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Preliminary Mitigated Negative Declaration

Date:	November 2, 2016
Case No.:	**2015-006224ENV**
Project Title:	**Southeast Plant Headworks Replacement Project**
Zoning:	P (Public); M-2 (Industrial); and PDR-2 (Production, Distribution, and Repair) Use Districts 65-J Height and Bulk District
Block/Lot:	5262/009, 5227/001
Lot Size:	1,607,292 square feet
Project Sponsor	San Francisco Public Utilities Commission Scott MacPherson (415) 551-4525
Lead Agency:	San Francisco Planning Department
Staff Contact:	Timothy Johnston – (415) 575-9035 Timothy.Johnston@sfgov.org

PROJECT DESCRIPTION:

The San Francisco Public Utilities Commission (SFPUC) proposes the Southeast Plant (SEP) Headworks[1] Replacement Project (the "proposed project" or new Headworks Facility), which consists of modifications and improvements to the existing SEP and associated facilities located in the Bayview District of San Francisco. The SEP is the City's largest wastewater treatment facility, treating 80 percent of San Francisco's wastewater and stormwater. Wastewater is pumped into the SEP from three pump stations – Channel Pump Station, Bruce Flynn Pump Station, and Southeast Lift Station via two headworks facilities (SEP 011[2] and SEP 012) for preliminary treatment. The preliminary treatment process facilities currently consist of an Influent Control Structure and the Southeast Lift Station (collectively referred to as SEP 010 Influent Control Structure/Southeast Lift Station) and two headworks facilities (SEP 011 and SEP 012, which were built in 1982 and 1997 respectively). The majority of the existing equipment associated with the older Headworks (SEP 011) is over 30 years old and approaching its normal replacement interval. In addition, the existing SEP preliminary treatment process does not meet the level of service established by the SFPUC, and exhibits inefficiencies in the fine screening and grit removal processes, which remove debris that can clog downstream equipment. The SEP also has seismic structural vulnerabilities and ineffective odor control along the fence line.

The SFPUC is proposing to replace the two headworks facilities (SEP 011 and SEP 012 Headworks) and make modifications at the Bruce Flynn Pump Station facility to provide a centralized and efficient preliminary treatment system to improve screening and grit removal, ensure meeting the level of service, maintain regulatory compliance, protect public health and safety, meet current seismic standards, and

[1] The headworks of a wastewater treatment plant is the initial treatment stage of the wastewater treatment process. The treatment at the headworks consists of screening to remove coarse material such as trash, rags, and other debris; and grit removal to remove sand, gravel and other heavy inorganic materials.

[2] Most buildings at the SEP are identified with a unique 3-digit number, which is preceded by "SEP" and followed by the building's name or description, per SFPUC convention (e.g., SEP 011 Headworks).

construct a new odor control facility. The project would be located on the northwest portion of the SEP at the location of the existing SEP 010 and SEP 011 Headworks, near the intersection of Rankin Street with Evans Avenue.

The proposed project would consist of the following components:

- Modifications to the Bruce Flynn Pump Station to be an all-weather pump station and to be able to receive and pump all flow that is currently handled by the existing Southeast Lift Station;
- Demolition of the SEP 010 Influent Control Structure/Southeast Lift Station and construction of an odor control facility on the same site;
- Demolition of the existing SEP 011 and SEP 012 Headworks and construction of a new 250-mgd Headworks Facility consisting of an influent junction structure, bar screen facility, grit tanks, primary influent distribution structure, process/operations control room, and electrical room; and
- Demolition of the unoccupied building adjacent to Bruce Flynn Pump Station at 398 Quint Street.

In 2012, the SFPUC included the Southeast Plant Headworks Replacement Project as part of its Sewer System Improvement Program (SSIP), a 20 year citywide program to upgrade aging sewer infrastructure projects so as to ensure a reliable and seismically safe system. The SFPUC Commission authorized staff to proceed with the planning and development of Phase 1 projects with final approval subject to environmental review. In 2016, the SFPUC Commission endorsed the updated SSIP goals, levels of service, and program and Phase 1 strategies, including the revised SIP cost of $6.967 billion for proposed capital improvements, and endorsed the revised scope, schedule, and budget totaling $2.910 billion for Phase 1 of the SSIP. The new Headworks Facility is one of the Phase 1 projects. Construction of the proposed project is expected to be completed in approximately five and a half years, from 2017 to 2021 and in 2024. Construction staging would be located within the SEP, within parking and travel lanes of Evans Street (two travel lanes would be maintained), in a lot adjacent to the Bruce Flynn Pump Station, on SEP property along Phelps Street, and potentially off site at the Pier 94 Backlands, Pier 94, and/or Pier 96. Construction activities would generally occur Monday through Friday, from 7:00 a.m. to 8:00 p.m., and Saturdays and Sundays as needed.

FINDING:

This project could not have a significant effect on the environment. This finding is based upon the criteria of the Guidelines of the State Secretary for Resources, Sections 15064 (Determining Significant Effect), 15065 (Mandatory Findings of Significance), and 15070 (Decision to prepare a Negative Declaration), and the following reasons as documented in the Initial Evaluation (Initial Study) for the project, which is attached.

Mitigation measures are included in this project to avoid potentially significant effects. See pages 195-200.

Initial Study
Planning Department Case No. 2015-006224ENV
Southeast Plant Headworks Replacement Project

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List of Abbreviations

μg/m^3	micrograms per cubic meter
AB	Assembly Bill
ABAG	Association of Bay Area Governments
ARD/TP	archeological research design and treatment plan
AWSS	San Francisco Fire Department Auxiliary Water Supply System
BAAQMD	Bay Area Air Quality Management District
BFS	Bruce Flynn Pump Station
bgs	below ground surface
BMP	best management practice
Cal/OSHA	California Occupational Safety and Health Administration
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCR	California Code of Regulations
CCSF	City and County of San Francisco
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
City	City and County of San Francisco
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRHR	California Register of Historic Resources
CSD	combined sewer discharge
CY	cubic yards
dB	decibel
dBA	A-weighted decibel
DBI	San Francisco Department of Building Inspection
D/T	dilutions-to-threshold

CSD	combined sewer discharge
CRHR	California Register of Historical Resources
Caltrans	California Department of Transportation
dB	decibels
DOT	U.S. Department of Transportation
SFDPH	San Francisco Department of Public Health
DPM	diesel particulate matter
DPT	Department of Parking and Traffic of the San Francisco Municipal Transportation Agency
EPA	U.S. Environmental Protection Agency
ERO	Environmental Review Officer
FHWA	Federal Highway Administration
GHG	greenhouse gases
H_2S	hydrogen sulfide
HI	hazard index
HRA	health risk assessment
I-280	Interstate 280
L_{dn}	average 24-hour noise level
LEED	Leadership in Energy and Environmental Design
L_{eq}	equivalent steady-state sound level that provides an equal amount of acoustical energy as the time-varying sound
L_{max}	instantaneous maximum noise level measured during the measurement period of interest
MBTA	(Federal) Migratory Bird Treaty Act
mgd	million gallons per day
MEI	maximally exposed individual
MEISR	maximally exposed individual sensitive receptor
MLD	Most Likely Descendant
mph	miles per hour
$MTCO_2E$	metric tons of carbon dioxide equivalents

MRZ	mineral resource zone
MS4	municipal separate storm sewer system
NAHC	California Native American Heritage Commission
NAVD	North American Vertical Datum
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O^3	ozone
OPR	California Office of Planning and Research
OSHA	Occupational Safety and Health Administration (federal)
PM_{10}	particles less than 10 microns in diameter
$PM_{2.5}$	particles less than 2.5 microns in diameter (“fine” particles)
PPV	peak particle velocity
PRC	Public Resources Code
ROG	reactive organic gas
ROW	right-of-way
RWQCB	San Francisco Bay Regional Water Quality Control Board
SEP	Southeast Water Pollution Control Plant
SFPW	San Francisco Public Works
SFFD	San Francisco Fire Department
SFMTA	San Francisco Municipal Transportation Agency
SFPD	San Francisco Police Department
SFRPD	San Francisco Recreation and Parks Department
SFPUC	San Francisco Public Utilities Commission
SIL	significant impact level
SSIP	Sewer System Improvement Program
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TCR	tribal cultural resources

T/S	transport/storage
UBC	Uniform Building Code
U.S. 101	U.S. Highway 101
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
UST	underground storage tank
VMT	vehicle miles traveled

GLOSSARY

100-year flood – A flood that has a 1-percent chance of occurring in any given year.

Acute Hazard Index (Acute HI) – Acute hazard index is the sum of the individual acute hazard quotients for toxic air contaminants identified as affecting the same target organ or organ system.

Biochemical oxygen demand (BOD) – A measure of the amount of oxygen required to biologically oxidize organic matter of a water sample within five days using an acclimated seed incubated at 20 degrees Celsius. A commonly used test to both determine waste loadings to treatment plant processes and to determine the quality of effluent discharged to surface waters.

Capacity – Engineering term for describing volume or flow of structures. There are multiple uses of the term. This document uses the term "design capacity," which is the maximum capacity or flow rate up to which a treatment facility or transmission system component is designed to operate under a specified set of regulatory criteria, engineering standards, or other engineering assumptions.

Chronic Hazard Index (Chronic HI) – Chronic hazard index is the sum of the individual chronic hazard quotients for toxic air contaminants identified as affecting the same target organ or organ system.

City Datum – The San Francisco City Datum was set as 6.7 feet above the former City's high water mark, which was marked at a Boat House pile at the corner of Pacific and Davis streets. Elevations tend to be recorded relative to City Datum in San Francisco. City Datum is 8.616 feet above the National Geodetic Vertical Datum 1929 (NGVD 29) and 11.326 feet above the North American Vertical Datum 1988 (NAVD 88). http://209.77.149.9/subdivision/dpwweb/

Combined sewer discharge (CSD) – A partially treated discharge of combined wastewater and stormwater through a permitted transport/storage structure that receives flow-through treatment for the removal of floatable and settleable solids.

Combined sewer overflow (CSO) – A wet-weather discharge from a combined sewer system that occurs in response to rainfall, because the carrying capacity of the collection and storage system is exceeded.

Combined sewer system – A combined sewer system is one that collects and conveys both sewage and stormwater in a single pipeline/structure to facilities for treatment and discharge.

Deep-water outfall – The large pipe structure that carries final treated effluent into deep offshore locations for final disposal into the San Francisco Bay or Pacific Ocean. The City and County of San Francisco has two deep-water outfalls in the San Francisco Bay and one deep-water outfall in the Pacific Ocean.

Dewatering – The process of removing water from a pipeline for repair and maintenance or for removing groundwater from a trench during construction.

Discharge – The flow of surface water in a stream or canal or the outflow of groundwater from a flowing artesian well, ditch, or spring. Also refers to the discharge of liquid effluent from a facility, or to chemical emissions into the air through designated venting mechanisms.

Disinfection – Reduction of disease-causing microorganisms by physical or chemical means (e.g. chlorination).

Dry-weather flow – A combination of domestic, industrial and commercial wastes.

Effluent – The liquid flowing out of a treatment process.

Flow – The volume of water passing a given point per unit of time.

Gravity flow – Water flow by gravitational forces.

Grit – Grit consists of sand, gravel, cinders, or other heavy materials that have specific gravities or settling velocities considerably greater than those of regular organic particles. In addition to these materials, grit includes eggshells, bone chips, seeds, coffee grounds, and large organic particles.

Groundwater recharge – Inflow to aquifers from precipitation, infiltration, through-flow, and/or other means that replaces groundwater lost through pumping or other forms of discharge. The process of water being added to the saturated zone or the volume of water added by this process.

Headworks – Collective term that refers to both screenings and grit removal equipment and associated building that occur upstream of primary and secondary treatment.

Influent – The flow entering a treatment process.

NAVD 88 – The North American Vertical Datum of 1988 (NAVD 88) is the vertical control datum established in 1991 by the minimum-constraint adjustment of the Canadian-Mexican-United States leveling observations. City Datum is 11.326 feet above the North American Vertical Datum of 1988. http://www.ngs.noaa.gov/faq.shtml#WhatVD29VD88.

Pretreatment – For wastewater treatment plants, pretreatment is typically the initial step to remove large objects and grit from the influent wastewater (i.e., rags, sticks, cans, sand, etc.) to prevent damage to downstream equipment and processes (see headworks). For industrial waste programs, pretreatment involves the required permitting, monitoring, treating, and enforcement of industrial wastes before they reach the treatment plant.

Primary treatment – Typically, the first major treatment step in a wastewater treatment plant after pretreatment. It is a mechanical (settling) process used to remove settleable solids. The primary clarification stage is to produce both a generally homogeneous liquid capable of being treated biologically and a sludge that can be separately treated or processed.

Pump station – A structure containing pumps and associated piping, valves, and other mechanical and electrical equipment to lift wastewater from a low to a higher point so that the flow can be transported by gravity. Also called a lift station.

Screenings – Coarse material removed from the influent stream via the pretreatment process.

Secondary treatment – The treatment of wastewater after primary sedimentation/primary clarification. Secondary treatment, also known as biological treatment, is designed to substantially degrade the biological content of the sewage that is typically derived from human waste, food waste, soaps, and detergent.

Separate sewer system – A dual pipe or collection system with sanitary sewers for wastewater flows and storm sewers or drains for stormwater flows. In such a system, the sewer system would typically convey wastewater flows to the municipal wastewater treatment plant for treatment, while the stormwater would be either directly discharged to the receiving waters or undergo treatment at a separate facility.

Storm sewer or storm drain – A pipe or system of pipes (separate from sanitary sewers) that carries stormwater runoff and other surface wash waters.

Stormwater – Stormwater is a term used to describe water that originates during rain events. Stormwater that does not soak into the ground becomes surface runoff, which either flows into surface waterways or is channeled into the collection system.

Transport/storage structures – A system of large reinforced concrete box sewers or tunnels that surround the perimeter of the city and are designed to intercept large sewer lines, transport sewage flow to major pump stations and treatment plants for treatment, disinfection and discharge, and store wastewater/stormwater during wet weather events.

Wet weather day – For the SFPUC facilities, the NPDES permits provide the definition of a wet-weather day as any day in which one of the following conditions exists as a result of rainfall:

Southeast Water Pollution Control Plant

- Instantaneous influent flow exceeds 110 million gallons per day; or
- The average influent flow concentration of TSS or BOD is less than 100 milligrams/liter; or
- The North Shore transport/storage system wastewater level exceeds 100 inches.

Wet-weather flow – Includes dry-weather flow and any sources of inflow and infiltration as a result of precipitation. Wet weather impacts may extend well beyond a specific event. However, wet-weather impacts do not include long-term changes to groundwater elevation and the infiltration accompanying these changes.

Initial Study

Southeast Plant Headworks Replacement Project
Planning Department Case No. 2015-006224ENV

A. PROJECT SETTING

The project sponsor, the San Francisco Public Utilities Commission (SFPUC), proposes to implement the Southeast Plant (SEP or "plant") Headworks[1] Replacement Project (the "proposed project" or "new Headworks Facility") to replace the two existing headworks facilities (housed in buildings SEP 011[2] and SEP 012 at the plant), modify the Bruce Flynn Pump Station (BFS), and construct a new odor control facility. The majority of the existing equipment associated with the SEP 011 headworks facilities is over 30 years old and approaching its normal replacement[3] interval. In addition, the SEP preliminary treatment process does not meet the SFPUC's established levels of service (LOS), and exhibits inefficiencies in both fine screening (to remove debris that can clog downstream equipment) and in the grit removal process.[4] The SEP facilities also have seismic structural vulnerabilities and ineffective odor control along the fence line.[5]

A.1. BACKGROUND

In 2012, the SFPUC included the Southeast Plant Headworks Replacement Project as part of its Sewer System Improvement Program (SSIP), a 20 year citywide program to upgrade aging sewer infrastructure projects so as to ensure a reliable and seismically safe system. The SFPUC Commission authorized staff to proceed with planning and development of Phase 1 projects with final approval subject to environmental review. In 2016, the Commission endorsed updated SSIP goals, levels of service, and program and Phase 1 strategies, including the revised SSIP cost of $6.967 billion for proposed capital improvements, and endorsed the revised scope, schedule, and budget totaling $2.910 billion for Phase 1 of the SSIP. This proposed project is a Phase 1 project. The various Phase 1 projects that are part of the SSIP will be evaluated separately under CEQA. These projects have independent utility, meaning the development of one does not depend on another. Separate environmental review of the SSIP projects is conducted to evaluate site-specific impacts.

The SFPUC completed a Needs Assessment Report in November 2013 to document deficiencies and gaps in existing preliminary treatment (pretreatment) processes that prevent the SEP from meeting SFPUC's established LOS. For example, improvements are needed to consistently achieve high-quality effluent from preliminary treatment processes under both dry- and wet-weather flow

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1 The headworks of a wastewater treatment plant is the initial treatment stage of the wastewater treatment process. Treatment at the headworks consists of screening to remove coarse material such as trash, rags, and other debris; and grit removal to remove sand, gravel, and other heavy inorganic materials.

2 Most buildings at the SEP are identified with a unique three-digit number, which is preceded by "SEP" and followed by the building's name or description, per SFPUC convention (e.g., SEP 010 Influent Control Structure).

3 The SFPUC defines a normal replacement interval as 25 years for headworks facilities.

4 SFPUC, *Alternatives Analysis Report TO-23 New Headworks Facility Southeast Water Pollution Control Plant*, February 2015. This document (and all other documents cited in this report, unless otherwise noted) is available for review at 1650 Mission Street, Suite 400, San Francisco, CA, as part of Case No. 2015.006224ENV.

5 Ibid.

conditions. The Alternatives Analysis Report, completed in February 2015, evaluated four alternative sites for the new 250-million-gallon-per-day (mgd) Headworks Facility. The report recommended the SEP 011 headworks site as the location for the new proposed facility because it would allow for development of the most centralized, efficient, and highest performing preliminary treatment system while also meeting the applicable LOS. **Table 1** shows the applicable SSIP goals, LOS, program and Phase 1 strategies addressed by the proposed project.

TABLE 1: SEWER SYSTEM IMPROVEMENT PROGRAM APPLICABLE GOALS, LEVELS OF SERVICE, PROGRAM, AND PHASE 1 STRATEGIES

Wastewater Enterprise Goals	Wastewater Enterprise Levels of Service	Sewer System Improvement Program Strategies ($6.9B)	Phase 1 Strategies ($2.9B)
1. Provide a Compliant, Reliable, Resilient, and Flexible System that can Respond to Catastrophic Events			
	1.1. Full compliance with State and Federal regulatory requirements applicable to the treatment and disposal of sewage and stormwater.	a. Reduce the annual long-term average of Combined Sewer Discharge (CSD) occurrences within the Central drainage basin (Channel and Islais Creek urban watersheds) by 2 (from 12 to 10), consistent with the NPDES permit.	Complete Planning and Environmental Review of the Central Bayside System Improvement Project, for Channel Force Main redundancy, to achieve a maximum long-term average of 10 CSD occurrences, consistent with the NPDES permit.
		b. Comply with Liquid and Biosolids wastewater treatment plant permit requirements.	Construct Liquid and Biosolids projects at SEP, OSP, and NPF for permit compliance (SEP: Headworks, Disinfection, Primary and Secondary Clarification, Oxygen Generation Plant, Biosolids, and Existing Digesters; OSP: Digester Gas Upgrades, Westside Pump Station; NPF: Outfall Rehabilitation, North Shore Pump Station). Rehabilitate, or replace, critical sewers based on condition assessment and prioritization within the budgeted amount.
		c. Improve combined sewer discharge (CSD) structures to increase floatables control, consistent with the NPDES permit.	Rehabilitate CSD structures (Beach St., Sansome St., Fifth St., Sixth St.-North, and Division St.) to increase floatables control, consistent with the NPDES permit.
	1.2. Critical functions are built with redundant infrastructure.	a. Construct redundancy of Channel, North Shore, and Westside Force Mains.	Complete Planning and Environmental Review of Central Bayside System Improvement Project, for Channel Force Main redundancy. Rehabilitate the remaining section of North Shore Force Main near The Embarcadero and Jackson Street.
		b. Ensure electrical redundancy to treatment facilities.	Provide redundant electrical feeds to SEP, OSP, and NPF.
		c. Rehabilitate and add redundant pumps, as necessary, at major pump stations.	Upgrade Westside, Bruce Flynn, and North Shore Pump Stations with the ability to pump peak flow with the largest pump out of service, and rehabilitate other pump stations (Griffith, Mariposa, and Hudson), as identified by condition assessment.
	1.3. Dry weather primary treatment, with disinfection, must be on-line within 72 hours of a major earthquake.	a. Design critical and new treatment facilities to withstand the following seismic events: Magnitude 7.8 earthquake on the San Andreas fault; and, Magnitude 7.1 earthquake on the Hayward fault.	Design new facilities at SEP (Headworks, Biosolids, Disinfection, Oxygen Generation Plant, Power Switchgear Building) to withstand 7.8 earthquake on the San Andreas fault and 7.1 earthquake on the Hayward fault.
			Provide seismic retrofits to SEP Building 042, to provide primary treatment of dry weather flows.
2. Integrate Green and Grey Infrastructure to Manage Stormwater and Minimize Flooding			
	2.1. Control and manage flows from a storm of a three hour duration that delivers 1.3 inches of rain (Level of Service storm).	a. Maximize protection of the City during the Level of Service storm.	Assess flood risk citywide and prioritize infrastructure needs. Implement projects in neighborhoods including: Kansas/Marin Streets, Cayuga Ave./Rousseau St., Wawona St./15th Ave., Victoria St./Urbano Dr., Joost Ave./Foerster St., and 17th St. /Folsom St. (Planning and Design only). Implement additional measures to reduce flood risk beyond the capacity of the collection system.
		b. Develop projects using an urban watershed approach which employs the Triple Bottom Line.	Complete the Urban Watershed Assessment plan. Apply Triple Bottom Line to applicable projects during the Alternatives Analysis phase.
		c. Identify, evaluate, and develop projects to reduce combined sewer discharge (CSD) occurrences on public beaches.	Complete Urban Watershed Assessment plan.
		d. Develop Design Standards for Green Infrastructure that are informed by the performance of the Early Implementation Projects (EIPs).	Construct EIPs and monitor performance.
3. Provide Benefits to Impacted Communities			
	3.1. Limit plant odors to within the treatment facility's fence lines.	a. Construct effective odor control systems at SEP, OSP, and NPF.	Design and construct the new Headworks and Biosolids facilities at SEP to meet 5 dilutions/threshold (D/T) odor criteria at the fence line.
		b. Use operational controls and infrastructure modifications to minimize odors from the Collection System (sewers).	Develop a Collection System Odor Model to identify potential areas of significant odor. Implement Cargo Way Flushing Line and repair of Westside Flushing Line to minimize odors.
	3.2. All projects will adhere to the Environmental Justice and Community Benefits policies.	c. Incorporate visual improvements into projects at the treatment plants and pump stations, where feasible and appropriate.	Incorporate visual and architectural improvements in the design and construction of the new Headworks and Biosolids projects at SEP.
		d. Provide community benefits including job creation, workforce development, contracting opportunities, and greening.	Provide green infrastructure contractor training and coordinate all jobs through the Contractors Assistance Center.
		e. Work with other City and County agencies on capital projects they have initiated to protect the value and function of wastewater facilities, maximize economic development, and minimize construction impacts and costs.	Coordinate and implement interdepartmental sewer projects (Central Subway, Van Ness BRT, Better Market Street, Geary BRT Phase 1 & 2, Masonic Ave, and Mission Bay Loop).
		f. Engage residents in locating green infrastructure where multiple benefits can be optimized using the Triple Bottom Line.	Utilize Triple Bottom Line and public process in development of EIPs.
4. Modify the System to Adapt to Climate Change			
	4.1. New infrastructure must accommodate expected sea level rise within the service life of the asset (i.e., 6 inches by 2030, 11 inches by 2050, 36 inches by 2100) and be consistent with the City's Guidance for Incorporating Sea Level Rise into Capital Planning.	a. Site new facilities to accommodate, or adapt to, expected sea level rise over the life of the asset.	Build new infrastructure at SEP (Headworks, Biosolids, Disinfection, Oxygen Generation Plant, Power Switchgear Building) and Mariposa Pump Station to accommodate expected sea level rise in 2100.
	4.2. Existing infrastructure that is impacted by sea level rise, within the service life of the asset, will be modified based on sea level rise projections.	b. Develop and implement an adaptation plan for existing infrastructure to address expected sea level rise within the service life of the asset.	Modify existing Bayside CSD structures that experience seawater intrusion. The following CSD structures are considered: Jackson St., Pierce St., Mariposa St., Beach St., Fifth St., Sixth St.-North., Division St., Howard St., Islais Creek-North, Marin St., Selby St., and Yosemite Ave.
5. Achieve Economic and Environmental Sustainability			
	5.1. Beneficial use of 100% of Biosolids.	a. Upgrade biosolids to treatment Class "A".	Upgrade SEP biosolids to treatment Class "A" which, contain no detectible levels of pathogens, and can be applied without restriction on food crops. Size the new Biosolids Digester Facilities to meet solids loading projections for the year 2045.
	5.2. Beneficialuse of 100% of methane generated by treatment facilities, during normal operation.	b. Provide cogeneration, or other beneficial methane use options, at SEP and OSP.	Construct cogeneration facilities at SEP and OSP for a total output of 5MW.
	5.3. Use non-potable water sources to meet WWE facilities non-potable water demands.	c. Incorporate conservation measures, recycled water, and other non-potable reuse facilities into projects, where feasible and appropriate.	In order to maximize use of non-potable water, upgrade the treated effluent pump system at SEP and incorporate its use into designs, where applicable. Accommodate space for recycled water treatment facilities at SEP and OSP.
6. Maintain Ratepayer Affordability			
	6.1. Combined sewer and water bill will be less than 2.5% of average household income for a single family residence.	a. Plan and phase projects to ensure affordability and predictability for ratepayers.	Plan and phase projects to ensure affordability and predictability for ratepayers.
			Identify and apply for Federal and State loans and grants to reduce the financial burden on ratepayers.

