground storage tank sites from the State Water Resources Control Board's Geotracker database, solid-waste disposal sites maintained by the State Water Resources Control Board, and sites with active cease-and-desist orders and clean up and abatement orders. The project site is not on the Cortese List and thus would not create a significant hazard to the public or environment. The impact would be ***less than significant***.

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

The geographic context for an analysis of cumulative impacts related to handling of hazardous materials is generally confined to the project site and the nearby surrounding area. Nearby cumulative development projects as identified in **Table 4**, and shown in **Figure 9**, would be subject to the same fire safety and hazardous materials cleanup ordinances applicable to the proposed project. For these reasons, the proposed project would not combine with cumulative projects in the project vicinity to create a significant cumulative impact related to hazards and hazardous materials. Cumulative hazardous materials impacts would be ***less than significant***, and no mitigation would be required.

19. Mineral Resources

Topics:	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact	Not Applicable
Would the project:					
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☐	☒

The California Division of Mines and Geology under the Surface Mining and Reclamation Act of 1975 designates all land in San Francisco, including the project site, as Mineral Resource Zone 4 (MRZ4).[145] This designation indicates that there is inadequate information available for assignment to any other mineral resource zone, and thus, the project site is not a designated area of significant mineral deposits. Further, according to the general plan, no significant mineral resources exist in San Francisco. No operational mineral resource recovery sites exist in the project area. Therefore, Topics E.19(a) and E.19(b) are ***not applicable*** to the proposed project.

20. Energy

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

Impact EN-1: The proposed project would result in increased energy consumption but would not encourage activities that result in the use of large amounts of fuel, water, or energy or use these in a wasteful manner. (Less than Significant)

California Code of Regulations title 24regulates energy consumption in buildings. Title 24 includes standards that regulate energy consumption for the heating, cooling, ventilation, and lighting of residential and non-residential buildings. In San Francisco, documentation demonstrating compliance with title 24 standards is

[145] California Division of Mines and Geology, *Open File Report 96 03 and Special Report 146, Parts I and II*, 1996, https://maps.conservation.ca.gov/cgs/informationwarehouse/mlc/, accessed July 30, 2021.

required to be submitted with a building permit application. Compliance with title 24 standards is enforced by the building department. The proposed project, which would be on an infill site, would include new construction. The proposed project would be required to comply with the standards of title 24 and the requirements of the San Francisco Green Building Code.

Nonrenewable energy consumption would occur during the proposed project construction and operational phases. Construction energy consumption would be primarily in the form of indirect energy inherent in the production of materials used for construction (e.g., the energy necessary to manufacture a steel beam from raw materials) and the fuel used by construction equipment. Construction-related energy consumption is roughly proportional to the size of the new building proposed.

Operational-related energy consumption would include electricity, propane, and fuel (diesel and gasoline), as well as fuel used by trainees and employees as expressed through vehicle-miles traveled. Electricity would be used for heating, lighting, and operation of equipment and machines. Propane would be used for live-fire events, and vehicles would be fueled for fire-training activities.

Energy conservation design features that meet state and local goals for energy efficiency and renewable energy have been incorporated into the project design to reduce wasteful, inefficient, and unnecessary consumption of energy during project construction and operation. As stated above, the proposed project would be required to comply with the standards of title 24 and the requirements of the San Francisco Green Building Code, thus minimizing the amount of fuel, water, and energy used. The proposed project would also incorporate transportation demand management measures into its design, such as compliance with the City's Commuter Benefits Ordinance, Healthy Air and Clean Transportation Ordinance, Biodiesel for Municipal Fleets program, bicycle parking, showers, and lockers, green-building requirements for fuel-efficient vehicle and carpool parking, and car sharing requirements, and would be in proximity to several public transportation options. These features would minimize the amount of transportation fuel consumed. As discussed in Section E.6, Transportation and Circulation, the proposed project would result in a net decrease in VMT. In addition, on-site fuel use would be similarly offset by cessation of training activities at other locations. Given the proposed project's features and location, it would not result in wasteful use of fuel from vehicle trips. For these reasons, the proposed project would not use energy resources in a wasteful, inefficient, or unnecessary manner, nor would the proposed project conflict with or obstruct implementation of a state or local plan for renewable energy or energy efficiency. This impact would be ***less than significant***, and no mitigation would be required.