SEP: Southeast Treatment Plant; OSP: Oceanside Treatment Plant; NPF: North Point Wet Weather Facility; NPDES: National Pollutant Discharge Elimination System (US EPA)

Source: SFPUC, *Sewer System Improvement Program Goals, Levels of Service, Program and Phase 1 Strategies,* March 22, 2016

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A.2. PROJECT LOCATION AND SETTING

The approximately 40-acre SEP site is zoned "Public" (P) and "Heavy Industrial" (M-2) and is bordered by Evans Avenue to the north, Phelps Street to the east, and Quint and Rankin Streets to the west (**Figure 1**).[6] Jerrold Avenue separates the facility into two parts, with liquid treatment processes on the north side and biosolids handling facilities on the south side (**Figure 2**). The proposed improvements at the SEP would be constructed in the northwest corner of the site within the M-2 zone, near the intersection of Evans Avenue and Rankin Street. The 2.75-acre Bruce Flynn Pump Station parcel (BFS parcel) is zoned "Production, Distribution & Repair" (PDR-2) and bordered by Evans Avenue to the south, Quint Street to the east, Rankin Street to the west, and Davidson Avenue to the north. The BFS Parcel consists of two distinct areas: the BFS, and BFS adjacent lot. The BFS is located adjacent to the northwest corner of the SEP, at the northeast corner of the intersection of Rankin Street and Evans Avenue (Figure 2). The BFS adjacent lot is approximately 2 acres and occupies the remaining portion of the BFS parcel. A Port of San Francisco railroad track runs down Rankin Street and through the BFS adjacent lot. The railroad track is a spur used intermittently on weekdays to carry bulk materials from a barge terminal on Cargo Way to warehouses west of the SEP. The SEP site is fully developed and situated in an industrial area. Land uses adjacent to the northwest corner of the SEP include a scrap metal recycler to the west and various industrial offices along Davidson Avenue to the north. The nearest residential uses are about 1,550 feet southeast of the SEP 011 headworks.

A.2.1. Existing Facilities

Combined Sewer System and Bayside Drainage Basin Overview

San Francisco's combined sewer system carries both sanitary sewage and stormwater runoff. A ridgeline that runs roughly north-south naturally divides San Francisco into two main drainage basins— the Bayside and Westside drainage basins (**Figure 3**). The SEP service area includes the Bayside drainage basin, which occupies over 18,600 acres, representing roughly 65 percent of the total city area. The combined flows are conveyed to three wastewater treatment facilities owned and operated by the SFPUC: the Oceanside Water Pollution Control Plant, the SEP, and the North Point Wet Weather Facility; the latter is a wet-weather facility that normally operates only during heavy rains. On dry weather days, more than 80 mgd of wastewater is collected and transported to the treatment plants, which remove pollutants such as human waste, oil, and pesticides before they reach San Francisco Bay or the Pacific Ocean.

6 The street grid surrounding the project site does not conform to the cardinal directions (north, east, west, and south). For this project, Evans Avenue and Jerrold Avenue are considered east-west streets. Quint Street, Rankin Street, Phelps Street, and Third Street are considered north-south streets.

Figure 1: Project Location and Vicinity Map

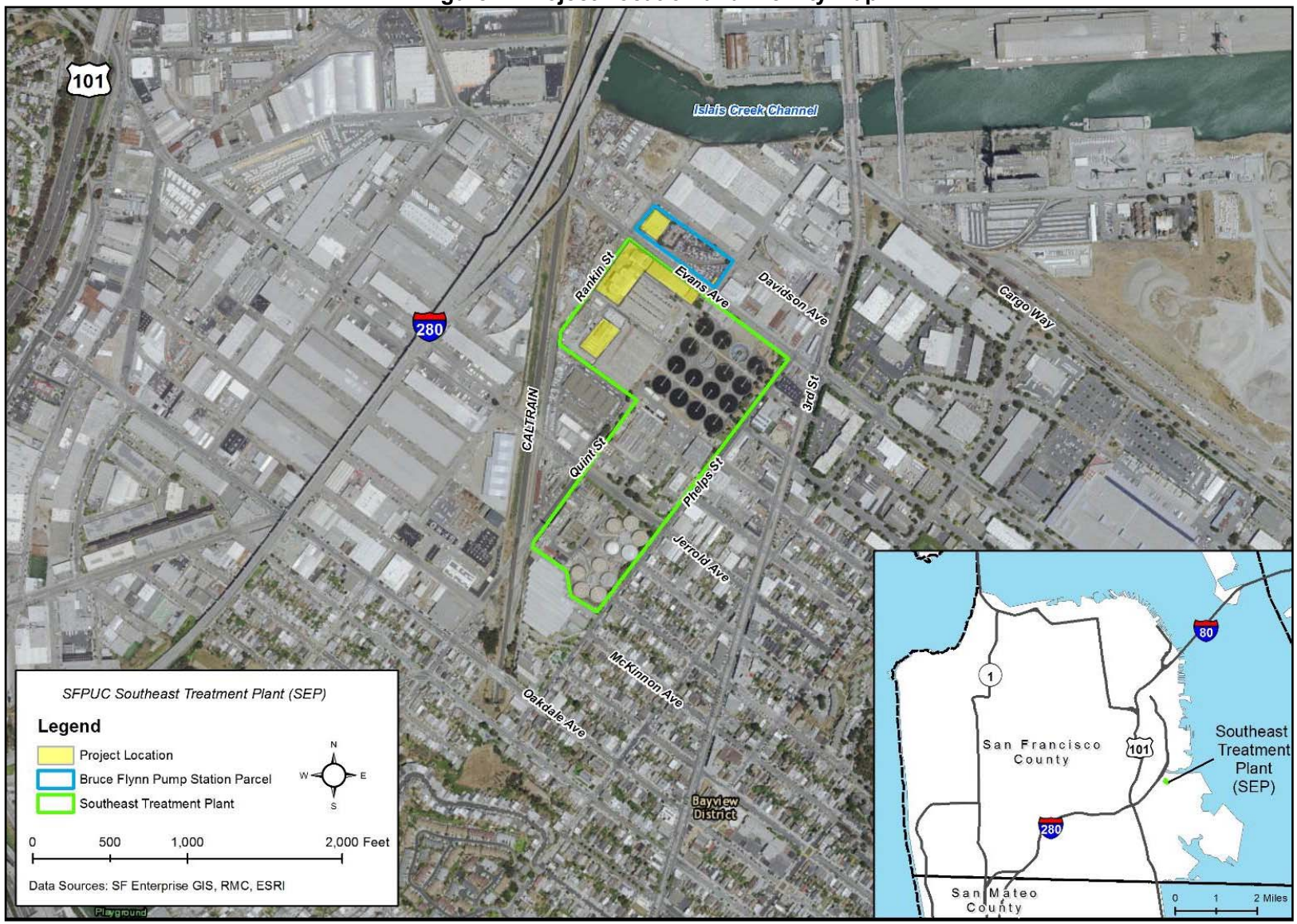
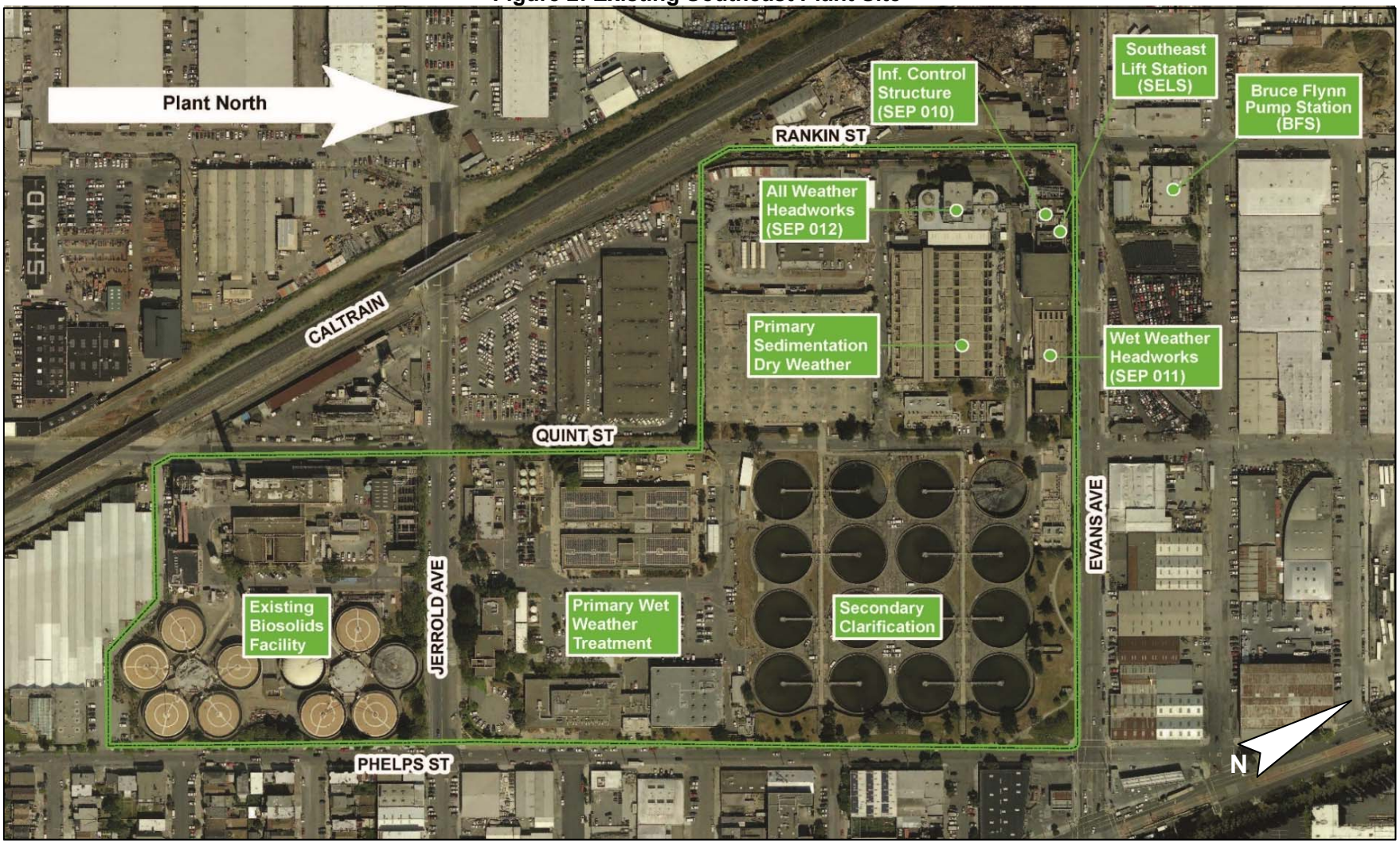


Figure 2: Existing Southeast Plant Site



Source: SFPUC, *Southeast Plant SEP Headworks Project Conceptual Engineering Report Volume No. 1,* January 2016

Figure 3: San Francisco's Combined Sewer System

Source: SFPUC, *SSIP System* Map, e-mail from Karen Frye to Robin Cort and others, Subject: Exhibit, September 13, 2016.

The existing facilities in the Bayside drainage basin include the following:

- Approximately 650 miles of combined sewers and tunnels;
- Six transport/storage boxes;
- Eight major pump stations and 12 minor pump stations;
- Two deep-water outfalls and 30 shallow-water discharge points (including the SEP's wet-weather discharge to Islais Creek);
- North Point Wet Weather Facility (a.k.a. North Point Facility or NPF), a wet-weather-only facility with a primary treatment capacity of 150 mgd; and,
- SEP, with a secondary treatment capacity of 150 mgd and an additional primary treatment capacity of 100 mgd.

When operating the Bayside system under dry-weather conditions, the SFPUC manages the sewers, tunnels, transport/storage boxes, and pump stations to deliver all wastewater to the SEP for secondary treatment and disinfection. The treated and disinfected wastewater is then discharged to San Francisco Bay via the Southeast Bay Outfall (also called the Pier 80 Deepwater Outfall). Typically, the North Point Facility is brought online during rainfall events when flows to the SEP are expected to rise above its 150-mgd secondary treatment capacity. The North Point Facility provides primary treatment and disinfection for up to 150 mgd of wet-weather flow, with discharge through the North Point Outfall (Figure 3). Under National Pollutant Discharge Elimination System (NPDES) Permit[7] No. CA0037664, the SFPUC is authorized to discharge up to 110 mgd of mixed primary and secondary treated effluent into San Francisco Bay through the Pier 80 deepwater outfall, and during wet weather up to 140 mgd of secondary effluent through the Quint Street Outfall to Islais Creek. If rain continues after flows through both treatment facilities are at capacity, discharges of primary effluent without disinfection may begin to flow at combined sewer discharge outfalls located along the San Francisco Bay shoreline. These outfall structures have baffles to retain floatable materials and weirs to retain settleable solids, thus providing the equivalent of primary treatment for the wet-weather combined flows. As rain subsides and flows decrease, all facilities transition from wet- to dry-weather operation.

7 The NPDES program is a federal program that has been delegated to the State of California for implementation through the State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCBs). NPDES permits regulate point sources (e.g., wastewater treatment plants) that discharge to waters of the United States. Waste discharge requirements for the SEP are covered under Order No. R2-2013-0029 (NPDES No. CA0037664). NPDES permits are updated approximately every five years, and the upcoming renewal of the SEP's NPDES permit is anticipated in late 2018. The new Headworks Facility would not require an update of the NPDES permit at this time.

Existing Southeast Water Pollution Control Plant[8]

The SEP was originally commissioned in 1952 as a primary treatment plant and was upgraded to a secondary treatment plant in 1982 (secondary upgrade), which included the construction of new lift pumps and a new preliminary treatment facility (SEP 011 headworks). The SEP 011 headworks is typically used during wet weather or if SEP 012 is out of service. In 1997, the SFPUC constructed a second preliminary treatment facility (SEP 012 headworks), the BFS, the Influent Control Structure (SEP 010), and a wet weather primary effluent disinfection system (SEP 525) to increase the SEP's wet-weather capacity from 210 mgd to 250 mgd and limiting discharge of disinfected primary effluent via SEP 550 (i.e., only secondary effluent is directed to the shallow-water discharge at Quint Street Outfall; prior to 1997, disinfected combined primary and secondary effluents could be discharged into Islais Creek via the Quint Street Outfall). **Figure 4** illustrates the SEP site layout, showing the major facilities along with the plant's construction history. The existing SEP 012 headworks is called "New Headworks" in Figure 4 because it was constructed after the SEP 011 headworks.

The SEP treats 80 percent of the city's combined sewer flows and manages the majority of the Bayside drainage basin's combined flows.[9] The SEP implements physical, chemical, and natural biological processes to remove pollutants from wastewater and produce effluent that meets water quality standards. Wastewater is pumped into the SEP from three pump stations—the Channel Pump Station (CHS), the BFS, and the Southeast Lift Station (which receives wastewater from the Griffith Street and Mariposa Pump Stations in addition to local gravity flows)—via SEP 010 and then pumped to two headworks facilities (SEP 011 and SEP 012) and is subsequently treated at both the primary and secondary levels. SEP 011 typically serves as a wet-weather facility designated to handle the flow exceeding the capacity of SEP 012 or to provide backup for SEP 012 during dry weather.

In dry weather, wastewater from the northeast section of the city is pumped from North Shore Pump Station (NSS) to Channel Pump Station (CHS). From CHS, flow is then pumped to SEP via the Channel Force Main (CHFM) (Figure 3). The southeast (Bayview) district's wastewater is pumped and flows by gravity to the Southeast Lift Station. The Channel Pump Station and Southeast Lift Station discharge directly into the SEP 010 Influent Control Structure; these facilities are collectively referred to as SEP 010 Influent Control Structure/Southeast Lift Station, as shown in **Figure 5**. During wet weather, the BFS pumps some of the southeast district's wastewater to the SEP 010 Influent Control Structure/Southeast Lift Station. The BFS currently operates under wet-weather conditions only. Each pump station uses coarse-bar screens upstream of the pumps to reduce the amount of coarse debris allowed to enter the SEP 011 and SEP 012 headworks facilities.

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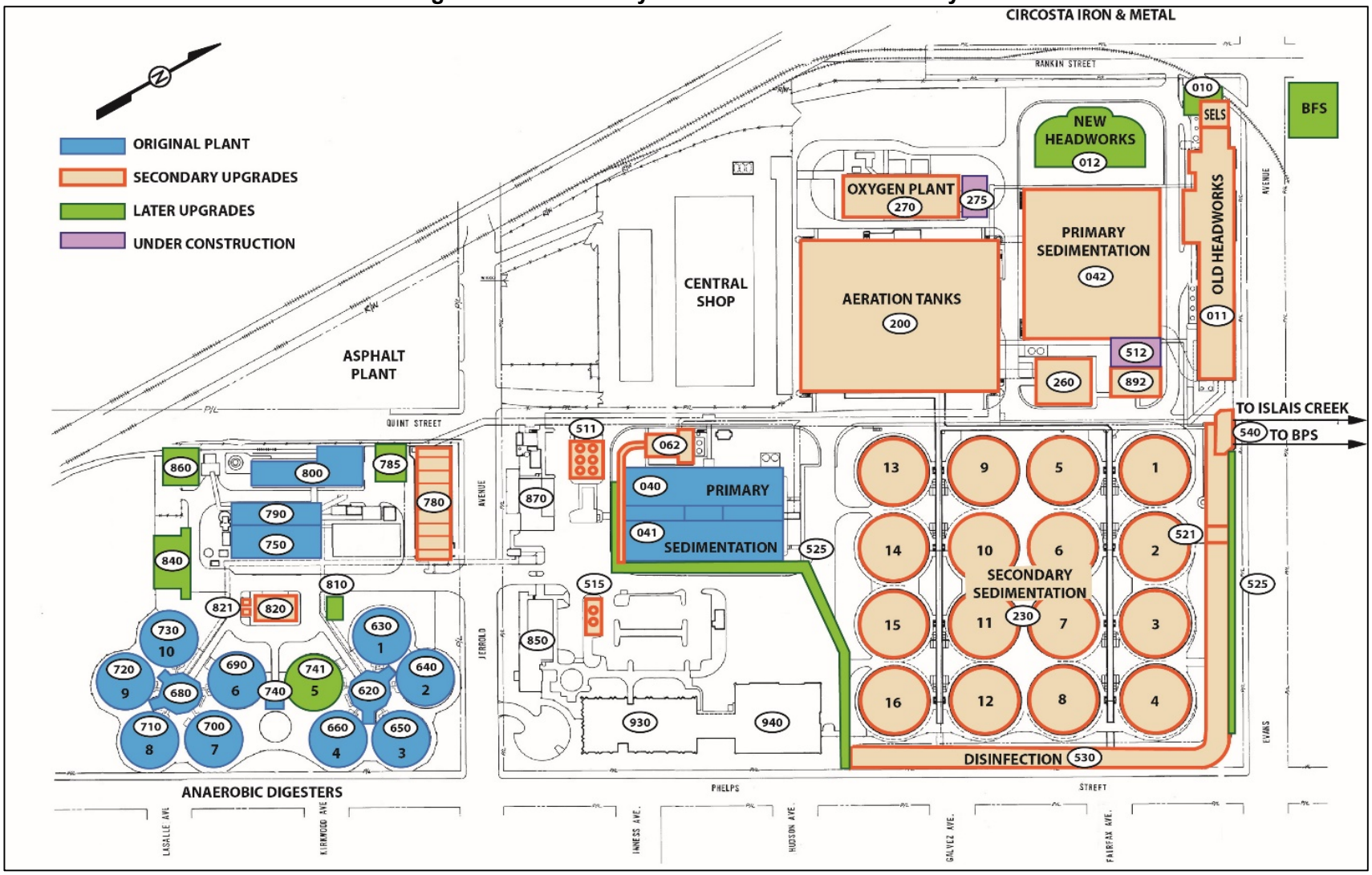
8 Note that the SFPUC standard nomenclature for buildings and facilities is not necessarily used in this document. Instead, abbreviations and building names have been simplified in many cases.

9 The SEP also treats flows from limited areas of Daly City and Brisbane, about 2.5 percent of the total flow currently treated at SEP.

Figure 4: SEP Site Layout and Construction History



Source: SFPUC, 2015.

Figure 5: Existing Influent Pumping and Headworks Locations

Source: SFPUC, *Project Description SEP New 250 MGD Headworks Facility Presentation*, 2015, Modified by RMC Water and Environment 2016.

The SEP 011 headworks includes two coarse bar racks, four lift pumps, five 3/4-inch fine screens and five rectangular, gravity-settling grit channels with chain and flight collectors. The SEP 012 headworks includes four 1/2-inch fine screens and four circular, mechanical vortex-type grit tanks. Wastewater flows from the SEP 010 Influent Control Structure/Southeast Lift Station is sent to either of the headworks facilities through fine-bar screens to remove floating trash, rags, leaves, and other debris that can clog downstream equipment. Wastewater then flows through grit tanks to remove heavier, sand-sized material to protect downstream equipment from wear.

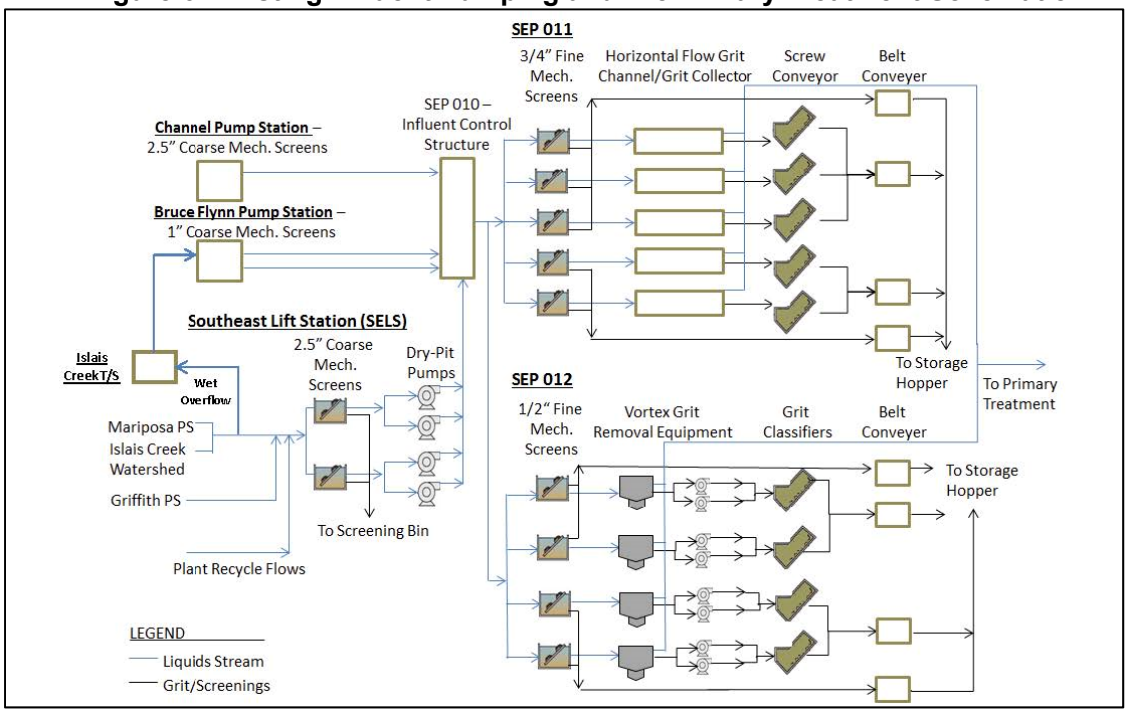
The screenings handling system transports captured debris into hoppers for disposal. The grit handling system washes the captured grit, returns organics to the flow, and dewaters washed grit for disposal. Figure 5 presents a closer view of the northwest portion of the site, illustrating the existing BFS, the SEP 010 Influent Control Structure/Southeast Lift Station, the SEP 011 headworks, and the SEP 012 headworks. **Figure 6** shows a flow schematic of the preliminary treatment process.

Following preliminary treatment through the SEP 011 and SEP 012 headworks, wastewater undergoes primary sedimentation, secondary treatment using high-purity oxygen-activated sludge, secondary clarification, and disinfection, while residual solids undergo anaerobic digestion and sludge dewatering.

As currently configured, the SEP can provide secondary treatment for flow rates of up to 150 mgd. Any influent that exceeds the secondary treatment capacity receives primary treatment and disinfection prior to discharge. During dry weather, all wastewater receives secondary treatment

and disinfection. Effluent is discharged through the deep-water Southeast Bay Outfall, which has submerged diffusers offshore from Pier 80. The SEP treats up to 250 mgd during peak wet weather, with a total secondary effluent flow of 150 mgd and primary effluent flow of 100 mgd. All wet-weather primary effluent, as well as the portion of secondary effluent that can be accommodated within the outfall hydraulic capacity, is discharged through the Southeast Bay Outfall (SEO). When total plant flow exceeds the Southeast Bay Outfall capacity, an overflow weir in the effluent control structure (SEP 540) diverts disinfected secondary effluent to the Quint Street Outfall, which discharges into Islais Creek.

Figure 6: Existing Influent Pumping and Preliminary Treatment Schematic



Source: SFPUC, Alternatives Analysis Report TO-23 New Headworks Facility Southeast Water Pollution Control Plant, February 2015.

B. PROJECT DESCRIPTION

B.1. PROJECT PURPOSE AND NEED

The proposed project would replace the function of two existing headworks facilities, modify the BFS, and construct a new odor control structure. The purpose of the project is to provide a centralized and efficient preliminary treatment system to improve screening and grit removal, maintain regulatory compliance, protect public health and safety, meet current seismic standards, provide advanced odor control, and ensure the adopted LOS for wastewater treatment are met.

B.2. PROJECT OBJECTIVES

Project objectives are to:

- Build a seismically safe Headworks Facility at the SEP to provide treatment and handling of the influent wastewater flow to meet the permitted capacity of 250 mgd

- Build critical processes with redundant infrastructure to provide reliability and operational flexibility
- Design a new Headworks Facility for a magnitude 7.8 earthquake on the San Andreas Fault and a magnitude 7.1 earthquake on the Hayward Fault
- Maximize odor control within the treatment facility
- Protect downstream equipment and improve treatment processes

B.3. PROPOSED IMPROVEMENTS

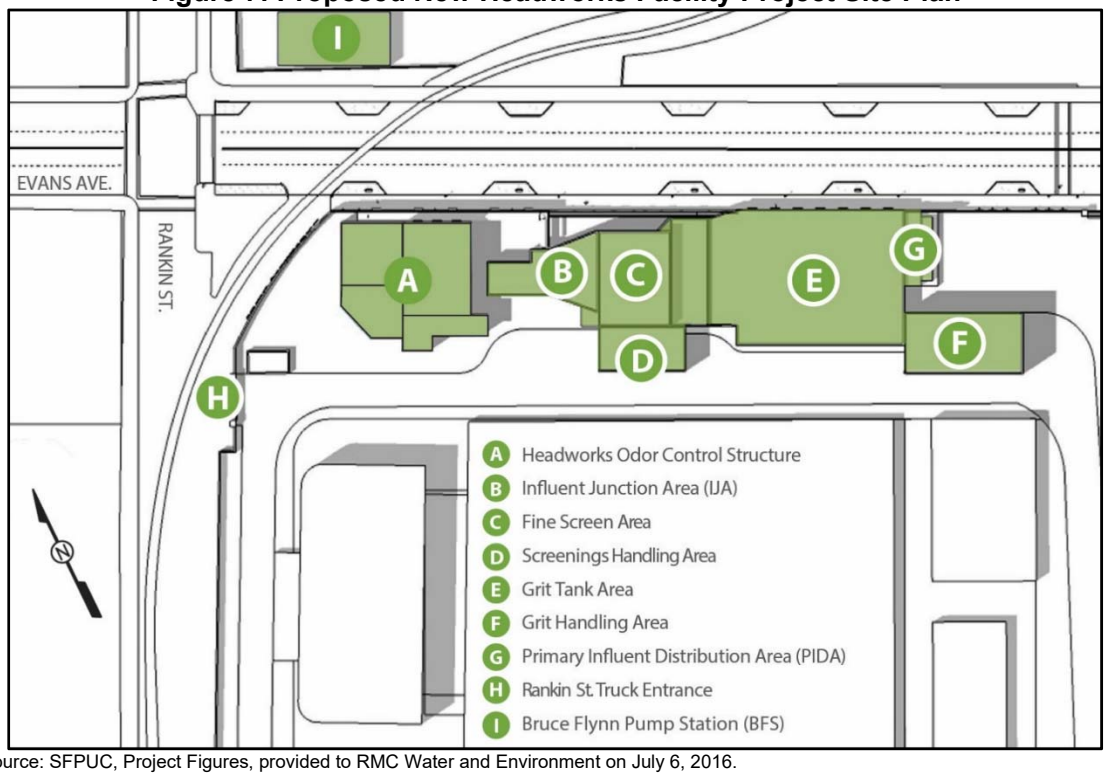
The proposed project would consist of the following components:

- Modifications to the BFS and new sewer lines so it may serve as an all-weather pump station capable of receiving and pumping all flow currently handled by the existing Southeast Lift Station.
- Demolition of the existing SEP 010 Influent Control Structure/Southeast Lift Station[10].
- Demolition of the existing SEP 011 headworks and construction of a new 250-mgd Headworks Facility, which would consist of an odor control facility, an influent junction structure, bar screen facility, grit tanks, primary influent distribution structure, process/operations control room, and electrical room.
- Demolition of an unoccupied building at 398 Quint Street in the BFS Adjacent Lot.
- Demolition of the existing SEP 012 headworks after the New Headworks Facility has operated for two wet seasons.

The proposed project is shown in **Figures 7 through 10** and summarized below in **Table 2**.

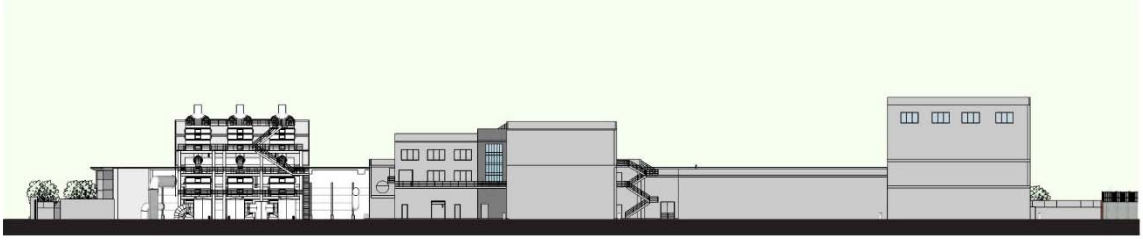
10 The SEP 010 Influent Control Structure was identified as a major contributor in generating odor complaints at the SEP. SFPUC, *Southeast Water Pollution Control Plant Condition Assessment*, November 2013.

Figure 7: Proposed New Headworks Facility Project Site Plan



Source: SFPUC, Project Figures, provided to RMC Water and Environment on July 6, 2016.

Figure 8: Proposed Headworks Facility South Elevation View (side within the SEP)

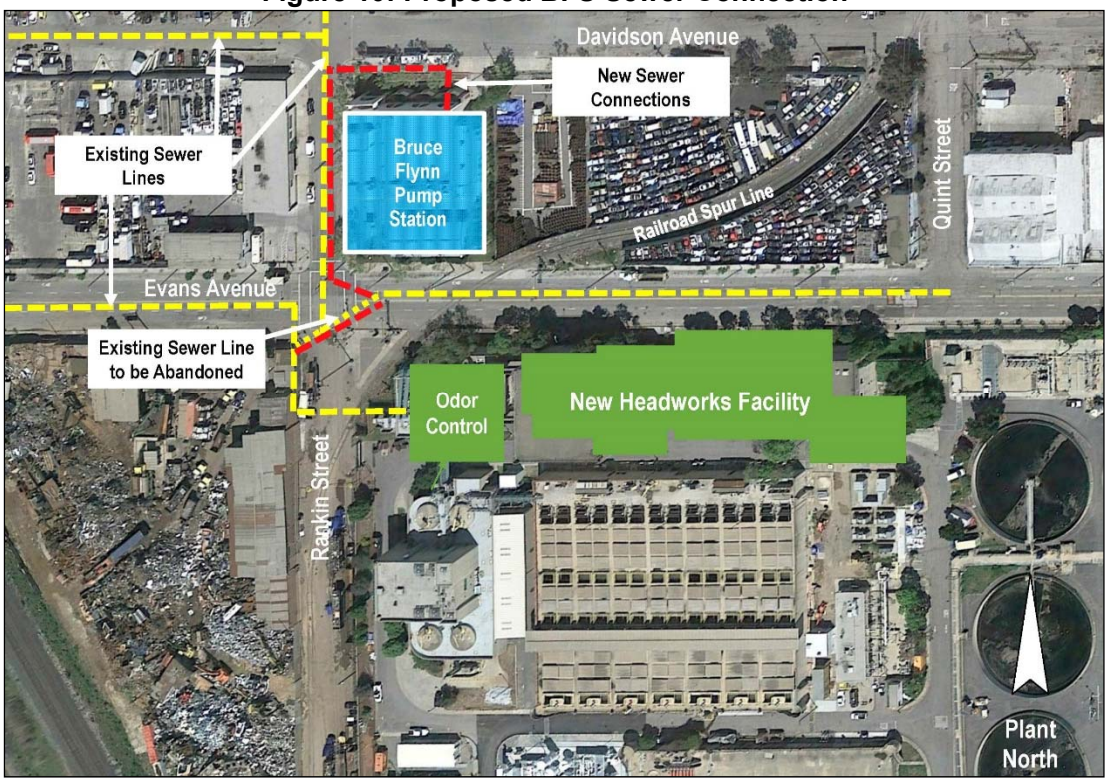


Source: SFPUC, e-mail from Monika Krupa to Robin Cort and others, Subject: RFI#7 New Headworks Facility Elevation Drawings, April 28, 2016.

Figure 9: Proposed Headworks Facility North Elevation View (side facing Evans Avenue)

Source: SFPUC, e-mail from Monika Krupa to Robin Cort and others, Subject: RFI#7 New Headworks Facility Elevation Drawings, April 28, 2016.

Figure 10: Proposed BFS Sewer Connection



Source: SFPUC, email from Monika Krupa to Robin Cort and others, June 22, 2016, adapted by RMC Water and Environment

TABLE 2: PROPOSED PROJECT COMPONENTS AND IMPROVEMENTS

Component	Proposed Improvements
Bruce Flynn Pump Station (Improvements)	• Replace or modify existing equipment within the BFS • Provide additional miscellaneous upgrades • Provide 750-kilowatt emergency generator • Demolish 398 Quint Street building (5,300 square feet) • Construct new sewer lines along Evans Avenue, Rankin Street, and Davidson Avenue
SEP 010 Influent Control Structure/ Southeast Lift Station (Demolition)	• Demolish SEP 010 Influent Control Structure/ Southeast Lift Station • Reroute CHS and BFS force main pipe connections to the Influent Junction Structure
Odor Control Facility (New Construction at site of SEP 010 Influent Control Structure/ Southeast Lift Station)	• Construct new 14,400-square-foot structure at grade, with height up to 65 feet • Install exhaust fan system and two-stage odor control scrubbers
SEP 011 and SEP 012 Old Headworks (Demolition)	• Demolish SEP 011 and SEP 012 headworks. The SEP 012 headworks would be demolished only after the New Headworks Facility has operated for two wet seasons.
New Headworks Facility up to 65-feet-tall (Replacement of structures at SEP 011 headworks site)	**Influent Junction Structure** • Construct 700-square-foot structure • Install new pipe stub-outs for connections to various existing and future pipelines • Reroute SEP 011 headworks pipe to carry wet-weather overflow to SEP 040/041 primary sedimentation tanks • Construct temporary pipeline connecting to the SEP 012 headworks influent pipe upstream of the control valve **Bar Screen Facility/Screenings Handling Facility** • Construct new structures totaling 10,150 square feet • Install multi-rake bar screens, isolation gates, screenings conveyance/washer-compactors/loading systems **Grit Tanks/Grit Handling Building** • Construct new structures totaling 16,250 square feet • Install grit removal tanks, slurry pumps, washing and dewatering units, and storage bins/loading system **Support Facilities** • Construct common process/operations control room and electrical room for the odor control and the new headworks facilities
Source: SFPUC, 2015.	

B.3.1. Bruce Flynn Pump Station (BFS)

The BFS component would consist of demolition of the 398 Quint Street building, modifications at the BFS facility, and new sewer lines along Rankin Street, Davidson Avenue, and Evans Avenue.

398 Quint Street – 398 Quint Street is a two-story, 16-foot-tall building located in the BFS adjacent lot, at the corner of Evans Avenue and Quint Street. This two-story building, with a floor area of approximately 5,300 square feet, would be demolished prior to the BFS adjacent lot being put to use as a staging area.

BFS Modifications and Sewer Connections – Construction at the BFS would consist of replacing or modifying existing equipment, and constructing new sewer connections (see Figure 10) to allow it to operate as a 150-mgd, all-weather pump station and to receive and pump all flow that is currently handled by the existing Southeast Lift Station.

A new sewer line would be installed along the southern side of Davidson Avenue from Rankin Street and would connect to the BFS near its northeast corner. Another new sewer line would be installed along Rankin Street between Davidson Avenue and through the Evans Avenue and

Rankin Street intersection. These sewer lines would be installed using open cut excavation and would be supported on piles that could be up to 50 to 85 feet deep. A new sewer line between the existing Southeast Lift Station and new sewer line at the Evans Avenue and Rankin Street intersection would be installed inside of an existing sewer line.

Once complete, the BFS modifications would divert all-weather flow that normally goes to the Southeast Lift Station to the BFS. The BFS modifications would be completed before the Southeast Lift Station is taken out of service and demolished.

A 750-kilowatt (kW) emergency generator could be located at BFS to ensure pumping could continue in the event of a power outage. Table 2 lists the proposed improvements. The proposed modifications would not alter the exterior of the BFS.

B.3.2. 250-mgd Headworks Facility

The new Headworks Facility would be located along Evans Avenue at the site of the existing SEP 011 headworks (Figures 5 and 7) and it would replace and consolidate the functions of the existing SEP 011 and SEP 012 headworks. The new Headworks Facility would consist of several process areas: influent junction structure, bar screen area, grit removal and handling area, process/operations control room, and electrical room. These process areas are further described below. Construction of the new Headworks Facility would require the demolition of the existing SEP 011 headworks. The existing SEP 011 headworks is approximately 390 feet long and 98 feet wide. It varies from one to four stories in height with a floor area of approximately 13,000 square feet. Demolition of SEP 011 headworks would require closing the southern sidewalk, parking lane, and one travel lane on Evans Avenue between Rankin Street and Quint Street. Once the SEP 011 headworks demolition is complete, the sidewalk and lanes on the south side of Evans Avenue near the Rankin Street intersection would be opened. The remaining southern sidewalk areas, parking lane, and travel lane on Evans Avenue near the Quint Street intersection would remain closed until construction is complete.

The new Headworks Facility would be approximately 400 feet long and 105 feet wide, varying in height depending on the process area, and could be up to 65 feet tall. The facility would require a pile foundation system to support the structures and pipelines.

B.3.3. Influent Junction Structure

The pump discharge chamber within the influent junction structure is where flows from all influent force mains would combine ahead of the fine screening process. The influent force mains would be routed to the influent junction structure within a pipe rack (a structure to support pipes) at the north plant boundary. The influent junction structure would be completed early in the construction phase and would replicate the functionality of the existing Influent Control Structure to connect into the existing SEP 012 headworks, thereby allowing complete demolition of the SEP 010 Influent Control Structure/Southeast Lift Station screening channels. The new influent junction structure would include pipe stub-outs to allow for a number of connections to force mains from the BFS and Channel Pump Station.

The new influent junction structure would be constructed at the western side of the site of the existing SEP 011 headworks. Construction of the new influent junction structure and new Headworks Facility would require demolition of the SEP 010 Influent Control Structure/Southeast Lift Station (floor area of approximately 13,000 square feet) and SEP 011 headworks (floor area of approximately 40,500 square feet). To allow the SEP's preliminary treatment facilities to continue operating during construction, temporary pipelines and rerouting of flow would be required. A concrete box conduit would be constructed to reroute wet weather flows in excess of the existing SEP 012 headworks capacity directly to the SEP 040/041 primary sedimentation tanks, bypassing the existing SEP 011 headworks (SEP 011 reroute conduit). A replacement power conduit would also be constructed alongside the SEP 011 reroute conduit. Once the reroute conduit is in place, the SEP 011 headworks and a portion of the Southeast Lift Station would be demolished and taken out of service, while the SEP 010 Influent Control Structure remains intact, thereby opening space for construction of the new Headworks Facility and new influent junction structure.