Impact C-EN-1: The proposed project, in combination with cumulative projects, would increase the use of energy, fuel and water resources, but not in a wasteful manner. (Less than Significant)

The geographic context for the analysis of cumulative impacts associated with energy is PG&E's service territory, the energy utility that serves the project site, while the geographic context for the analysis of cumulative impacts associated with fuel use is the city. The proposed project would involve construction of a fire and emergency medical service training facility, resulting in an increase of energy use at the site. Like the proposed project, all new development in the city would be required to comply with the standards of San Francisco Green Building Code title 24, thereby minimizing the amount of fuel, water, and energy used. Per capita vehicle-miles traveled in the city is relatively low compared with the regional average; therefore, cumulative development, including the proposed project, would not result in wasteful use of fuel from transportation. As such, the proposed project, in combination with cumulative projects, would have ***less than significant*** cumulative energy impacts, and no mitigation would be required.

21. Agriculture and Forestry Resources

Topics:	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact	Not Applicable
In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:					
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland to non-agricultural use or forest land to non-forest use?	☐	☐	☐	☐	☒

The project site is within an urbanized area of San Francisco. No land in San Francisco County has been designated by the California Department of Conservation Farmland Mapping and Monitoring Program as agricultural land. Because the project site does not contain agricultural uses and is not zoned for such uses, the proposed project would not require the conversion of any land designated as prime farmland, unique farmland, or farmland of statewide importance to non-agricultural use. The proposed project would not conflict with any existing agricultural zoning or Williamson Act contracts, because no lands in San Francisco

are zoned agricultural or are under Williamson Act contracts.[146] No land in San Francisco is designated as forest land or as timberland production by the California Public Resources Code or Government Code. Therefore, the proposed project would not conflict with zoning for forest land, cause a loss of forest land, or convert forest land to a different use. For these reasons, Topics E.21(a), E.21(b), E.21(c), E.21(d), and E.21(e) are ***not applicable*** to the proposed project.

22. Wildfire

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

The City and County of San Francisco and bordering areas within San Mateo County do not have any state responsibility areas for fire prevention or lands classified as very high fire hazard severity zones;[147] therefore, this topic is ***not applicable***. See Section E.18, Hazards and Hazardous Materials, for a discussion of wildland fire risks.

[146] San Francisco is identified as "Urban and Built-Up Land" on the California Department of Conservation, Farmland Mapping & Monitoring Program, https://www.conservation.ca.gov/dlrp/fmmp, accessed July 30, 2021.

[147] California Board of Forestry and Fire Protection, *State Responsibility Area Viewer*, 2021, https://bof.fire.ca.gov/projects-and-programs/state-responsibility-area-viewer/, accessed July 30, 2021.

23. Mandatory Findings of Significance

Topics:	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact	Not Applicable
Does the project:					
a) Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐	☐
b) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☒	☐	☐	☐
c) Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐	☐

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

As discussed in Section E.15, Biological Resources, with implementation of Mitigation Measure M-BI-2a, M-BI-2b, M-NO-1, and M-AQ-4, the proposed project would not substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or reduce the number or restrict the range of a rare or endangered plant or animal.

As discussed in Section E.4, Cultural Resources, implementation of the proposed project would not result in a substantial adverse change in the significance of an archeological resource or a tribal cultural resource and would not disturb human remains, with implementation of Mitigation Measures M-CR-2 and M-TCR-1. For these reasons, the proposed project would not eliminate important examples of major periods of California history or prehistory.

As discussed in Section 7, Noise, the proposed project would not have adverse effects on human beings. Construction noise and vibration impacts would be addressed with implementation of Mitigation Measures M-NO-1 and M-NO-2. As discussed in Section 8, the proposed project would have less-than-significant impacts on human health due to air pollutant emissions, with implementation of Mitigation Measure M-AQ-4.

As discussed in Section E, Evaluation of Environmental Effects, the proposed project would not make a considerable contribution to any other cumulative environmental impacts.

F.1 PUBLIC NOTICE AND COMMENT

On July 23, 2021, the planning department mailed a notification of project receiving environmental review to owners of properties within 300 feet of the project site, adjacent occupants, neighborhood groups, and other interested parties. Two comments were received. One individual noted that a previous grade change on site resulted in a berm along Armstrong Avenue; this is addressed in Section A.1, Project Location and Site Characteristics, Section A.2, Proposed Project Characteristics, and Section E.16, Geology and Soils, of this initial study. The other individual requested clarification of the site location, which is provided in Section A.1, Project Location and Site Characteristics, of this initial study.

F.2 NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION

On November 10, 2021, the planning department distributed a Notice of Availability and Intent to Adopt a Mitigated Negative Declaration. The notice was circulated to state and local agencies, interested organizations and individuals, and property owners and residents within 300 feet of the project site. Notices were also posted at multiple locations around the project site. No written comments were received during the 30-day comment period.