The Influent Control Structure portion of the SEP 010 Influent Control Structure/Southeast Lift Station would remain in service until the new influent junction structure is constructed. Once the new influent junction structure is constructed and the BFS modifications are complete, the influent force mains, SEP 011 reroute conduit, and a temporary pipeline to the SEP 012 headworks influent pipe would be connected to the new influent junction structure. At this point, the SEP 010 Influent Control Structure/Southeast Lift Station would be completely demolished and construction of the new Headworks Facility would take place concurrently.

Following the construction of the influent junction structure and reroute pipe, the SEP 011 headworks would be demolished.

B.3.4. Fine Bar Screen Facility

A new fine bar screen facility would replace the function of existing fine bar screens. The screening facility would be located above grade and would range in height from approximately 32 feet to 61 feet. Individual screens housed in stainless-steel enclosures would remove debris from the wastewater. The bar screen channels would be covered, and ventilated air would be sent to odor scrubbers for treatment.

B.3.5. Grit Tanks

The new Headworks Facility would include grit removal tanks with isolation gates, duplex grit slurry pumps for each tank (one operating/one standby), grit washing and dewatering units, and grit storage bins for load-out. The grit tanks would be located above grade and would be approximately 26 feet high. The grit washers would be co-located with the grit storage bins. The grit tanks area would be ventilated and the exhausted air would be sent to odor scrubbers for treatment.

B.3.6. Support Facilities

A co-located common process/operations control room and electrical room would be constructed. These support facilities would be accessible from and serve both odor control and new Headworks

facilities. An additional electrical room would be located in the grit handling building to serve the grit removal and handling facility.

B.3.7. Odor Control Facility

After the SEP 010 Influent Control Structure/Southeast Lift Station is completely demolished, a new odor control system would be constructed at grade on this site. The odor control facility would include covers to contain odorous air emissions from the Headworks facilities, an exhaust fan system for capturing fugitive emissions, and two-stage odor control scrubbers. The first-stage treatment would involve the use of bioscrubbers, and the second-stage treatment would employ carbon adsorption scrubbers. The facility could be up to 65 feet high.

B.3.8. SEP 012 Headworks Demolition

The existing SEP 012 headworks is a one- to three-story structure with a floor area of approximately 29,000 square feet, located at the northwest side of the SEP next to Rankin Street. It is approximately 170 feet long, up to 90 feet wide, and up to 60 feet tall. The existing SEP 012 headworks would be demolished only after the new Headworks Facility is proven effective by at least two years of successful wet season operations.

B.3.9. Project Features to Address Sea Level Rise

In accordance with the SFPUC's Climate Change Guidance for SSIP Projects,[11] all proposed facilities that could be affected by future flooding due to the projected sea level rise of 36 inches by 2100 (i.e., the new Headworks Facility and odor control facility) would be designed to be flood-proof to a minimum elevation of 13.85 feet NAVD88.[12] This elevation is 1 foot above the 100-year flood level projected for 2100 (i.e., a 100-year storm surge in combination with 36 inches of sea level rise).

In addition, consistent with the SSIP Climate Change Guidance, the project would include adaptive features to prevent flood damage in the event of the worst-case scenario (i.e., a 100-year storm surge in combination with 66 inches of sea level rise). Specific flood-proofing features for potential flooding above 13.85 feet NAVD88 would be evaluated during the detailed design phase and implemented if feasible. At this time, it is expected that such features could include: precluding wall penetrations (such as doorways and vents) below 15.37 feet NAVD88; elevating the floor or base of the structure above 15.37 feet NAVD88; using flood-resistant materials and utility equipment; and designing or locating electrical, heating, ventilation, plumbing, and air conditioning equipment to prevent water from entering or accumulating within the components. In addition, all proposed structures would be adequately anchored to prevent flotation, collapse, or lateral movement in the event of flooding. See Topic E.15, Hydrology and Water Quality, for further discussion of future sea level rise.

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11 SFPUC, Climate Change Guidance for SSIP Projects Memo, March 23, 2015.

12 Elevations are provided in North American Vertical Datum of 1988 (NAVD88). An elevation of 0 feet San Francisco City Datum (SFCD) is equal to 11.35 feet NAVD88. The new Headworks Facility would be designed to be flood-proof to a minimum of +2 feet SFCD.

B.3.10. Compliance with Stormwater Management Ordinance

SFPUC intends to design all new facilities to comply with the City's Stormwater Management Ordinance. As part of the upgrades to the SEP, SFPUC also intends to implement a stormwater control plan for the entire SEP. Although details of the plan have not been developed, compliance measures could include installation of green infrastructure along the edges of the streets around the plant and use of permeable paving.

B.3.11. Compliance with Seismic Safety Requirements

The SFPUC constructs its facilities in conformance with an engineering practice standard that requires new facilities to be designed and built in conformance with the *General Seismic Requirements for the Design of New Facilities and Upgrade of Existing Facilities: Revision 3*. The new Headworks Facility would be designed to meet these requirements and design would also incorporate recommendations in the geotechnical report completed for the proposed project, including use of shoring systems to manage settlement.[13]

B.3.12. Compliance with Lighting Requirements

Outdoor lighting for the new Headworks Facility would be provided for safe vehicular and staff access to the site along internal site roadways and over doors at building entrances. General area lighting would be kept to a minimum level as deemed necessary for general safety. The proposed project would comply with the requirements of California Green Building Code Section 5.106.8, which specifies performance standards to reduce light pollution, and with the San Francisco Better Streets policy to minimize light trespass and glare to adjacent buildings.

B.4. CONSTRUCTION ACTIVITIES AND SCHEDULE

B.4.1. Construction Schedule

The project construction duration would be approximately 5 ½ years, from January 2017 to December 2021, and from January 2024 to June 2024, and is shown in **Table 3** below.

TABLE 3: ESTIMATED DURATION AND TIMING OF CONSTRUCTION ACTIVITY

Construction Activity	Estimated Duration	Schedule
Site Preparation	15 months	January 2017 – March 2018
Bruce Flynn Pump Station Improvements	12 months	January 2018 – January 2019
Main Headworks Project	44 months	April 2018 – December 2021
Existing Headworks Demolition (SEP 012)	6 months	January 2024 – June 2024
Source: SFPUC, 2016.		

Construction could take place Monday through Friday from 7:00 a.m. to 8:00 p.m., and Saturdays and Sundays as needed during these same hours. Work may also occur on holidays and 24 hours per day only if needed for critical facility connections. The project construction contractor would be responsible for obtaining the necessary permits to conduct nighttime activities. Standard SFPUC

[13] Geotechnical Consultants Inc. (GTC), *Draft Geotechnical Interpretive Report (GIR) New 250 MGD Headworks Facility Project Southeast Water Pollution Control Plan (SEP) San Francisco, California*. June 2016.

practice requires advance notification to area residents and businesses prior to weekend and nighttime activities.

B.4.2. Construction Methods

Table 4 shows the area of disturbance; the quantities of excavation, backfill, and demolition; and the associated number of truck trips. **Table 5** summarizes the estimated number of workers and trucks required to implement each component of the proposed project.

TABLE 4: ESTIMATED DEMOLITION, EXCAVATION, AND BACKFILL QUANTITIES

Construction Activity	Site Preparation	BFS Improvements	Main Headworks Project		SEP 012 Headworks	TOTAL
			SEP 011 Headworks	SEP 010 Influent Control Structure/ Southeast Lift Station		
Demolition						**Demolition**
Duration of Demolition	October 2017 – March 2018	–	–	January 2020 – April 2020	January 2024 – June 2024	16 months
Amount of Demolition (in cubic yards)	34,300	-	–	10,000	34,300	78,600
Excavation						**Excavation**
Duration of Excavation	–	January 2018 – September 2018	April 2018	April 2020 – June 2020		9 months
Depth of Excavation Below Grade (in feet)	–	Up to 50 (varies)	20	35		20 – 50
Area of Disturbance (in square feet)	–	9,195	55,200	7,940		72,335
Amount of Excavation (in cubic yards) [1]	–	12,054	52,920	1,061		66,035
Backfill						**Backfill**
Duration of Backfill	–	May 2018 – July 2018, October 2018 – December 2018	May 2018 – June 2018	July 2020 – October 2020		10 months
Amount of Backfill (in cubic yards)	–	7,972	42,200	7,598		57,770

Source: Carollo Engineers, Inc., 2016.
Note:
1. Expansion factor of 1.2 assumed.

TABLE 5: SUMMARY OF WORKERS AND TRUCKS DURING CONSTRUCTION

Activity	Estimated Average Number of Workers Per Day	Maximum Number of Workers Per Day	Approximate Number of Trucks per day	Total Number of Hauling Truck Trips (Excavation/ Demolition and Backfill) [1]
Site Preparation				
Reroute SEP 012 Excess Flow to Primary Clarifiers	31	42	15 – 22	1,906 (Demolition Hauling) [2]
SEP 011 Headworks and 398 Quint Street Demolition				
BFS				
BFS Improvements	48	72	24	670 (Excavation Hauling) 443 (Backfill) [3]
Main Headworks Project				
SEP 011 Headworks Excavation and Backfill	106	148	8 – 20	3,555 (Demolition and Excavation Hauling) 2,767 (Backfill) [4]
Civil and Yard Piping				
Influent Junction Structure and Influent Sampling				
Bar Screen Facility				
Screenings and Handling Facility				
Grit Basins				
Grit Handling Building				
Primary Influent Distribution Structure				
Odor Control Facility				
Engineering Instrument & Control				
Evans Avenue Improvements				
SEP 010 Influent Control Structure/Southeast Lift Station Demolition, Excavation, and Backfill				
SEP 012 Demolition				
SEP 012 Existing Headworks Demolition	31	42	15	1,906 (Demolition Hauling) [5]

Source: Carollo Engineers, Inc., 2016.
Notes:
1. Assumes 18 cubic yards per truck.
2. 34,300 cubic yards demolition ÷ 18 cubic yards per truck = 1,906 truck trips for demolition hauling
3. 12,054 cubic yards excavation ÷ 18 cubic yards per truck = 670 truck trips for excavation hauling; 7,972 cubic yards backfill ÷ 18 cubic yards per truck = 443 truck trips for backfill hauling
4. (10,000 cubic yards demolition + 52,920 cubic yards excavation (SEP 011) + 1,061 cubic yards excavation (SEP 010)) ÷ 18 cubic yards per truck = 3,555 truck trips for demolition and excavation hauling; (42,200 cubic yards backfill (SEP 011) + 7,598 cubic yards backfill (SEP 010)) + 18 cubic yards per truck = 2,767 truck trips for backfill hauling
5. 34,300 cubic yards demolition ÷ 18 cubic yards per truck = 1,906 truck trips for demolition hauling

B.4.3. Soil and Demolition Debris Removal and Backfill

Construction of the proposed project would require off-site disposal of approximately 144,600 cubic yards[14] of spoil (soil from excavations and demolition materials). Approximately 54,000 cubic yards of soil would be excavated at the SEP 010 Influent Control Structure/Southeast Lift Station and SEP 011 headworks locations and for construction of the new Headworks. Approximately 12,000 cubic yards of soil would be excavated for the sewer connections at the BFS. Soil would be excavated to depths of between 20 and 50 feet. The excavated soil would be temporarily stored at a construction staging area (BFS Adjacent Parcel, Evans Avenue, or available area in SEP) until it could be characterized and transported to a permitted disposal site. All soil would be hauled off site, and excavated areas would be backfilled with clean, imported fill. It would take approximately

14 The volume takes into account an expansion factor of 1.2 for excavated material.

3,669 truckloads over a 5-month period to haul away the 144,600 cubic yards of excavated material. Backfill transported to the site would require approximately 3,210 truck trips.

Approximately 78,600 cubic yards of debris would be generated during the demolition of the SEP 010 Influent Control Structure/Southeast Lift Station, SEP 011, and SEP 012. Demolition debris would be temporarily stored at a construction staging area and hauled off site for recycling or disposal, as required by the San Francisco Construction and Demolition Ordinance. It would take approximately 4,367 truckloads over a 16-month period to haul away the 78,600 cubic yards of demolition debris.

B.4.4. Equipment

The equipment needed to implement the project could include: backhoes, excavators, cranes, dump trucks, front-end loaders, asphalt pavement grinders, boiler trucks, reroute pipes, asphalt pavers, concrete trucks, and various passenger vehicles (refer to **Table 6**).

TABLE 6: CONSTRUCTION EQUIPMENT

Equipment Category	Details
Excavators/Muckers	• Mini Backhoe Cat 301 • Hydraulic Excavator 250 • Hydraulic Excavator 400 • Backhoe/Loader Cat 436 • Slurry Separation Plant • Digger Shield, 10-foot
Loaders	• Bobcat Loader • Wheel Loader Cat 950
Lift Units	• Tower Crane • Crawler Crane, 100-ton • Hydraulic Crane, 40-ton • Forklift, 4-ton
Concrete Equipment	• Concrete Vibrator • Grout Pump, Mixer • Grout Plant, 12-cubic-yard
Air/Power Tools	• Spader • Jackleg Drill
Compactors	• Compactor, BW9AS
Plant Equipment	• Compressor, Trailer • Compressor, Stationary • Generator, skid-mounted, 725-kilowatt • Submersible Pump, 850-gallon-per-minute • Ventilation Fan, 40-horsepower • Ventilation Fan, 100-horsepower • Welder 400A, Trailer • Water Treatment Plant
Attachments	• Vibratory Sheet Pile Driver • Hoe-Ram Attachment • Clamshell, 5-cubic-yard

B.4.1. Construction Staging and Public Right-of-Way

Construction staging areas would be used for construction office trailers, construction equipment and materials, and parking for construction worker vehicles. If necessary, staging areas could also be used to temporarily stockpile demolition debris and excavated soil prior to reuse or off-site disposal. Construction staging would be located within the SEP site, along Evans Avenue, at a lot adjacent to the BFS, along Phelps Street, and in an off-site area (up to 4 acres) located at the Pier 94

Backlands, Pier 94, and Pier 96. **Figure 11** shows the lot adjacent to the BFS and the off-site staging areas. **Figure 12** shows the staging areas at the SEP site and BFS parcel. Staging areas are described below:

- **SEP** – Available areas within the SEP site may be used during construction for laydown of equipment and materials.

- **Evans Avenue** – The sidewalk, parking lane, and one traffic lane on the south side of Evans Avenue between Rankin and Quint Streets would be temporarily closed and used as staging areas for the duration of construction. The remaining three traffic lanes and the opposite-side parking lane would be used for two-lane traffic in each direction, with the exception of a 5 month period when this would be reduced to one traffic lane in each direction for the BFS sewer connection construction. During the 5 month period, the sidewalk, parking lane, and two travel lanes on the north side of Evans Avenue between Rankin Street and Quint Street would be temporarily closed. Pedestrians would have access along Evans Avenue between Phelps Street and Rankin Street at all times. No parking would be allowed on this segment of Evans Avenue for the duration of construction

- **Rankin Street** – Both travel lanes and the sidewalk on the east side of Rankin Street between Evans Avenue and Davidson Avenue would be temporarily closed for a 9 month period for the BFS sewer connection construction (5 months for the sewer connection along Evans Avenue and 4 months for the Rankin Street sewer connection construction). Access for the business on the west side of Rankin Street would be maintained during construction.

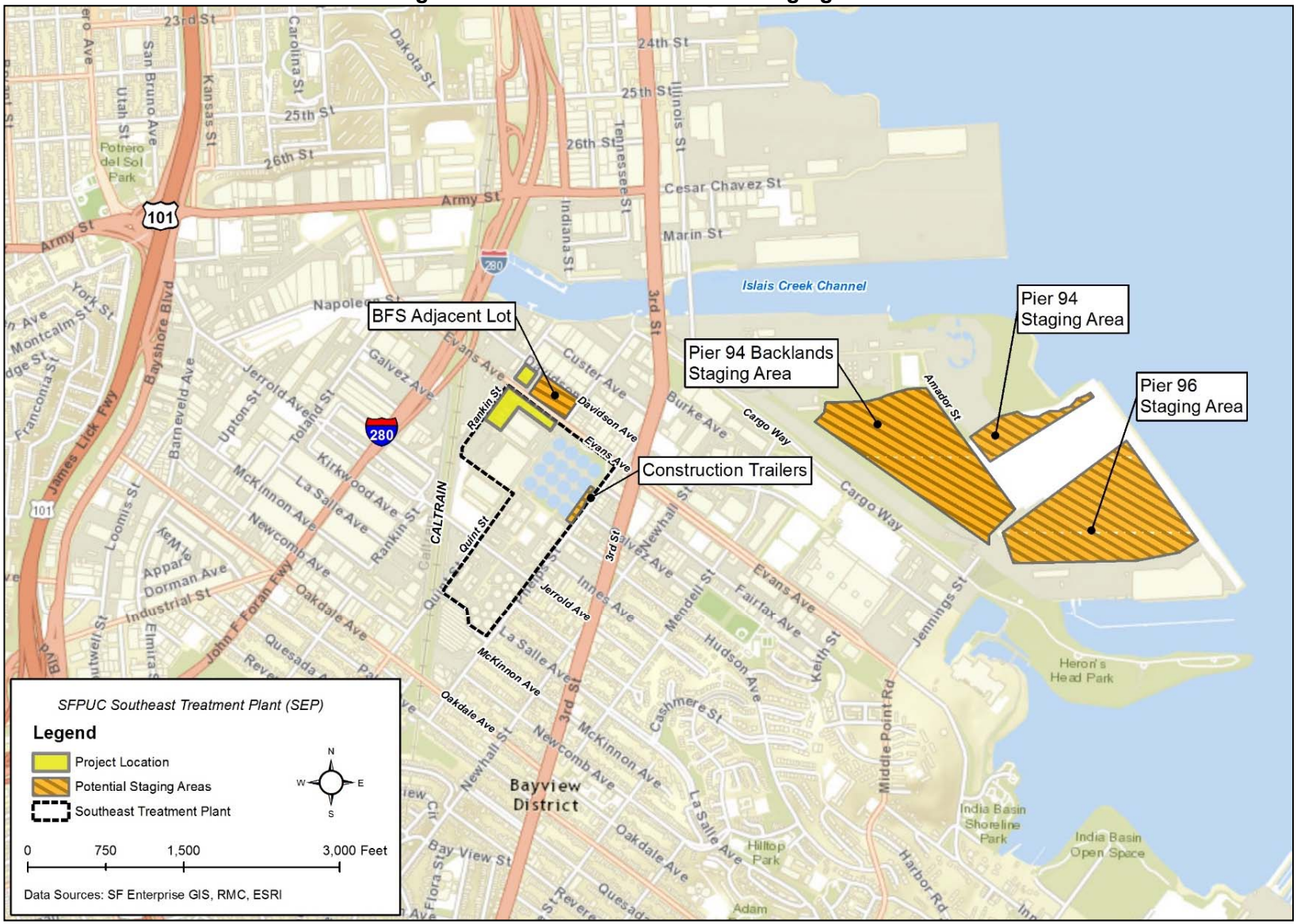
- **Davidson Avenue** – As part of the BFS sewer connection construction, the southern half of Davidson Avenue would be temporarily closed for up to 5 months, leaving one travel lane available on Davidson Avenue between Rankin Street and Quint Street.

- **Phelps Street** – This approximately 0.5-acre staging area, which is located generally along 500-700 Phelps Street adjacent to SEP 230 (secondary sedimentation tanks), would be used for SFPUC Construction Management Bureau office trailers (Figure 12). Trenching along Phelps Street would be required to install a sewer line from the construction trailers to an adjacent sewer manhole.

- **BFS Adjacent Lot** – This approximately 2-acre staging area, which is adjacent to the BFS and bounded by Evans Avenue, Quint Street, and Davidson Avenue, would be used for contractor office trailers, a conference room, restrooms, a meal room, and supervisor and visitor parking (Figure 12). This lot contains the building located at 398 Quint Street. This building would be demolished prior to the lot being put into use as a staging area. The Port of San Francisco railroad separates this staging area into two triangular areas. The railroad must be kept continuously open to train traffic on most weekdays. The BFS adjacent lot combined with the BFS facility are together referred to as the BFS Parcel.

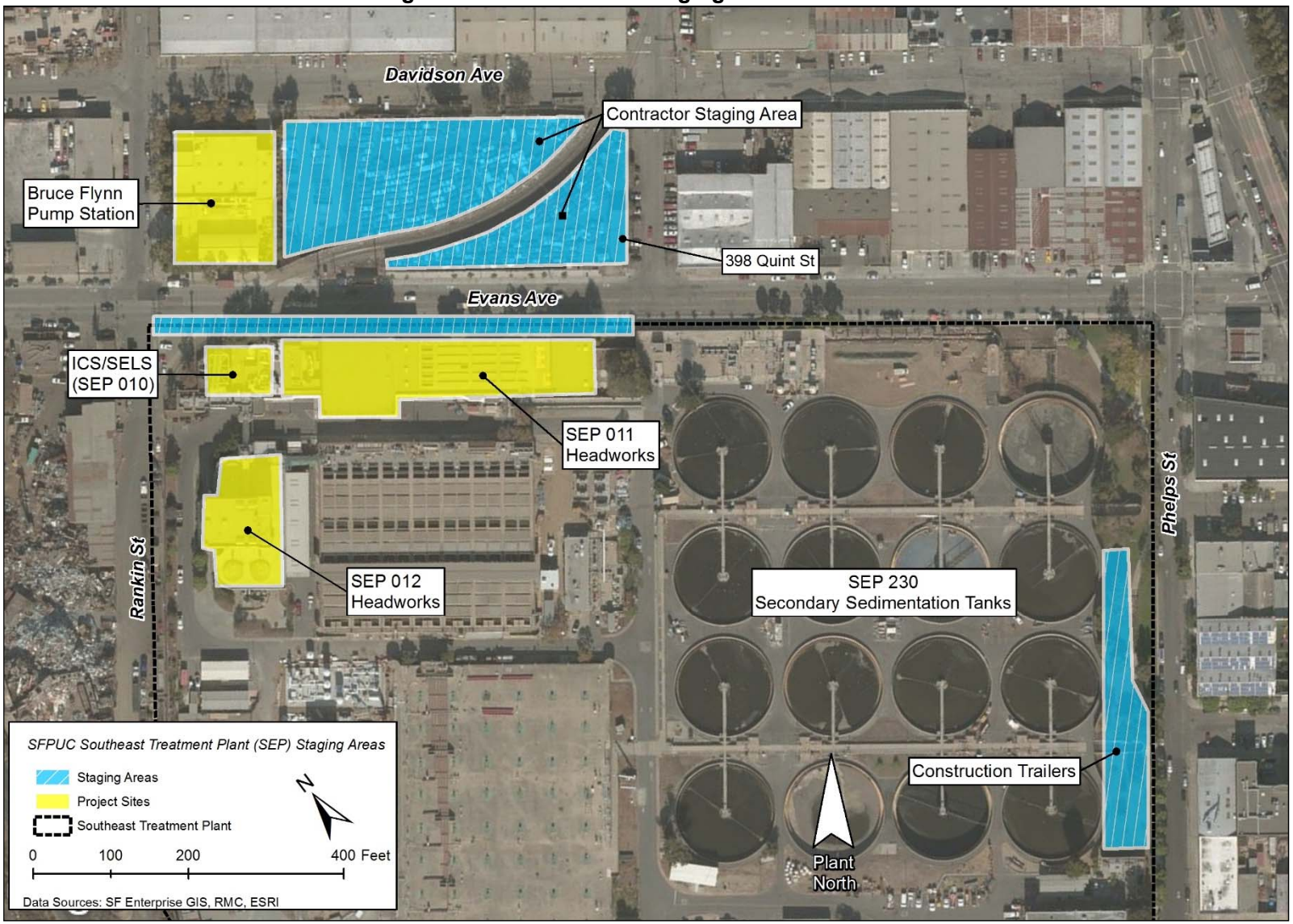
- **Off-site Locations at Pier 94 Backlands, Pier 94, and Pier 96** – These staging areas, owned by the Port of San Francisco, are located approximately 0.75 mile northeast of the SEP on Amador Street (refer to Figure 11). Depending on the phase of the construction, up to 4 acres of these larger staging areas would be used for materials storage and employee parking, but not soil stockpiling due to Port restrictions. Boundaries of staging areas would be at least 100 feet away from the Bay shoreline and wetland areas at the Pier 94 and Pier 94 Backlands Staging Areas. Shuttle service would be provided to transport construction workers between Pier 94, Pier 96, and Pier 94 Backlands and the project site via Amador Street, Third Street, Custer Avenue, and Rankin Street. As part of a separate project, the Port plans to spread the stored gravel at the Pier 94 Backlands to create a gravel pad throughout the site, and install potable water, electricity, and composting toilets. The use of any of the Port property may require the installation of electric lines and potable water lines. Thus, minor excavation may be required for utilities at the off-site locations. Wastewater would be collected in temporary restrooms and hauled to the SEP for disposal.

Figure 11: Potential Construction Staging Areas



Source: RMC Water and Environment, 2016.

Figure 12: Construction Staging Areas at the SEP



Source: SFPUC, 2016; adapted by RMC Water and Environment, 2016.

B.4.2. Dewatering of Excavated Areas

It is assumed that dewatering would be required during excavation due to the groundwater table depth below the SEP site. Where groundwater is encountered, the excavation would be dewatered as needed to construct the proposed project components. Other measures would also be implemented, such as installing water-impermeable shoring walls, localized sump pumps, and working pads made of crushed rock, to minimize water infiltration into the excavated areas. The construction contractor would collect, hold, treat, and test the groundwater pumped from the excavated area, as necessary, before discharging it to the local combined sewer system in accordance with the City and County of San Francisco's (CCSF) water quality requirements. The contractor would provide temporary holding tanks to settle out soil particles and would conduct chemical testing of the pumped groundwater as well as treat the water for any contaminants. The contractor would be required to ensure that the methods used to discharge groundwater into the combined sewer system at the SEP comply with all CCSF regulations and permit conditions.

B.4.3. Tree Removal

Construction activities associated with the new Headworks Facility would require tree removal. Approximately 34 trees would be removed along Evans Avenue so that the new Headworks Facility and perimeter wall could be extended to the boundary of the SEP site. Approximately 48 trees would be removed along Phelps Street to clear an area for construction staging. The contractor would be required to ensure that removal and replacement of any street trees along Evans Avenue and Phelps Street is conducted pursuant to Article 16 of the San Francisco Public Works Code, Section 806(a) and the Urban Forestry Ordinance.

B.4.4. Water Use during Construction

Article 21 of the Public Works Code, which applies to all construction projects in San Francisco, restricts the use of potable water for soil compaction and dust control activities and requires the use of recycled water, well water or groundwater. The contractor would be required to use SEP recycled water, consistent with Title 22 of the California Code of Regulations (Division 4), which allows the use of recycled water for dust control on roads and streets, backfill consolidation around nonpotable piping, soil compaction, and cleaning roads, sidewalks, and outdoor work areas. However, in accordance with state regulations, SEP recycled water cannot be used for pressure washing, or dust control through aerial spraying. In addition, SFPUC guidelines do not allow the use of SEP recycled water for mixing concrete due to the water's high salinity.

B.4.5. Erosion and Sediment Control Plan

The SFPUC or its contractor(s) would be required to develop and implement an erosion control and sediment control plan for areas that discharge to the combined sewer system, and either an erosion and sediment control plan or a Storm Water Pollution Prevention Plan (SWPPP) (depending on the size of the disturbance) for areas that discharge to the Bay directly or via a separate stormwater system to address construction related runoff. The plans would include a suite of best management practices (BMPs), including but not limited to the following: installation of temporary sediment barriers such as fiber rolls, sandbags, gravel bags in areas with potential erosion; and installation and maintenance of silt dams on public streets to prevent sediments from

flowing into storm drain inlets and public streets. The SFPUC would conduct routine inspections of all BMPs to document compliance and identify deficiencies to be corrected.

B.4.6. Program Construction Manager

Given the multitude of planned projects and ongoing operations at the SEP, the SFPUC has formed a Site Logistics Committee to coordinate future SEP site construction and ongoing operations. This committee works with program managers, project managers, and SEP operations staff to establish and update preconstruction plans for coordinated construction staging, parking, project interfaces, and traffic control. A Program Construction Manager would be hired by the SFPUC prior to construction of major SEP projects (i.e., Headworks Facility and Biosolids Digester Facilities Project) who would manage project implementation of these plans and lead coordination efforts between the projects and SEP operations throughout construction. The Program Construction Manager would also be responsible for coordinating with the project teams to update the San Francisco Municipal Transportation Agency (SFMTA) as needed to address local traffic, transit, bicycle, and pedestrian issues.

B.4.7. Traffic Control Plan

The SFPUC or its contractor(s) would be required to prepare and implement a traffic control plan to address construction activities. The plan must conform to the *Regulations for Working in San Francisco Streets* (i.e., the SFMTA's Blue Book). Elements of the traffic control plan may include, but are not limited to, the following:

- To the extent applicable, the traffic control plan shall conform to the SFMTA's Regulations for Working in San Francisco Streets (Blue Book) 8th Edition and the state's Manual of Traffic Controls for Construction and Maintenance Work Areas.

- Advance warning signs (e.g., a reverse curve sign) shall be installed on Evans Avenue to the west of Rankin Street and east of Quint Street, to give road users advance notice of a lane shift to the left or right and to minimize hazards associated with shifting travel lanes on Evans Avenue to the north between Rankin and Quint Street.

- In the event of travel lane closures on Evans Avenue, advance warning signs as well as alternate routes shall be posted on Evans Avenue to the east of Phelps Street and west of Toland Street, to give road users advance notice of lane merge and to minimize hazards associated with merging travel lanes on Evans Avenue between Rankin and Quint Streets.

- In the event Rankin Street is closed to through vehicular traffic between Evans Avenue and Davidson Avenue, detour signs shall be installed on Rankin Street, Evans Avenue, and Davidson Avenue to reroute traffic to Quint Street and Phelps Street.

- In the event of a lane closure on Davidson Avenue, the remaining travel lane shall be converted to maintain two-way traffic at all times. Given low traffic volumes along Davidson Avenue (up to approximately 100 peak-hour trips) with short work zones, flaggers shall be positioned at each end of the work zone to alternate traffic flow.

Additionally, advance warning signs shall be installed along Davidson Avenue to advise motorists the use of alternate routes such as Custer Avenue instead of Davidson Avenue.

- A temporary signalized crossing shall be installed at the intersection of Evans Avenue and Quint Street for the duration of project construction. The temporary traffic signal would be subject to SFMTA's approval.

- Given the presence of an active railroad spur through the BFS adjacent lot and across Evans Avenue and Rankin Street, SFPUC shall file a necessary permit and coordinate with Union Pacific Railway as needed to ensure the safety of roadway users during project construction.

- Pursuant to requirements in SFMTA's Blue Book, the contractor shall post "Tow-Away No Stopping" signs to clear the parking lane on the south side of Evans Avenue between Quint and Rankin Street, the east side of Rankin Street between Evans Avenue and Davidson Avenue, and the south side of Davidson Avenue between Rankin Street and the 150 feet east. The signs shall be posted at least 72 hours in advance of the effective date and time in order to give the public sufficient notice.

- Pursuant to a requirement in the SFMTA's Blue Book, flaggers shall be required where workers or equipment temporarily block a travel lane for access into and out of a construction area. When construction trucks are making wide turns at the Rankin Street/ Evans Avenue intersection and into the project site via Rankin Street gate, flaggers, illuminated signs, a temporary stop sign or a combination of these methods shall be used to slow approaching traffic through the construction period.

- Roadside safety protocols shall be implemented in the project vicinity. Advance "Road Work Ahead" warning signs and speed control (including signs informing drivers of state-legislated double fines for speed infractions in a construction zone) shall be provided to achieve required speed reductions for safe traffic flow along Evans Avenue, Rankin Street, and Davidson Avenue.

- Advance warning signs shall be posted along Evans Avenue to inform bicyclists about construction activities and to provide alternate routes such as the separated Class II facility along Cargo Way or the Class III facility along Third Street. Pursuant to requirements in the Blue Book, safe pedestrian and bicycle paths of travel in the project vicinity shall be maintained. The contractor shall post a "Bicycles May Use Full Lane" sign on Evans Avenue west of Rankin Street and east of Quint Street, and / or a "Bicycle Route Detour" sign on Cesar Chavez Street and on Third Street.

- The roadway right-of-way on Evans Avenue shall be restored to its original condition and improved with the installation of bulb-outs on the south side of Evans Avenue upon completion of construction. The proposed improvements are subject to SFMTA's approval.

- The roadway rights-of-way along Evans Avenue, Rankin Street, and Davidson Avenue shall be repaired or restored to their original conditions upon completion of construction. A preconstruction survey shall be conducted on these roadways to establish the baseline condition of the roadways.

- All equipment and materials shall be stored in designated contractor staging areas on the south side of Evans Avenue between Rankin and Quint Streets, in a manner intended to minimize obstruction of traffic.

- Pursuant to requirements in the SFMTA's Blue Book, the contractor shall notify Muni Service Planning of project construction and request authorization from SFMTA for a temporary relocation of the bus zone at Evans Avenue/Quint Street from a nearside stop to a farside stop at least 10 days in advance of the commencement of project construction activities. Construction vehicle movement shall be controlled and monitored through the enforcement of standard construction specifications by on-site inspectors.

- Construction shall be coordinated with facility owners or administrators of the nearest sensitive land uses such as police and fire stations (San Francisco Police Department Bayview Station at 201 Williams Avenue [about a mile south of the project site], Fire Station No. 49 at 1415 Evans Avenue [about a half mile southeast of the project site] and Fire Station No. 25 at 3305 Third Street [about a half mile east of the project site]), hospitals (San Francisco General Hospital at 1001 Potrero Avenue [about a mile northwest of the project site], and schools (Willie L. Brown Jr. Middle School at 2055 Silver Avenue [about 0.75 miles southwest of the project site]). Facility owners or operators shall be notified in advance of the timing, location, and duration of construction activities, and if any, the lane closures and alternative routes.

B.5. Operation and Maintenance

The new Headworks Facility would operate 24 hours per day, 7 days a week, similar to current conditions. There would be no increase in staff levels at the site, and the total wastewater treatment capacity would not increase beyond the existing 250 mgd. The on-site truck circulation surrounding the new Headworks Facility would not be altered. Primary entry and exit would remain at the 1700 Jerrold Avenue gate (Figure 8). The number of daily truck trips required for screenings and grit disposal would remain similar to existing conditions.

B.6. Project Permits and Approvals

It is anticipated that permits or approvals would be required from the following agencies:

- California Environmental Protection Agency's Department of Toxic Substances Control (DTSC) – Review and approval of waste disposal management plan addressing construction activities and on-site contamination.

- SFPUC Wastewater Enterprise – Batch permit for discharging groundwater to SFPUC wastewater facilities.

- SFPUC Wastewater Enterprise – Permit for construction stormwater management.
- Bay Area Air Quality Management District – (BAAQMD) – Authority to Construct and Permit to Operate.
- State Water Resources Control Board (SWRCB) – Construction General Permit, Stormwater Pollution Prevention Plan, and State Revolving Fund Loan Program.
- State Historic Preservation Officer: Section 106 of the National Historic Preservation Act (as part of the State Revolving Fund Loan application process)
- San Francisco Public Works (SFPW): Approval of Sidewalk Changes (SFPW Order) and Street Improvement Permit
- San Francisco Board of Supervisors: Approval of Sidewalk Legislation
- San Francisco Port Commission: Approval of use of Pier 94 and Pier 96 for construction staging

The SFPUC proposes to conduct all construction activities in compliance with all relevant local regulations and ordinances. Relevant requirements are typically included in the construction specifications that are developed during design, prior to the bidding of a project and its construction.

The project itself would require approval by the SFPUC at a duly noticed public hearing.

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.	☒	☐

This section provides a general description of applicable land use plans and policies and how they apply to the project. Potential inconsistencies between the project and the applicable plans are also discussed. Section B, Project Permits and Approvals, above, describes the anticipated permits and approvals required for project implementation. Project consistency with a particular plan is decided at the time of project approval by the agency charged with that determination. Land use plans typically contain numerous policies that emphasize differing legislative goals, and an interpretation of consistency requires decision-makers to balance the relevant policies. The board or commission that enacted a plan or policy determines the meaning of the policy as well as whether an individual project satisfies the policy at the time the board considers approval of the project.

The proposed project is located in San Francisco, and the proposed improvements would occur within existing roadways, at the existing SEP, at the BFS, and at 398 Quint Street. The SEP site is zoned "Public" (P) and "Heavy Industrial" (M-2), and the new Headworks Facility would be located within the M-2 zone. The BFS and the 398 Quint Street parcel are zoned "Production, Distribution & Repair" (PDR-2). No variances, special authorizations, or changes to the San Francisco Planning Code or Zoning Map are proposed as part of this project; therefore, these issues are not applicable and are not discussed further.

C.1. City and County of San Francisco Plans and Policies

This section discusses the plans and policies of the CCSF and the SFPUC as well as other local plans that apply to the project area. The project site is in San Francisco and is owned by the CCSF; the SFPUC is a department of the CCSF and has exclusive jurisdiction over the property. As it is an agency of the CCSF, the SFPUC is under the jurisdiction of the CCSF's charter and plans, where applicable. In addition, the SFPUC has adopted plans specific to the management of its water resources. The other local plans discussed here are also relevant to the evaluation of project impacts and the compatibility of the project with certain aspects of local land use plans and policies.

C.1.1. San Francisco General Plan

The San Francisco General Plan,[15] as amended, sets forth the comprehensive long-term land use policy for the CCSF. The General Plan consists of 10 issue-oriented plan elements that set forth goals, policies, and objectives for the physical development of San Francisco: Air Quality, Arts, Commerce and Industry, Community Facilities, Community Safety, Environmental Protection, Housing, Recreation and Open Space, Transportation, and Urban Design. The General Plan elements relevant to the project are briefly described below:

- **Air Quality Element** – Promotes clean air planning through objectives and policies that ensure compliance with air quality regulations.

- **Community Safety Element** – Addresses the potential geologic, structural, and nonstructural hazards to CCSF-owned structures and critical infrastructure, with the goal of protecting human life and property from hazards.

- **Environmental Protection Element** – Addresses the impact of urbanization on the natural environment by promoting the protection of plant and animal life and freshwater sources; and maintaining and improving the quality of the Bay, ocean, and shoreline areas.

There are two relevant objectives, and one policy under each objective, that directly apply to the proposed project. Specifically, Community Facilities Element Objective 10: "Locate wastewater facilities in a manner that will enhance the effective and efficient treatment of storm and wastewater," and Policy 10.1: "Provide facilities for treatment of storm and wastewater prior to discharge into the Bay or ocean. Locate such facilities according to the Wastewater and Solid Waste Facilities Plan." The Wastewater and Solid Waste Facilities Plan (Map 5 of the Community Facilities

15 City and County of San Francisco, *San Francisco General Plan*, 1996. Available at: http://www.sf-planning.org/ftp/general_plan/.

Element) identifies the general boundaries of the SEP. Also relevant are Environmental Protection Element Objective 10: "Maintain and improve the quality of the bay, ocean, and shoreline areas," and Policy 3.3: "Implement plans to improve sewage treatment and halt pollution of the Bay and Ocean." The project would construct a new Headworks Facility at the SEP, thus ensuring the adopted LOS are met for wastewater treatment, protection of public health and safety, current seismic standards, and advanced odor control. Accordingly, the project would not appear to conflict with forgoing policies and objectives relative to the protection of public safety and to the continued production of effluent that meets water quality standards.

The use of construction equipment during project implementation would create dust and result in emissions of criteria air pollutants. However, the SFPUC would require the construction contractor to implement site-specific best management practices to control emissions; furthermore, implementation of construction emissions minimization measures (see Mitigation Measure M-AQ-1 in Section E.7, Air Quality) would reduce construction-related air quality impacts to a less-than-significant level. The project would therefore not appear to conflict with the Air Quality, Community Safety, and Environmental Protection Elements, nor would it substantially conflict with any applicable General Plan goals, policies, or objectives.

Decision-makers will consider the compatibility of the project with General Plan goals, policies, and objectives as part of their assessment as to whether or not to approve or disapprove the project. Any potential conflicts identified as part of this process would not alter the physical environmental effects of the project.

C.1.2. Bayview Hunters Point Area Plan

The *Bayview Hunters Point Area Plan*,[16] which is part of the General Plan, is the CCSF's plan for the Bayview–Hunters Point area of San Francisco, where the proposed project is located. The plan includes objectives and policies pertaining to land use, transportation, housing, commerce, industry, urban design, recreation and open space, community facilities and services, public safety, and energy. The plan assigns the Public Facilities and Light Industrial land use designations to the project site. The Pier 94 Backlands, Pier 94, and Pier 96 staging areas are designated as Maritime Industrial and identified as "Port land" in the plan. The plan also identifies this area as a "required soil testing zone" for hazardous materials. Please refer to Section C.3, Other Plans, below, for a description of the *Waterfront Land Use Plan*, the land use planning document for the Pier 94 Backlands, Pier 94, and Pier 96 areas.

The *Bayview Hunters Point Area Plan* contains one relevant objective and one policy under this objective that directly applies to the proposed project: Housing Element Objective 5: "Preserve and enhance existing residential neighborhoods", Policy 5.4: "Complete modernization of Waste Water facilities, by completing the Crosstown Tunnel component of the approved Waste Water Master Plan, or another alternative which would achieve the same objective in order to enhance residential livability along the southeast shoreline."

16 San Francisco Planning Department, *Bayview Hunters Point Area Plan*, Amended on June 3, 2010. Available at http://www.sf-planning.org/ftp/General_Plan/Bayview_Hunters_Point.htm, accessed on August 12, 2015.

The proposed project would modernize the headworks facility at the SEP and construct an odor control facility at the site. Construction of the new Headworks Facility would improve efficiency in the screening and grit removal process, protect downstream process equipment, and maximize odor control within the treatment facility. As a result, the project would not appear to conflict with any *Bayview Hunters Point Area Plan* objectives or policies.

C.1.3. Accountable Planning Initiative

In November 1986, the voters of San Francisco approved Proposition M, the Accountable Planning Initiative, which added Section 101.1 to the Planning Code[17] to establish eight priority policies. These policies and sections of this Section E, Evaluation of Environmental Effects, addressing the environmental issues associated with these policies, are: (1) preservation and enhancement of neighborhood-serving retail uses (not applicable); (2) protection of neighborhood character (Question E.1[c], Land Use and Land Use Planning); (3) preservation and enhancement of affordable housing (Question E.3[b], Population and Housing, with regard to housing supply and displacement issues); (4) prevention of commuter automobiles from impeding Muni transit service or overburdening streets or neighborhood parking (Questions E.5[a], E.5[b], E.5[f], and E.5[g], Transportation and Circulation); (5) protection of industrial and service land uses from commercial office development and enhancement of resident employment and business ownership (Question E.1[c], Land Use and Land Use Planning); (6) maximization of earthquake preparedness (Questions E.13[a] through E.13[d], Geology and Soils); (7) landmark and historic building preservation (Question 4a, Cultural Resources); and (8) protection of parks and open space and their access to sunlight and vistas (Questions E.8[a] and E.8[b], Wind and Shadow, and Questions E.9[a] and E.9[c], Recreation).

Prior to issuing a permit for any project that requires an Initial Study under the California Environmental Quality Act (CEQA), or issuing a permit for any demolition, conversion, or change of use, and prior to taking any action that requires a finding of consistency with the General Plan, the CCSF is required to find that the project would be consistent with these priority policies. Of the eight priority policies, Policies 2, 4, 6, 7, and 8 appear relevant to the project. Policies 1, 3, and 5 do not appear applicable because the project, which would consist of replacing existing headworks facilities with a new facility within the boundary of the existing SEP, would have no effect on neighborhood-serving retail uses; would have no effect on nor create the need for affordable housing; would not include commercial office development; and would not affect resident employment or business ownership.

The project would not seem to obviously or substantially conflict with the remaining priority policies. The project appears consistent with the following policies: Policy 2 (construction of the project would occur within the existing facility and would not change the land use or character of the site); Policy 4 (the project would not impede Muni transit service or overburden streets or neighborhood parking); Policy 6 (the project would construct facilities that meet current seismic standards); Policy 7 (the SEP site is not a historic landmark; also, 398 Quint Street was evaluated

17 City and County of San Francisco, *San Francisco Planning Code, Section 101.1*. Available at http://library.amlegal.com/nxt/gateway.dll/California/planning/planningcode?f=templates$fn=default.htm$3.0$vid=amlegal:sanfrancisco_ca$anc=JD_Planning, accessed on March 7, 2016.

and determined to be ineligible for listing, and thus its demolition would not result in significant effects on landmarks or historic buildings); and Policy 8 (the new Headworks Facility would not result in a change in access to parks and open space and would not alter access to sunlight and vistas). Therefore, there are no apparent inconsistencies between the project and these policies.