One comment email from the California Department of Fish and Wildlife was received after the close of the comment period.[148] The commenter recommended that pre-construction surveys occur multiple times per year if nests are found during the initial survey. Even though these comments were received outside of the comment period, staff-initiated text changes were made to Mitigation Measure M-BI-2a to address these comments (p. 126). In addition, the commenter recommended that nighttime construction activity be avoided to reduce potential noise and vibration impacts to nearby special-status species. As indicated in the Project Description (p. 18), there would be no nighttime construction. In addition, as indicated in the construction noise impact analysis (p. 76), Police Code section 2908 prohibits construction work between 8 p.m. and 7 a.m. if noise would exceed the ambient noise level by 5 dBA at the project property line, unless a special permit is authorized by the Director of Public Works or the Director of Building Inspection. As indicated under Impacts M-BI-1 and M-BI-2, the proposed project would have less-than-significant impacts on special-status species and wildlife species, with implementation of identified mitigation measures.

[148] Kanz, William. Email RE: 1236 Carroll Avenue CEQA Review, from California Department of Fish and Wildlife to Jeanie Poling, San Francisco Planning Department. December 14, 2021.

~~As discussed in Section E, Evaluation of Environmental Effects, the proposed project would not make a considerable contribution to any other cumulative environmental impacts.~~

~~F.~~ ~~PUBLIC NOTICE AND COMMENT~~

~~On July 23, 2021, the planning department mailed a notification of project receiving environmental review to owners of properties within 300 feet of the project site, adjacent occupants, neighborhood groups, and other interested parties. Two comments were received. One individual noted that a previous grade change on site resulted in a berm along Armstrong Avenue; this is addressed in Section A.1, Project Location and Site Characteristics, Section A.2, Proposed Project Characteristics, and Section E.16, Geology and Soils, of this initial study. The other individual requested clarification of the site location, which is provided in Section A.1, Project Location and Site Characteristics, of this initial study.~~

G. DETERMINATION

On the basis of this initial study:

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

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

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

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

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

Lisa Gibson
Environmental Review Officer

DATE 11/10/2021

H. INITIAL STUDY PREPARERS

Table 20. Initial Study Preparers

AGENCY/ORGANIZATION		REPORT AUTHORS
City and County of San Francisco	San Francisco Planning Department Environmental Planning Division 1650 Mission Street, Suite 400 San Francisco, CA 94103	Environmental Review Officer: Lisa Gibson Principal Environmental Planner: Chelsea Fordham Senior Environmental Planner: Jeanie Poling Transportation Planners: Jenny Delumo, Ryan Shum Air Quality Specialists: Josh Pollak, Jessica Range Archeologist: Kari Lentz Wind and Shadow Specialist: Michael Li Paleontology Review Coordinator: Debra Dwyer
Environmental Consultants	WSP, Inc. 425 Market Street, 17th Floor San Francisco, CA 94105	Project Manager: Jonathan Carey Air Quality Specialists: Bruce Wattle, Silvia Yanez Noise Specialists: Steven Wolf, Kevin Keller, Michael Lieu Environmental Planners: Elizabeth Diaz, Naomi Batzer Editor: Michael Babin
	LCW Consulting (Transportation) 3990 20th Street San Francisco, CA 94114	Principal: Luba Wyznyckyj, AICP
	RWDI (Wind and Shadow) 600 Southgate Drive Guelph, ON N1G 4P6	Principal: Dan Bacon Project Manager: Jovana Kovacevic
	BioMaAs (Biological Resources) 1278 Indiana Street, Suite #300 San Francisco, CA 94107	Project Manager: Cullen Wilkerson Senior Biologist: Chris Rogers
	Lotus Water (Hydrology and Water Quality) 660 Mission Street, 2nd Floor San Francisco, CA 94105	Project Manager: Eric Zickler Senior Engineer: Elai Fresco
	Pacific Legacy (Cultural Resources) 900 Modoc Street Berkeley, CA 94707	Principal Investigator: Hannah Ballard Field Director/Historian: Elena Reese Geoarchaeologist: Garaham Dalldorf Senior Archaeologist: Lisa Holm
	Ellen Joslin Johnck Consulting 101 Lombard Street, #217E San Francisco, CA 94111	President: Ellen Joslin Johnck
	Andrea Baker Consulting (Public Outreach) 27 Prospect Avenue San Francisco, CA 94110	President: Andrea Baker
Project Sponsor	San Francisco Fire Department c/o San Francisco Public Works 49 South Van Ness Avenue, Suite 1000 San Francisco, CA 94103	Project Manager: Magdalena Ryor Regulatory Affairs Specialist: Oliver Iberian