C.1.4. San Francisco Bicycle Plan

In August 2009, the Board of Supervisors approved the *San Francisco Bicycle Plan*[18] (Bicycle Plan), which includes a citywide bicycle transportation plan (comprising a Policy Framework and a Network Improvement document). The Bicycle Plan contains objectives and identifies policy changes to enhance bicycle access and safety with respect to San Francisco's "bike-ability." It also describes the existing bicycle route network (a series of interconnected streets in which bicycling is encouraged) and identifies gaps within the citywide bicycle route network that require improvement. The 2009 Bicycle Plan updates the 1997 Bicycle Plan. The final EIR analyzing the Bicycle Plan assessed 56 short-term and long-term bicycle improvement projects. In the vicinity of the project site, Pier 94 Backlands, and the Pier 94 and 96 staging areas, the Bicycle Plan identifies existing bicycle routes on Evans Avenue, Phelps Street and Third Street. The plan calls for near-term improvements including a bicycle route on Cargo Way, and long-term minor improvements on Third Street and Cargo Way. Temporary impacts related to bicycle access and circulation during construction are addressed in Section E.5, Transportation and Circulation, and would be addressed through implementation of the traffic control plan as part of the project. The construction and operation of the proposed project would not alter existing or future bicycle lanes. Therefore, the proposed project does not appear to obviously or substantially conflict with the Bicycle Plan.

C.1.5. Climate Action Plan

In February 2002, the San Francisco Board of Supervisors passed the Greenhouse Gas Emissions Reduction Resolution (Number 158-02) committing the CCSF to a greenhouse gas (GHG) emissions reduction goal of 20 percent below 1990 levels by the year 2012. The resolution also directed the San Francisco Department of the Environment, the SFPUC, and other appropriate CCSF agencies to complete and coordinate an analysis of and planning for a local action plan targeting GHG emissions reduction activities. In September 2004, the Department of the Environment and the SFPUC published the *Climate Action Plan for San Francisco: Local Actions to Reduce Greenhouse Gas Emissions*.[19] The *Climate Action Plan* examines the causes of global climate change and evaluates human activities that contribute to global warming, providing projections of climate change impacts on California and San Francisco from recent scientific reports; presents estimates of San Francisco's baseline GHG emissions inventory and reduction targets; describes recommended emissions reduction actions in the key target sectors—transportation, energy efficiency, renewable energy, and solid waste management—to meet stated goals by 2012; and presents next steps required over the near term to implement the plan. Although the Board of Supervisors has not formally committed the CCSF to perform the actions addressed in the plan, and many of the actions

18 San Francisco Municipal Transportation Agency, *San Francisco Bicycle Plan*, June 26, 2009. Available at: https://www.sfmta.com/sites/default/files/projects/San_Francisco_Bicycle_Plan_June_26_2009_002.pdf.

19 San Francisco Department of the Environment/San Francisco Public Utilities Commission, *Climate Action Plan for San Francisco: Local Actions to Reduce Greenhouse Gas Emissions*, September 2004. Available at: http://www.sfenvironment.org/sites/default/files/fliers/files/climateactionplan.pdf.

require further development and commitment of resources, the plan serves as a blueprint for GHG emission reductions, and several actions are now in progress.

The *Climate Action Plan* cites an array of potential environmental impacts on San Francisco resulting from climate change, including rising sea levels that could threaten coastal wetlands, infrastructure, and property; increased storm activity that could increase beach erosion and cliff undercutting; warmer temperatures that could result in more frequent El Niño storms, in turn causing more rain than snow in the Sierra and thus reducing the snow pack, which is an important source of the region's water supply; decreased summer runoff and warming ocean temperatures that could affect salinity, water circulation, and nutrients in the Bay, potentially altering Bay ecosystems; other possible effects on food supply and the viability of the state's agricultural system; possible public health effects related to degraded air quality and changes in disease vectors; and other social and economic impacts.

The plan presents estimates of San Francisco's baseline GHG emissions inventory and reduction targets. It indicates that burning fossil fuels in vehicles and for energy use in buildings and facilities is the major contributor to San Francisco's GHG emissions. The plan includes GHG reduction strategies such as targeting emissions from fossil-fuel use in cars, power plants, and commercial buildings; developing renewable energy technologies like solar, wind, fuel cells, and tidal power; and expanding residential and commercial recycling programs. According to the plan, achieving these goals will require the cooperation of a number of different CCSF agencies. The CCSF achieved its 2012 goal, with greenhouse gas emissions in that year at 23 percent below 1990 levels.[20]

An analysis of potential project effects related to global warming and GHGs is presented in Topic 8, Greenhouse Gas Emissions, of this Initial Study. The project does not appear to obviously or substantially conflict with the *Climate Action Plan*.

C.1.6. Better Streets Plan

The *San Francisco Better Streets Plan*,[21] adopted in 2010, presents a unified set of standards, guidelines, and implementation strategies to govern how the CCSF designs, builds, and maintains its pedestrian and streetscape facilities. The *Better Streets Plan* contains goals, policies, and design guidelines to improve pedestrian safety and accessibility, create a unified streetscape design, integrate pedestrians with transit, and improve street ecology and greening. Goals and policies applicable to the project include universal pedestrian-oriented streetscape design that incorporates street trees. Please see Section E.13, Biological Resources, for an analysis of the project's impacts on street trees. An analysis of potential project effects on pedestrians is presented in Section E.5, Transportation and Circulation, of this Initial Study. The proposed project does not appear to obviously or substantially conflict with the *Better Streets Plan.*

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20 ICF International, *Technical Review of the 2012 Community-wide Inventory for the City and County of San Francisco*, January 21, 2015.

21 City and County of San Francisco. *San Francisco Better Streets Plan,* Adopted on December 7, 2010. Available at: http://www.sf-planning.org/ftp/betterstreets/proposals.htm#Final_Plan.

C.1.7. San Francisco Sustainability Plan

Although the San Francisco Board of Supervisors endorsed the *Sustainability Plan for the City of San Francisco* in 1997, the Board has not yet committed the CCSF to perform the actions outlined in the plan. The plan serves as a blueprint for sustainability, with many of its individual proposals requiring further development and public comment. The plan's underlying goals are to maintain the physical resources and systems that support life in San Francisco, and to create a social structure that will allow such maintenance. The plan is divided into 15 topic areas, 10 of which address specific environmental issues: air quality; biodiversity; energy; climate change and ozone depletion; food and agriculture; hazardous materials; human health; parks, open spaces, and streetscapes; solid waste; transportation; and water and wastewater. The other five areas are broader in scope and cover many issues, including the economy and economic development; environmental justice; municipal expenditures; public information and education; and risk management. Under the topic of "water and wastewater" are goals addressing water reuse, water quality, water supply, groundwater supply, and infrastructure. Each topic area has a set of indicators designed for use over time in determining whether San Francisco is moving in a direction that supports sustainability for that area.

The *Sustainability Plan for the City of San Francisco* was developed to address the city's long-term environmental sustainability. The proposed project does not appear to conflict with the goals of the plan, because it would maintain the physical resources and systems (wastewater treatment) that support life in San Francisco.

C.2. SFPUC PLANS AND POLICIES

C.2.1. SFPUC Strategic Sustainability Plan

The SFPUC's 2011 *Strategic Sustainability Plan*[22] provides a framework for planning, managing, and evaluating SFPUC-wide performance, taking into account the long-term economic, environmental, and social impacts of the SFPUC's business activities. This plan consists of a "Durable Section" that contains goals, objectives, and performance indicators for use in implementing the SFPUC's vision and values. The goals and objectives are then used to drive the plan's "Dynamic Section," which contains specific actions, targets, measures, and budgeting. The SFPUC uses this document to evaluate its performance semiannually, to provide an annual score card, and to help the SFPUC measure progress on an annual basis.

The plan contains objectives to "optimize planning to meet water, wastewater, and power demand" and "improve capital facilities through construction," with actions to "complete planning for the Sewer System Improvement Program (SSIP)," "prioritize sewer replacement (SSIP) and begin the increase of sewer replacement," and "address climate change concerns, including adaptation and greenhouse gas mitigation."

The SSIP goals, LOS, and program and Phase 1 strategies are consistent with the *Strategic Sustainability Plan*. The proposed project, which is one of the key projects identified in Phase 1 of

22 SFPUC, *Strategic Sustainability Plan,* March 2011. Available at: http://sfwater.org/modules/showdocument.aspx?documentid=987.

the SSIP, would result in an improved headworks facility and would be constructed to accommodate expected sea level rise in 2100. As a result, the project would not obviously or substantially conflict with any plan provisions.

C.2.2. SFPUC Directive for Sustainable Infrastructure Design for Above Ground, Occupied Buildings

In 2008, the CCSF established green building requirements for new residential and commercial buildings as well as for renovations to existing buildings. Chapter 13C of the San Francisco Building Code—the "Green Building Ordinance"—combines the 2010 California Green Building Standards Code (California Code of Regulations, Title 24, Part 11) with local requirements. This ordinance was adopted on December 31, 2013.

The SFPUC's Wastewater Enterprise Capital Projects Director issued a directive on May 27, 2015 stating that the Green Building Code and California Building Code do not apply to non-occupied wastewater treatment buildings, such as the new buildings and rehabilitations under the SSIP, because these codes are based on occupancy definitions.[23] This directive is applicable to the proposed project, as the new Headworks Facility is a non-occupied/process treatment building for which the SFPUC would not seek Leadership in Energy and Environmental Design (LEED) certification or compliance.

C.3. OTHER PLANS

The Port of San Francisco owns the proposed off-site staging areas at the Pier 94 Backlands, Pier 94, and Pier 96. As such, the Port's *Waterfront Land Use Plan* governs activities at these sites.

The *Waterfront Land Use Plan*,[24] which was initially adopted by the Port Commission in 1997, defines acceptable uses and policies and provides land use information applicable to properties under the Port Commission's jurisdiction. The proposed off-site staging areas are designated as a "Waterfront Mixed Use Opportunity Area," and the plan identifies portions of these areas as either "Existing Maritime Areas" or "Maritime Expansion Areas." The plan contains policies encouraging interim uses as a means of generating revenue and reserving maritime properties that are not currently in demand. In its "General Policies for Areas South of China Basin Channel," where the proposed off-site staging areas are located, the plan allows interim uses generally for periods of 1 to 10 years and requires compliance with all existing environmental regulations (e.g., restrictions on noise, emissions, and transportation congestion). The activities proposed within the staging areas (office trailers, equipment and materials storage, and parking for construction worker vehicles) would be temporary and therefore would not appear to conflict with *Waterfront Land Use Plan* policies. Project compliance with existing environmental regulations is addressed in Section E of this Initial Study.

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23 Kubick, Karen, Wastewater Enterprise Capital Projects Director. Directive regarding Sustainable Infrastructure Design for Above Ground, Occupied Buildings. May 27, 2015.

24 Port of San Francisco, *Waterfront Land Use Plan 1997,* Revised version October 2009. Available at: http://www.sfport.com/index.aspx?page=199.

C.4. REGIONAL PLANS AND POLICIES

The principal regional planning agencies and their planning documents for the nine-county Bay Area are: the Association of Bay Area Governments and Metropolitan Transportation Commission's *Plan Bay Area Jobs-Housing Connection Strategy,*[25] the Bay Area Air Quality Management District's *Bay Area 2010 Clean Air Plan,*[26] the San Francisco Regional Water Quality Control Board's *San Francisco Basin Plan,*[27] and the San Francisco Bay Conservation and Development Commission's (BCDC) *San Francisco Bay Plan.*[28] Because the project and proposed off-site staging areas are not within BCDC's jurisdiction, the *San Francisco Bay Plan* is not applicable. The proposed project would include appropriate transportation, energy, and sustainability measures to reduce automobile trips, energy usage, and associated emissions and would not disrupt or hinder implementation of control measures identified in the *2010 Clean Air Plan*. Furthermore, the SFPUC would implement mitigation measures that would reduce pollutant emissions generated by construction and operations of the project. Therefore, the proposed project would not appear to conflict with the *2010 Clean Air Plan*.

The *San Francisco Basin Plan* designates beneficial uses and water supply objectives for waters of the State, including surface waters and groundwater. It also includes implementation programs to achieve water quality objectives. As described further in Section E.15, Hydrology and Water Quality, of this Initial Study, the proposed project would not result in substantial water quality effects; thus, the project would not appear to conflict with the *San Francisco Basin Plan.*

Following construction, the new Headworks Facility operations would have the same function as existing operations. The project would not result in an increase in population or permanent employment demand. Therefore, the proposed project would not appear to conflict with the *Plan Bay Area Jobs-Housing Connection Strategy*.

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25 ABAG/MTC, *Plan Bay Area: Regional Transportation Plan and Sustainable Communities Strategy for the San Francisco Bay Area*, 2013-2040, Adopted July 18, 2013. Available at: http://files.mtc.ca.gov/pdf/Plan_Bay_Area_FINAL/Plan_Bay_Area.pdf.

26 BAAQMD, *Clean Air Plan*, 2010. Available at: http://www.baaqmd.gov/plans-and-climate/air-quality-plans/current-plans.

27 RWQCB, *Water Quality Control Plan for the San Francisco Bay Basin*, Approved March 20, 2015. Available at: http://www.waterboards.ca.gov/sanfranciscobay/basin_planning.shtml.

28 BCDC, *San Francisco Bay Plan*, 1969 (with periodic amendments). Available at: http://www.bcdc.ca.gov/laws_plans/plans/sfbay_plan.shtml.

D. SUMMARY OF ENVIRONMENTAL EFFECTS

This Initial Study evaluates the proposed project and discusses potential effects on the environment with respect to the topics listed below. The impact analysis indicates that the project could result in significant effects related to the environmental topics checked below. Project impacts would not be significant for the remaining issue areas. The following subsections present detailed CEQA checklists and impact evaluations for each environmental topic.

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

The impact evaluation considers the project impacts both individually as well as cumulatively. The Initial Study checklists presented in this section correlate to the CEQA significance criteria used to evaluate the project impacts for each environmental topic. For the significance criteria checked "Less than Significant with Mitigation Incorporated," "Less than Significant Impact," "No Impact," or "Not Applicable," the impact analysis determined that the project would not have a significant adverse impact with respect to that environmental issue. A full discussion is presented for criteria checked "Less than Significant with Mitigation Incorporated" and "Less than Significant Impact," and a brief discussion is included for criteria checked "No Impact" or "Not Applicable." The impacts corresponding to the topics checked in Section D, above, would be Less than Significant with Mitigation Incorporated. The impact analyses are presented in Sections E.1 through E.18, below.

Impacts are numbered throughout this Initial Study using an environmental topic identifier (e.g., "CR" for cultural resources) followed by sequentially numbered impacts. Mitigation measures are numbered to correspond to the associated impacts; for example, Mitigation Measure M-CR-1 addresses Impact CR-1. Cumulative impacts are discussed at the end of the impact analysis for each environmental topic and are identified by the letter C; for example, Impact C-CR addresses cumulative impacts on cultural resources.

D.1. PUBLIC RESOURCES CODE SECTION 21099

CEQA Section 21099(b)(1) requires that the California Office of Planning and Research (OPR) develop revisions to the CEQA Guidelines establishing criteria for determining the significance of transportation impacts for projects that "promote the reduction of greenhouse gas emissions, the

development of multimodal transportation networks, and a diversity of land uses." CEQA Section 21099(b)(2) states that, upon certification of the revised guidelines for determining transportation impacts pursuant to Section 21099(b)(1), automobile delay—as described solely by level of service or similar measures of vehicular capacity or traffic congestion—shall not be considered a significant impact on the environment under CEQA.

In January 2016, OPR published for public review and comment the *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA* recommending that transportation impacts for projects be measured using a vehicle miles traveled (VMT) metric. On March 3, 2016, in anticipation of the future certification of the revised CEQA Guidelines, the San Francisco Planning Commission adopted OPR's recommendation to use the VMT metric instead of automobile delay to evaluate the transportation impacts of projects (Resolution 19579). (Note: the VMT metric does not apply to the analysis of impacts on non-automobile modes of travel such as riding transit, walking, and bicycling.) Accordingly, this Initial Study does not contain a discussion of automobile delay impacts but rather uses VMT to evaluate transportation-related effects.

OPR's proposed transportation impact guidelines provide screening criteria for identifying land use project types, characteristics, or locations that would avoid exceedances of these VMT thresholds of significance. OPR recommends that if a project or land use proposed as part of the project meets the below-described screening criterion, then VMT impacts are presumed to be less than significant for that land use and a detailed VMT analysis is not required. This screening criterion and how it is applied under the jurisdiction of the CCSF is described below.

Small Projects. According to OPR, lead agencies may generally assume that a project would not have significant VMT impacts if the project would either: (1) generate fewer trips than the level for studying consistency with the applicable congestion management program, or (2) where the applicable congestion management program does not provide such a level, fewer than 100 vehicle trips per day. The Transportation Authority's Congestion Management Program, December 2015, does not include a trip threshold for studying consistency. Therefore, the Planning Department uses the screening criterion of 100 vehicle trips per day as the level at which most projects would not typically generate a substantial increase in VMT.

The subsection below discusses the screening criterion and threshold of significance used to determine whether public services and utilities would result in a substantial increase in VMT. The screening criterion and threshold of significance are consistent with CEQA Section 21099 and with the screening criteria recommended in OPR's proposed transportation impact guidelines.

Public Service Land Uses (e.g., police, fire stations, public utilities). These land uses do not typically generate a substantial increase in VMT but rather support other land uses (e.g., office and residential). Therefore, these land uses are presumed not to generate substantial increases in VMT. However, this presumption may not apply for projects that are not within 0.5 mile of a major transit stop and that would require the employees or visitors to travel from substantial distances. If the project does not meet this screening criterion, it would be considered to cause substantial additional VMT.

The nearest major transit stop to the proposed project is the T-Third light rail stop, which is approximately 1,000 feet (0.2 mile) to the east at the intersection of Third Street and Evans Avenue. Because the proposed project meets the screening criterion, VMT impacts are presumed to be less than significant; as such, a detailed VMT analysis is not required for the proposed project, and VMT impacts are not discussed in Section E.5, Transportation and Circulation.

D.2. Approach to Cumulative Impact Analysis

CEQA Guidelines, Section 15130(b)(1) provides two approaches to a cumulative impact analysis: (1) the analysis can be based on a list of past, present, and reasonably foreseeable probable future projects producing closely related impacts that could combine with those of the proposed project, and (2) a summary of projections contained in a general plan or related planning document can be used to determine cumulative impacts. The following factors were used to determine an appropriate list of individual projects to be considered in this cumulative analysis:

- **Similar Environmental Impacts**. A relevant project contributes to effects on resources that are also affected by the project. A relevant future project is defined as one that is "reasonably foreseeable," such as a project for which an application has been filed with the approving agency, or whose funding has been approved.

- **Geographic Scope and Location**. A relevant project is one in the geographic area where effects could combine. The geographic scope varies on a resource-by-resource basis. For example, the geographic scope for evaluating cumulative effects on air quality consists of the affected air basin.

- **Timing and Duration of Implementation**. Effects associated with activities for a relevant project (e.g., short-term construction or long-term operations) would likely coincide with the related effects of the project.

The proposed project, in combination with past, present, and reasonably foreseeable future projects in the vicinity of the proposed project, could result in cumulative impacts. **Table 7** lists these cumulative projects, which were identified based on the above-referenced factors. The locations of the cumulative projects are shown in **Figures 13 and 14.** Cumulative projects with construction schedules that could overlap with construction of the proposed project are shown in bold. There are 13 cumulative projects that propose construction at the SEP. Other projects in the vicinity, including other SFPUC projects, are labeled 14 through 35. Potential cumulative impacts are addressed under each of the environmental topics.

TABLE 7: PAST, PRESENT, AND REASONABLY FORESEEABLE FUTURE CUMULATIVE PROJECTS

Project No.	Project Name (Jurisdiction)	Project Description[1]	Construction Dates (Bold Indicates Overlap with Proposed Project)
1	**Biosolids Digester Facilities Project (SFPUC)**	**Replacement and relocation of the solids treatment facilities with more efficient, modern technologies and facilities designed to produce Class A biosolids. New construction would total approximately 200,000 square feet and demolition of approximately 110,000 square feet of existing structures. New structures would be a maximum of up to 65 feet in height.**	**February 2018 through January 2023**
2	SEP Chemical System Relocation and Facilities Upgrade (SFPUC)	New sodium hypochlorite chemical feed station adjacent to Building 042 to replace the existing feed station located at Building 511. Structural and mechanical repairs as well as upgrades to the odor control systems will also be made in various buildings. In addition, the SFPUC will install a new 200kW emergency generator.	March 2014 through June 2016
3	SEP Existing Digester Roof Repairs (SFPUC)[2]	Repair/replace the roofs on five existing digesters and associated appurtenances to maintain sufficient capacity reliability to produce Class B biosolids until new facilities constructed under the proposed SEP Biosolids Digesters Facilities Project (Project No.1) are online.	April 2013 through December 2015
4	**SEP Existing Digester Gas Handling Improvements (SFPUC)**	**Construct improvements to digester gas handling facilities until new facilities under SEP Biosolids Digesters Facilities Project (Project No. 1) are online. Staging could occur at 2 Rankin Street property.**	**May 2016 through March 2018**
5	**SEP Building 521 Replacement/ 522 Disinfection Upgrade (SFPUC)**	**Move the functions of Building 521 to a new building (Building 522), interior modifications to Building 521, and internal modifications of the chlorine contact channel (SEP 530). New W3[29] water pumps (not enclosed) will be constructed adjacent to the new building. Approximately five trees would be removed to address damage to the existing chlorine contact channels.**	**April 2016 through July 2018**
6	**SEP Power Feed and Primary Switchgear Upgrades (SFPUC)**	**Upgrade the existing SEP electrical infrastructure to provide redundant primary power feeds to SEP and to accommodate present and future SEP electric loads. Includes construction of new primary switch gear station, replacement/upgrading of the existing unit substations, and installation of an Energy Monitoring and Management System.**	**November 2017 through January 2020**
7	**SEP Primary/ Secondary Clarifier Upgrades (SFPUC)**	**Replace and retrofit mechanical, structural, and electrical components related to the primary and secondary clarifiers. Includes ventilation systems at SEP 042, replacement of secondary clarifier mechanisms at SEP 230, associated secondary clarifier electrical upgrades at SEP 260, and W3 system improvements.**	**March 2016 through March 2018**

29 W3 is disinfected secondary effluent and is the primary water supply for the headworks process.

Project No.	Project Name (Jurisdiction)	Project Description[1]	Construction Dates (Bold Indicates Overlap with Proposed Project)
8	**SEP Seismic Reliability and Condition Assessment Improvements (SFPUC)**	**Rehabilitation (such as concrete spalling and crack repair) and seismic retrofit of process tanks and buildings conducted in three phases for: retrofit and rehabilitation of the channel under the Post-chlorination building and SEP 530 channel, retrofit Inlet Channel Structure to SEP 040/041, and retrofit of up to 15 structures located at Southeast Plant.**	**May 2016 to August 2019**
9	SEP Northside Reliability Project (SFPUC)	Implement multiple phases of improvements to increase the reliability of the SEP. Phase 1 addressed corrosion and ventilation issues at Building 040/041. Phase 2 addressed the return activated sludge pumps and motors and associated variable frequency drives as well as aging secondary treatment electrical and mechanical equipment at Building 260.	All major work was completed as of July 2012 and minor work completed in October 2015
10	**SEP Oxygen Generation Plant Replacement (SFPUC)**	**Install new equipment next to the existing building (new facilities are called SEP 275), demolish existing facility (SEP 270) and install new liquid oxygen storage tanks and vaporizers.**	**January 2013 through February 2018**
11	**SEP Repair and Replacement Projects (SFPUC)**	**Ongoing repair and maintenance activities, including replacement of equipment at the end of its useful life, to maintain operational reliability of existing facilities at the SEP. Known R&R activities in 2016 and 2017 include upgrades to the SEP fire and evacuation alarm systems, HVAC and mechanical system improvements, handrail/guardrail replacement, and other parts replacements in existing facilities.**	**Ongoing**
12	Demolition of the Existing SEP Digesters and Southside Renovation Project (SFPUC)	Phase II SSIP project that includes demolition of the existing SEP digesters and improvements within the south side of the SEP. This project has not yet begun the planning phase and the SFPUC has not yet determined the specific improvements to be constructed. The schedule is not available at this time, but the project will not be implemented until the new digesters constructed under the Biosolids Digester Facilities Project (Project No. 1) are operational and have been tested to ensure that they are working as designed.	After 2025, schedule to be determined
13	Eastside Recycled Water Project (SFPUC)	Project will deliver high quality recycled water to a variety of customers on the east side of the CCSF for non-drinking uses such as irrigation and toilet flushing. On hold to allow for better coordination with the Sewer System Improvement Program. In the future, major construction is anticipated at the SEP, a potential site and water source for the recycled water facility.	2026 through 2029
14	**Central Bayside System Improvement Project (SFPUC)[3]**	**Construct improvements to address long-term infrastructure needs in the Central Bayside basin. Includes constructing a new Channel Tunnel Dewatering Pump Station, constructing the Channel Tunnel to from the Channel Pump Station to the SEP. Channel Pump Station will be repurposed, Channel Force Main will be rehabilitated, and BFS will be modified. Includes two new connector tunnels: the Inner Mission Connector Tunnel and the Mariposa Connector Tunnel. Green infrastructure will be constructed.**	**Construction date uncertain, no sooner than early 2019**

Project No.	Project Name (Jurisdiction)	Project Description[1]	Construction Dates (Bold Indicates Overlap with Proposed Project)
15	Central Shops Relocation and Land Reuse - 1800 Jerrold Avenue (SFPUC and GSA)	GSA will acquire new sites for Central Shops at: 450 Toland Street, 1975 Galvez Avenue and 555 Selby Street (between Galvez and Innes), demolish or refurbish existing buildings, and construct new buildings to house the new Central Shops facilities. SFPUC will acquire the existing 6.04-acre Central Shops site at 1800 Jerrold Avenue adjacent to the SEP. The central shop functions (vehicle repair) will be relocated to the new facility. Existing structures at 1800 Jerrold Avenue will be reused for the support of the SEP's short- and long-term needs. Any demolition, soil excavation or cleanup of hazardous materials will be conducted in the future under separate environmental review.	January 2016 through January 2017
16	Land Reuse - 1801 Jerrold Avenue (SFPUC and SFPW)	SFPUC will acquire a 1.54 -acre site near the SEP that is currently under the jurisdiction of the Department of Public Works. Existing above ground facilities will be demolished and adjacent one block segment of Quint Street will be acquired and closed to public access. The site will support the SEP's short and long-term needs.	Spring 2016 through Fall 2016
17	**Kansas and Marin Streets Sewer Improvements (SFPUC)**	**Construct a new transport and storage box to improve the sewer system conveyance from the Islais Creek Watershed east of U.S. 101 to the Islais Creek transport and storage box. Acquisition of new right-of-way will be required.**	**November 2017 through October 2018**
18	Griffith Yard Improvements (SFPUC)	SFPUC property next to the Griffith Pump Station at 1601 Griffith Street will be used for installation of 2 vactor waste stations.[30] Includes installation of a wall around the site, paving, and installation of trailers.	September 2016 to February 2017
19	**Southeast Outfall Underwater Crossing Replacement (SFPUC)**	**Replace two existing ductile iron underwater crossing pipes beneath Islais Creek.**	**April 2017 through March 2018**
20	Southeast Community Facility Revitalization (SFPUC)	This project consists of rehabilitating the Southeast Community Facility (1800 Oakdale Avenue) and Greenhouses in place or relocating the center to new building such as at SFPUC property at 1550 Evans Avenue.	Not yet determined; planning has begun with outreach to the public.
21	Jerrold Bridge North Span Replacement (Caltrain)[4]	Replace northern approach span to the Jerrold Avenue Bridge and install new worker walkway. Improvements include replacing four pre-cast concrete north span segments with an earthen berm, supporting existing vertical concrete support structures with micropiles; and installing a new walkway at track-level to meet FRA requirements.	Completed in 2011
22	Quint Street Bridge Replacement Project (Caltrain)[5]	Remove existing Quint Street bridge and construct a new 325-foot-long by 80-foot-wide seismically safe berm in its place. The berm crosses Quint Street, making it a dead end near the SEP. Quint Street was permanently closed to through traffic in October 2015. Some night and weekend work will be required during construction. In future, a new Caltrain Station may be built atop the berm at Oakdale Avenue.	October 2015 through mid- 2016

[30] A vactor waste station allows pumping of wastes from the sewer system via vacuum trucks.

Project No.	Project Name (Jurisdiction)	Project Description[1]	Construction Dates (Bold Indicates Overlap with Proposed Project)
23	Quint-Jerrold Connector Road (San Francisco County Transportation Authority)[6]	Construct new 950-foot-long roadway to provide access between existing Quint Street and Jerrold Avenue, including a sidewalk, depending on location, curb cut, street trees, and street lighting. Install new stop sign at intersection of the new roadway and Jerrold Avenue. Install new sewer and water pipelines to provide on-site drainage and overall system reliability.	Late 2016 to 2017 (dependent on land acquisition)
24	San Francisco Wholesale Produce Market Expansion (City and County of San Francisco Market Corporation)[7]	Phased development to expand the existing San Francisco Wholesale Produce Market. The maximum development scenario will demolish 12 of the existing 13 buildings, construct five new warehouse buildings, a meeting hall/education center and demonstration kitchen, 440 parking spaces, 186 loading spaces, and a total building floor area of 525,855 square feet. (San Francisco Planning Department 2011). Jerrold Avenue will be reconfigured to direct through traffic around the site onto Innes and Kirkwood Avenues. All roadway improvements will be constructed under Phase 1.	Uncertain, development decisions will be market driven
25	1995 Evans Avenue (SF Police Department)[8]	Demolish the existing four vacant buildings and construct a new four-story 128,000-square-foot building with a separate two-level 47,000-square-foot parking garage to house the San Francisco Police Department's Forensic Services Division and Traffic Company. The Traffic Company includes a fleet of motorcycle police officers.	2018 through 2020
26	Candlestick Point-Hunters Point Shipyard Phase I and II Development Project (Lennar Urban)[9]	Redevelop the 702-acre Candlestick Point-Hunters Point Shipyard area with mixed-uses: residential, retail, office, research and development, civic and community uses, and parks and recreational open space. A 300-slip marina and shoreline improvements will be constructed as will shoreline improvements to stabilize the shoreline (City and County of San Francisco, 2015). Phase I is already underway, including demolition of Candlestick Park Stadium. Phase II includes 6,225 units of housing, including rebuilding Alice Griffith Public Housing, a regional retail center, a 220-room hotel, performance venue, and 160 acres of new and revitalized open space.	Phased construction over the next 15 to 20 years.
27	Event Center and Mixed-Use Development at Mission Bay Blocks 29-32 (Golden State Warriors)[10]	Construct a multi-purpose event center and a variety of mixed uses, including office, retail, open space and structured parking on an approximately 11-acre site on Blocks 29-32 within the Mission Bay South Redevelopment Plan. The event center will be programmed with a maximum capacity of 18,500. Two office and retail buildings will be located on the west side of the project site, retail uses will front on South Street and Terry A. Francois Boulevard, and approximately 3.2 acres of open space will be provided within the site.	Late 2016 through early 2019
28	Pier 70 Waterfront Site (Forest City Development CA)[11]	Redevelopment of approximately twenty-eight acres (identified as the "Waterfront Site") of the former industrial shipyard at Pier 70. The site will be developed into a new mixed-use community with new commercial office, new residential development as well as a retail and arts component. New above-grade and below-grade parking and approximately eight acres of new and expanded parks and shoreline access will be constructed. The project also includes the rehabilitation	2018 through 2029

Project No.	Project Name (Jurisdiction)	Project Description[1]	Construction Dates (Bold Indicates Overlap with Proposed Project)
		and adaptive reuse of Buildings 2, 12 and 21, which contribute to the eligible Pier 70 National Register Historic District. Overall, the proposed project will construct a maximum of 3.5 million gross square feet in four phases over about 11 years.	
29	Blue Greenway Project and Heron's Head Park Improvements (Port of San Francisco)[12,13]	The Blue Greenway is the City of San Francisco's project to improve the City's southerly portion of the 500-mile, 9-county, region-wide Bay Trail, as well as the newly established Bay Area Water Trail and associated waterfront open space system. The alignment of the Blue Greenway generally follows the alignment of the Bay Trail and Bay Area Water Trail from Mission Creek on the north to the County line on the south (Port of San Francisco, 2015b). The project includes open space improvements at numerous points along the trail, including Heron's Head Park.	Undetermined
30	Pier 90-94 Backlands Improvements Project (Port of San Francisco)[14]	Improve 23 acres of unimproved land previously used as a landfill. Proposed uses for the site include construction lay down, marshalling of trucks associated with events at the Moscone Center, auto storage, self-storage, construction material recycling, and eco-industrial uses such as batching operations and biofuel production. Construction of new road, utilities, and stormwater management facilities will be conducted to prepare the site for future uses. The 23-acre site is currently used for construction materials recycling.	Undetermined – still in planning stages
31	Asphalt and Concrete Recycling and Production Plant at Pier 94 (Port of San Francisco and Department of Public Works)[15]	The CCSF is in the process of selecting an entity to build and operate an asphalt and concrete recycling and production facility within approximately 204,688 square feet of land, located at Pier 94/ Seawall Lot 352.	Undetermined – still in planning stages
32	Quint Street Lead Track (Port of San Francisco and Federal Railroad Administration)[16]	Reconstruction of the rail track between Jerrold Avenue and Third Street to upgrade it from an industrial lead to a Federal Railroad Administration Class I track along with construction of associated improvements. This will improve the safety and efficiency of freight rail service to the Port at Piers 80, 90, 92, 94, and 96. Rankin Street will be closed as part of this project.	Summer 2016 through Early 2017
33	Pier 96 Bulk Export Terminal (Port of San Francisco) [17]	Construct a new terminal to facilitate the export of bulk cargo on approximately 30 acres at Pier 96, including 900 linear feet of deep-water berth space at Pier 96. The project will provide on-dock rail access.	Undetermined – in planning stages.
34	Peninsula Corridor Electrification Project (Caltrain Peninsula Corridor Joint Powers Board)[18]	**This project consists of converting Caltrain from diesel-hauled to electric multiple unit (EMU) trains for service between the 4th and King Street Station in San Francisco and the Tamien Station in San Jose. The project would require the installation of 130 to 140 single-track miles of overhead contact system (OCS) for the distribution of electrical power to new electric rolling stock. In the vicinity of the SEP, the project would include construction of vertical steel poles on either side of the Caltrain tracks from which conductors would be suspended. The electrical infrastructure provided by this project would be compatible with future high-speed rail service.**	**As early as 2017 and lasting 3 to 4 years**

Project No.	Project Name (Jurisdiction)	Project Description[1]	Construction Dates (Bold Indicates Overlap with Proposed Project)
35	**Griffith Pump Station Project (SFPUC)[19]**	**The project consists of replacing/upgrading the electrical, mechanical, and structural systems of Griffith Pump Station, an all-weather facility that serves as the primary sewage and stormwater pumping station in Southeast San Francisco. The project would extend the life of the existing facility as well as modernize it to increase the station's reliability and operational flexibility. The majority of the work would occur inside the station (e.g., replacement of pumps, piping, bar screens, water-tight doors; modification of the HVAC system; installation of roof-access ladder; replacement of the lighting with LED). Proposed outdoor work would include the installation of canopies over the chemical storage and transformer areas to protect equipment, and exterior lighting in the chemical storage area and storage yard to aid operations. No soil disturbance would be required as part of this project. The pump station would not increase in capacity.**	**2017 - 2018**
36	2225 Jerrold Avenue Facility (Academy of Art University)[20]	The Academy of Art University (AAU) is seeking approval of modifications to six different buildings that house university activities. One of the facilities is located near the SEP: an existing 91,367-square-foot building at 2225 Jerrold Avenue that houses office space, storage and janitorial functions, which would be modified to allow recreational use. Construction would include laying down flooring for athletic courts, renovation of bathrooms, creation of locker room facilities, and painting of the building and interior spaces. Internal utility upgrades, including electrical and plumbing, would be required but structural improvements are not anticipated at this time. ADA accessibility would require improvements to pedestrian access points, bathroom facilities, and locker rooms. Because institutional and recreational uses are not permitted in the zoning district, a legislated text change to the Planning Code would be required to allow AAU's uses as either a permitted or conditional use.	No external construction required. Dates for internal construction not established.
37	**Marin Street Sewer Replacement Project (SFPUC)[21]**	**This project would replace about 1,800 feet of the existing 24-inch Marin Street sewer line from Third Street., westward to the Marin Outfall at Islais Creek. The sewer line is concrete-encased vitrified pipe and was constructed in 1954; it is part of the City's combined sewer system. The new pipeline would be constructed of reinforced concrete pipe and the diameter would be increased to 30-inches to accommodate development to the north of Islais Creek. The new pipeline would follow the same alignment as the existing pipeline and up to eight support pilings could be replaced to a depth of 60 feet. A portion of the pipeline alignment adjacent to Islais Creek is within the jurisdiction of the Bay Conservation and Development Commission. Construction would require temporary easements between Tennessee and Third Streets, within the SFMTA yard, and between the southwest edge of the yard and the Marin Street Outfall. Construction access would be provided via Cesar Chavez Street.**	**March 2017 to February 2018**
38	**Southeast Greenhouse Demolition (SFPUC)[22]**	**This project would demolish the 113,400 gross square foot greenhouse and the 22,280 gross square foot administrative building and exhibit gallery located on the Southeast Greenhouse site to the south of the SEP. These buildings were constructed in 1986 and are not historic structures. The demolition debris would be off-hauled and recycled or disposed of in accordance with applicable solid**	**Spring 2017**

Project No.	Project Name (Jurisdiction)	Project Description[1]	Construction Dates (Bold Indicates Overlap with Proposed Project)
		waste regulations. There would be no grading, excavation, or other ground disturbance at the site as part of the demolition activities.	

Sources:

[1] Project descriptions without noted sources were prepared by the SFPUC.

[2] San Francisco Public Utilities Commission, email from Sue Chau to Jill Hamilton and others, re: Biosolids Digester Facilities Project – Schedule Change, OCR, Existing Conditions Photos, Cumulative Projects, etc., December 17, 2015.

[3] San Francisco Public Utilities Commission, Central Bayside System Improvement Project Description Information, provided to ESA+Orion on December 22, 2015.

[4] San Francisco County Transportation Authority (SFCTA), *My Streets Project Map*. Available online at http://www.sfcta.org/mystreetsf-projects-map#/?address=750%20phelps%20street%20San%2BFrancisco&radius=805. Accessed on September 21, 2015.

[5] Caltrain, *Quint Street Project*. Available online at http://www.caltrain.com/projectsplans/Projects/Caltrain_Capital_Program/Quint_Street_Project.html. Accessed on September 21, 2015.

[6] San Francisco Planning Department, *Preliminary Mitigated Negative Declaration, Quint-Jerrold Connector Road Project*. Case No. 2013.0858E, August 5, 2015.

[7] San Francisco Planning Department, *Final Mitigated Negative Declaration, San Francisco Wholesale Produce Market Project*. Case No. 2009-1153E, May 11, 2011, as amended July 5, 2011.

[8] San Francisco Planning Department, *Final Mitigated Negative Declaration, 1995 Evans Avenue/ San Francisco Police Department (SFPD) Forensic Service Division (FSD) & Traffic Company (TC)*, Case No. 2013.0342E, October 2, 2013, amended on November 15, 2013.

[9] City and County of San Francisco, *Office of Community Investment and Infrastructure, Candlestick Point–Hunters Point Shipyard Stadium Demolition*. Available online at http://sfocii.org/index.aspx?page=446. Accessed on September 21, 2015.

[10] Office of Community Investment and Infrastructure, *Subsequent Environmental Impact Report, Event Center and Mixed-Use Development at Mission Bay Blocks 29 to 32*, State Clearinghouse No. 2014112045, November 3, 2015.

[11] San Francisco Planning Department, *Notice of Preparation of an Environmental Impact Report and Notice of a Public Scoping Meeting, Pier 70 Mixed-Use District Project,* Case No. 2014-001272ENV, August 14, 2013.

[12] Port of San Francisco, *Bayview Gateway at Third Street and Cargo Way, Design Summary*, May 2012.

[13] Port of San Francisco, *Blue Greenway Project*. Available online at http://sfport.com/index.aspx?page=1433. Accessed on September 21, 2015.

[14] Port of San Francisco, *Pier 90-94 Backlands Planning*. Available online at http://sfport.com/index.aspx?page=222. Accessed on September 21, 2015.

[15] San Francisco Department of Public Works, *Bid listing for Sustainable Recycled Asphalt and Concretes Plants and Lease Opportunity*, DPW ID No. NPE15108. Available online at https://stgint.sfdpw.org/_Layouts/DPWPORTAL/Construction.aspx?ID=1539. Accessed on September 21, 2015.

[16] Port of San Francisco*, Federal Railroad Administration (FRA) Categorical Exclusion Worksheet*, September 25, 2013.

[17] Port of San Francisco, *Request authorization to advertise and issue a Request for Proposals (RFP) soliciting a developer and operator for a Bulk Export Maritime Terminal Operation at Pier 96*, March 5, 2015.

[18] Peninsula Corridor Joint Powers Board, *Peninsula Corridor Electrification Project Final Environmental Impact Report*, State Clearinghouse No. 2013012079, December 2014.

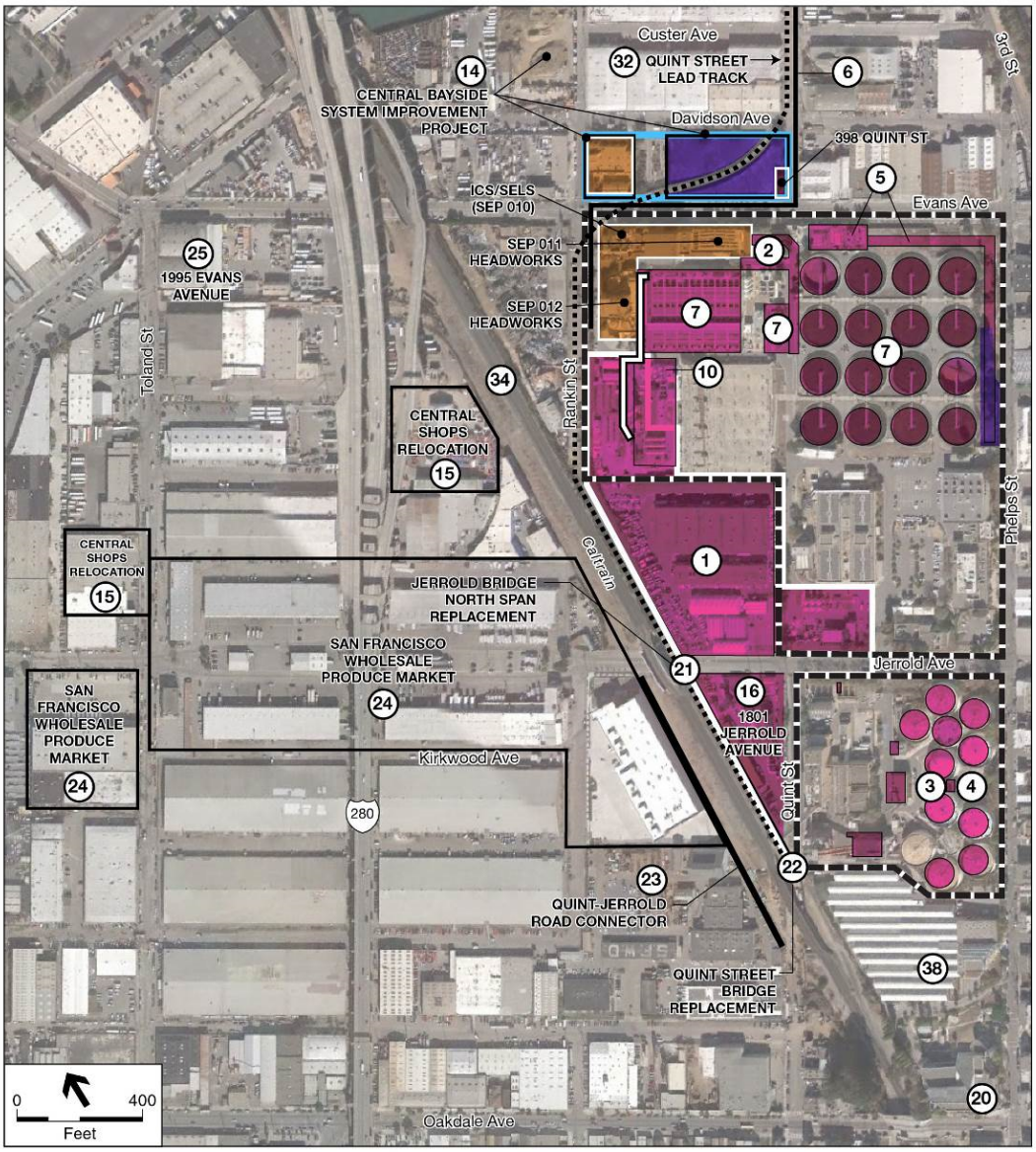
[19] San Francisco Public Utilities Commission, Email from Karen Frye to BDFP and Headworks Project Teams, September 9, 2016.

[20] San Francisco Planning Department, *Final Environmental Impact Report Academy of Art University Project,* Case No. 2008.0586E, July 30, 2016.

[21] San Francisco Planning Department, *CEQA Categorical Exemption Form, SFPUC Marin Street Replacement Project*. September 12, 2016.

[22] San Francisco Public Utilities Commission, Email from Sue Chau to BDFP and Headworks Project Teams, August 8, 2016.

Figure 13: Cumulative Projects at the SEP and Immediate Vicinity



CUMULATIVE PROJECTS

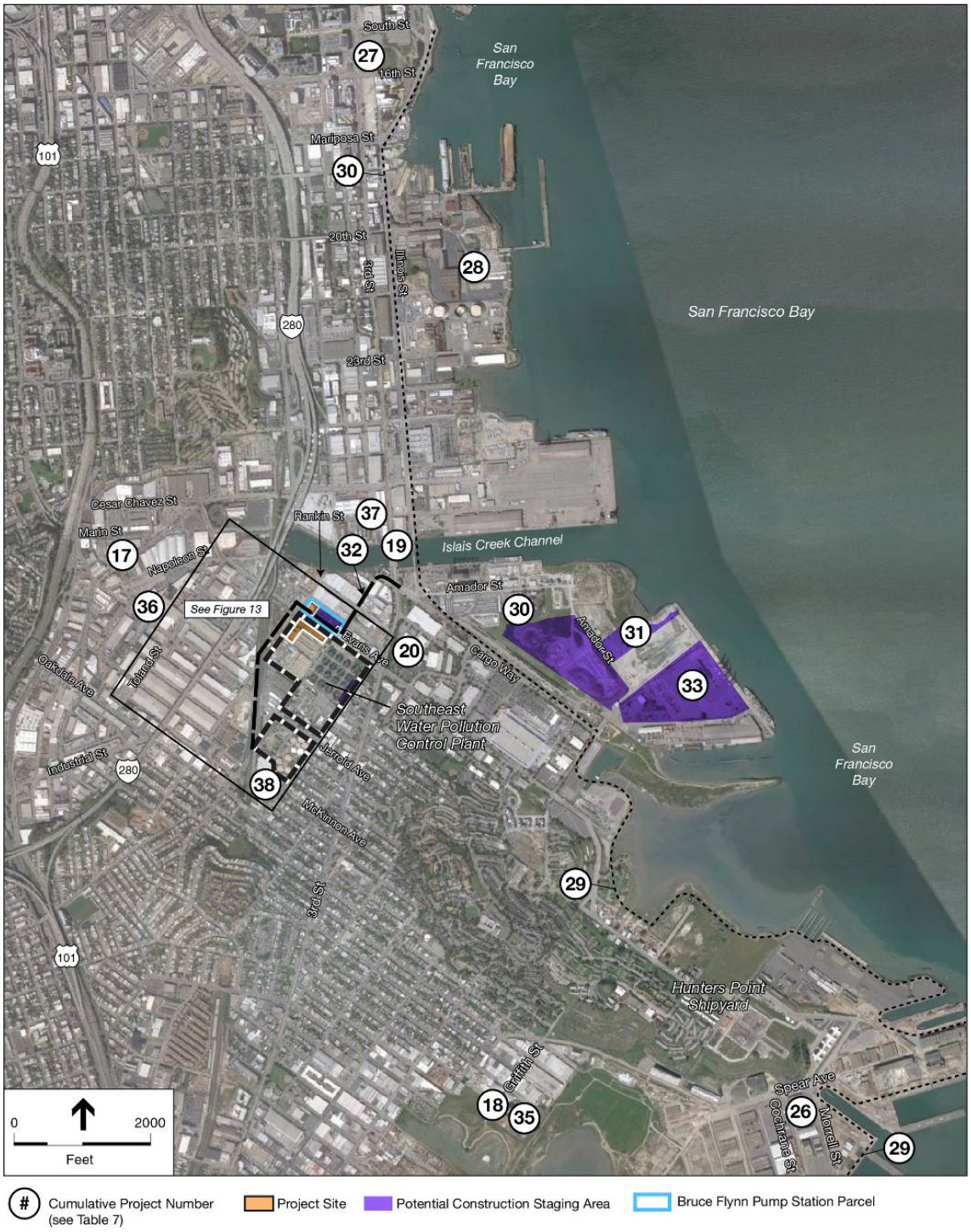
1 Biosolids Digester Facilities
2 SEP Chemical System Relocation and Facilities Upgrade
3 SEP Existing Digester Roof Repairs
4 SEP Existing Digester Gas Handling Improvements
5 SEP Building 521 Replacement/ 522 Disinfection Upgrade
6 SEP Power Feed and Primary Switchgear Upgrades
7 SEP Primary/Secondary Clarifier Upgrades
8 SEP Seismic Reliability and Condition Assessment Improvements*
9 SEP Northside Reliability Project*
10 SEP Oxygen Generation Plant Replacement
11 SEP Repair and Replacement Projects*
12 Demolition of the Existing SEP Digesters and Southside Renovation Project*
13 Eastside Recycled Water Project*
14 Central Bayside System Improvement Project
15 Central Shops Relocation and Land Reuse
16 Land Reuse - 1801 Jerrold Avenue
17 Kansas and Marin Streets Sewer Improvements
18 Griffith Yard Improvements
19 Southeast Outfall Underwater Crossing Replacement
20 Southeast Community Facility Revitalization
21 Jerrold Bridge North Span Replacement
22 Quint Street Bridge Replacement Project
23 Quint-Jerrold Connector Road
24 San Francisco Wholesale Produce Market Expansion
25 1995 Evans Avenue
26 Candlestick Point-Hunters Point Shipyard Phase I and II Development Project
27 Event Center and Mixed-Use Development at Mission Bay Blocks 29-32
28 Pier 70 Waterfront Site
29 Blue Greenway Project and Heron's Head Park Improvements
30 Pier 90-94 Backlands Improvements Project
31 Asphalt and Concrete Recycling and Production Plant at Pier 94
32 Quint Street Lead Track
33 Pier 96 Bulk Export Terminal
34 Peninsula Corridor Electrification Project
35 Griffith Pump Station Project
36 2225 Jerrold Avenue Facility
37 Marin Street Sewer Improvement
38 Southeast Greenhouse Demolition

Southeast Plant (SEP)
Project Site
Potential Construction Staging Area
Potentially Cumulative Projects at SEP
Bruce Flynn Pump Station Parcel
(#) Cumulative Project Number (see Table 7)

NOTE: A project with an asterisk (*) has not been mapped either because it occurs in several locations, because no specific location has been identified, or because the project has been completed.

Source: ESA, 2016, modified by RMC Water and Environment

Figure 14: Cumulative Projects in the Extended Vicinity



Source: ESA, 2016, modified by RMC Water and Environment

E. EVALUATION OF ENVIRONMENTAL EFFECTS

E.1. LAND USE AND PLANNING

Topics:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Not Applicable
1. LAND USE AND LAND USE PLANNING— Would the project:					
a) Physically divide an established community?	☐	☐	☒	☐	☐
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐	☐
c) Have a substantial impact upon the existing character of the vicinity?	☐	☐	☒	☐	☐

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

The proposed project would be implemented in the northwest portion of the SEP site at the existing locations of the SEP 010 Influent Control Structure/Southeast Lift Station, and the SEP 011 and SEP 012 headworks. The proposed project would also be implemented at the BFS, which is located north of the northwest portion of the SEP site, and at 398 Quint Street, which is located east of the BFS. The SEP and BFS are owned and operated by SFPUC. The SFPUC owns 398 Quint Street, which is currently unoccupied.

The division of an established community would typically involve the construction of a physical barrier to neighborhood access, such as a new freeway, or the removal of a means of access, such as a bridge or a roadway, which would not occur under the proposed project. The project proposes to improve the existing BFS, demolish the existing headworks, construct a new Headworks Facility, and demolish 398 Quint Street. Construction would take place within developed areas at the existing SEP, BFS, and 398 Quint Street properties.

During the 5-year construction period, the parking lane, one traffic lane, and the sidewalk on the south side of Evans Avenue between Rankin and Quint Streets would be closed. At least one traffic lane in each direction and the sidewalk on the north side of Evans Avenue between Rankin and Quint Streets would remain open at all times. Consequently, the construction and operation of the proposed project would not alter the established street grid or permanently close any streets, or impede pedestrians or other travel through the area.

There are no established communities at the BFS adjacent lot, Pier 94 Backlands, Pier 94, and Pier 96, and these parcels are not open for public use. Therefore, the proposed staging areas would not physically divide an established community or block access between adjacent uses.

The proposed project would not construct a physical barrier to neighborhood access or remove an existing means of access, such as a bridge or roadway which would create an impediment to the passage of persons or vehicles. For these reasons, the proposed project would not physically divide an established community, and impacts would be less than significant.

Impact LU-2: The proposed project would not conflict with applicable land use plans, policies, and regulations of agencies with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect. (Less than Significant)

Plans, policies, and regulations adopted for the purpose of avoiding or mitigating an environmental effect are those that directly address environmental issues and/or contain targets or standards that must be met in order to maintain or improve characteristics of the city's physical environment. Examples of such plans, policies, or regulations include BAAQMD's *2010 Clean Air Plan* and the San Francisco RWQCB's Basin Plan. Land use impacts would be considered significant if the project were to conflict with any such plan, policy, or regulation. As discussed in Section B, Compatibility with Existing Zoning and Plans, the proposed project would not obviously or substantially conflict with any plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. This impact would be less than significant.

Impact LU-3: The proposed project would not have a substantial impact upon the existing character of the vicinity. (Less than Significant)

Impacts on existing land use character in the project vicinity could result if the project were to cause a long-term change in land use that would be incompatible or conflict with established land uses. Construction of the proposed project would be visible from surrounding land uses and would temporarily alter the existing character and quality of the project area and vicinity. Specifically, the north side of the SEP, the BFS parcel (including 398 Quint Street), the Phelps Street staging area, and the Pier 94 Backlands, Pier 94, and Pier 96 staging areas would be temporarily modified due to the presence of construction equipment and material, trailers, stockpiles, and construction-related vehicles. As specified in the Project Description, Section B.4.7, following construction, the roadway and railroad rights-of-way on Evans Avenue would be repaired or restored to preconstruction conditions.

The project site is fully developed and industrial in nature. The proposed project would be implemented on lands zoned for heavy industrial uses and would not change the existing land uses at the site. The SEP and BFS sites would remain industrial in use and would continue to operate as wastewater treatment and pumping facilities, respectively. The project would not alter or introduce any land uses, such as residential uses, that would disrupt or be incompatible with the existing character of the vicinity. The BFS modifications would require internal improvements and modifications to sewer connections within the existing rights-of-way in surrounding streets. Demolition of 398 Quint Street would result in a vacant lot east of BFS, but this project component would not change the existing character of the project area because no new uses would be

introduced. The proposed new Headworks Facility would be located in the northwest portion of the SEP site. The new Headworks Facility, which would replace the SEP 010 Influent Control Structure/Southeast Lift Station, SEP 011, and SEP 012 structures, would be similar in height and would have the same functions as the structures it replaces. Thus, the new Headworks Facility would not alter the land use or character of the area, and the project's impact on the existing character of the project's vicinity would be less than significant.

Impact C-LU: The proposed project, in combination with past, present, and reasonably foreseeable future projects in the vicinity of the site, would not result in a cumulatively significant impact related to land use. (Less than Significant)

The geographic scope for potential cumulative land use impacts encompasses the SEP site, BFS parcel, Pier 94 Backlands, Pier 94 and 96, and immediate vicinities. Long-term cumulative impacts on the existing character of the project vicinity would occur if the proposed project, when considered together with the cumulative projects, would result in a change in land use that would divide an existing community, alter the land use character of the area, or cause a conflict with established land uses.

The cumulative projects at the SEP site include project numbers 1 through 13 in Table 7. Other projects in the immediate vicinity of the BFS parcel and off-site staging areas include project numbers 14 (Central Bayside System Improvement Project), 16 (1801 Jerrold Avenue), 22 (Quint Street Bridge Replacement), and 32 (Quint Street Lead Track). The cumulative projects consist of repairing, retrofitting, or replacing existing buildings and facilities. These projects would not divide an established community, change the use or character of the SEP, or introduce new uses, and therefore would not affect the character of the area. The cumulative projects would be required to comply with applicable land use plans, policies, and regulations. As described in Impact LU-1 through Impact LU-3, the proposed project would not divide an established community or result in a significant impact on the existing character of the project vicinity because it would have the same function as the structures it replaces and would not alter the existing use or character of the project area. Therefore, the proposed project, in combination with the cumulative projects, would not result in significant cumulative impacts related to land use.

E.2. AESTHETICS

Topics:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Not Applicable
2. AESTHETICS—Would the project:					
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and other features of the built or natural environment which contribute to a scenic public setting?	☐	☐	☒	☐	☐
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area or which would substantially impact other people or properties?	☐	☐	☒	☐	☐

Impact AE-1: The proposed project would not have a substantial adverse effect on a scenic vista. (No Impact)

A project would have a significant effect on scenic vistas if it would substantially degrade important public view corridors or obstruct scenic views that can be seen from public areas by a substantial number of people. A scenic vista is generally an expansive, publicly accessible view that is recognized and valued for its scenic quality. Scenic vistas are typically available from vista points, designated scenic highways, or from parks. There are no publicly accessible scenic vista points in the project vicinity. The Urban Design Element of the General Plan includes objectives and policies to protect major views in the city, with particular attention to those of open space and water.[31] For this analysis, views of San Francisco Bay are considered scenic vistas.

The proposed project site is east of Interstate 280 (I-280), an eligible but not officially designated Scenic Highway.[32] The top of the BFS and portions of the SEP are visible from I-280 looking towards the Bay and the East Bay hills; however, the view of the Bay is largely obstructed and dominated by other industrial uses (e.g., a metal yard). The new Headworks Facility would not result in substantial alteration of height at the SEP, and no changes to the exterior of BFS would occur. Thus, the proposed project would not be noticeable or indistinguishable from surrounding development and would not alter views from I-280 towards the Bay or the East Bay hills.

Heron's Head Park, located east of the Pier 94 Backlands and south of Pier 96, provides scenic views of San Francisco Bay to the east and south. However, views of the Bay looking north and

31 City and County of San Francisco, *San Francisco General Plan Urban Design Element*, as amended through 2010.

32 California Department of Transportation, *Map of Officially Designated Scenic Highways for the San Francisco County*. Available at http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/index.htm, accessed on April 1, 2016.

west from this park are already dominated and obstructed by industrial structures and stockpiled materials at the Pier 94 Backlands and Pier 96. The project's construction equipment and material, trailers, stockpiles, and construction-related vehicles at these proposed staging areas may be visible from Heron's Head Park during construction. However, this temporary use would be consistent with existing use at these sites and would not result in permanent changes. Scenic views of the Bay looking east and south from Heron's Head Park would remain unaffected by the project during construction and in the long term. The Pier 94 wetlands, west of Pier 94 provide scenic views of the San Francisco Bay to the north, which would also remain unaffected by the project.

For the reasons above, the project would not degrade or obstruct any scenic views of vistas that can be observed from a public area. Therefore, no impacts related to scenic vistas would occur.

Impact AE-2: The proposed project would not substantially damage any scenic resources, including, but not limited to, trees, rock outcroppings, and other features of the built or natural environment which contribute to a scenic public setting. (Less than Significant)

Scenic resources include trees, rock outcroppings, and other landscape features that contribute to the scenic character of a public area. The Urban Design Element of the General Plan contains objectives and policies to protect natural resources such as sand dunes, hills, cliffs, open spaces (including recreational resources), San Francisco Bay, and the Pacific Ocean, which contribute to the visual framework of the city.[33] Scenic resources, either natural or built, are visual features that positively contribute to the scenic quality of an area. Scenic resources have a distinctive and noticeably positive effect on a viewer's impression of a site or area.

There are no scenic resources in the vicinity of the SEP and BFS parcel. Existing scenic resources near the Pier 94 Backlands, Pier 94, and Pier 96 staging areas include the Pier 94 Wetlands, San Francisco Bay, the San Francisco Bay Trail, and Heron's Head Park. The Pier 94 Wetlands is a small salt marsh that provides wildlife habitat and wildlife viewing, located west of the Pier 94 staging area. Heron's Head Park is located at Cargo Way and Jennings Street, approximately 0.2 mile southeast of the Pier 96 staging area. The San Francisco Bay Trail connects to Heron's Head Park from the India Basin area to the south. The Bay Trail extends through Heron's Head Park, and a paved portion of the Bay Trail extends along Cargo Way from Heron's Head Park to Amador Street. This recreational trail and park provide a scenic public setting.

Construction activities and equipment at the off-site staging areas may be visible from the Bay Trail across from Jennings Street and Cargo Way. However, construction activities would be temporary and consistent with existing use at these sites, and would not permanently alter views from the Pier 94 Wetlands, the Bay Trail, or Heron's Head Park.

There are no designated landmark trees at the project site or at the off-site staging areas. The proposed project would require tree removal along Evans Avenue, adjacent to the SEP wall, and

33 San Francisco Planning Department, *San Francisco General Plan Urban Design Element*, 2010. Available at: http://www.sf-planning.org/ftp/General_Plan/I5_Urban_Design.htm, accessed on March 24, 2016.

tree removal for the construction trailer area adjacent to the sedimentation basins on Phelps Street. Tree removal impacts are addressed in Impact AE-3.

The proposed project would not permanently damage scenic resources. Therefore, impacts on scenic resources would be less than significant.

Impact AE-3: The proposed project would not substantially degrade the existing visual character or quality of the site and its surroundings. (Less than Significant)

The existing visual character of the SEP, BFS parcel and vicinity is that of industrial development with a wastewater treatment facility, light/heavy industrial uses, and commercial uses. The off-site staging areas are also located in areas that are largely industrial in character, and their use for construction staging would be similar to the existing visual character of the sites and their surroundings. The Pier 94 Backlands, Pier 94 and 96 staging areas are designated for port and heavy industrial uses and surrounded by industrial land uses.

In general, the visual quality of the SEP, BFS parcel, and off-site staging areas is low due to their industrial nature and lack of scenic resources. Residential uses are located approximately 1,550 feet southeast of the SEP, but residents would not have views of the project site. Construction of the proposed project would be visible from immediately adjacent roads and land uses, and would temporarily alter the existing visual character and quality of the SEP and BFS parcel.

Specifically, the visual character along the north and east sides of the SEP, at the BFS parcel, and at the off-site staging areas would be temporarily modified due to the presence of construction equipment and material, trailers, stockpiles, and construction-related vehicles.

The proposed project includes both improvements to existing structures (BFS) and the construction of new facilities. Improvements to the BFS would occur within the facility or below grade along adjacent streets. The BFS improvements would not change the exterior of the BFS and the adjacent streets would be restored following below-grade improvements. Therefore, there would be no change in the visual character of the BFS site following construction.

The new Headworks Facility would replace the existing headworks structures and would be located in the same area at the northwest end of the SEP. SEP 011 headworks is a rectangular, one- to four-story structure located adjacent to Evans Avenue. It is approximately 390 feet long, 98 feet wide, and 40 feet tall to the grit-handling level, and 58 feet tall at the eastern and western ends of the building.[34] SEP 012 is a one- to three-story structure located at the northwest side of the SEP adjacent to Rankin Street. It is approximately 170 feet long, 90 feet wide, and 25 feet tall to the first-floor roof. At the middle of the building is a three-story element that is approximately 85 feet long, 60 feet wide, and 60 feet tall to the top of the roof.[35] The SEP 010 Influent Control

34 SFPUC, *SEP Building Info*, Provided to RMC Water and Environment on July 20, 2016.
35 Ibid.

Structure/Southeast Lift Station is adjacent to SEP 011, approximately 35 feet tall, and about level with the lower elevation of SEP 011.

The new Headworks Facility's design would be largely dictated by the process design and equipment needs.[36] The new structure would be constructed primarily of reinforced, cast-in-place concrete, consistent with the existing visual character of the project area. The new Headworks Facility would be up to 65 feet tall and 400 feet long, with generally the same massing as the existing facility as described above, and would therefore not substantially alter the visual quality of the area. Visual quality improvements being considered for the proposed project could potentially include incorporating key architectural guidelines, consistent with the "campus" design approach articulated for the SEP, although these details are currently unknown at this time.[37]

There are no designated landmarks or significant trees within the project site (see Section E.13, Biological Resources, for the definition of landmark and significant trees). However, the existing trees along Evans Avenue and Phelps Street screen views towards the exterior of the SEP. The new Headworks Facility would extend to the northern boundary of the SEP site along Evans Avenue, which would require the removal of approximately 34 trees. An additional 48 trees would be removed along Phelps Street to clear an area for construction trailers. Removal of these trees during construction would be noticeable by pedestrians, bicyclists, and motorists along Evans Avenue and Phelps Street. The removal of trees would increase views to the SEP and would reduce the quality of short-range views from Evans Street.

Although construction activities would temporarily diminish the existing visual character of the project site, these activities would be limited in duration. The new Headworks Facility would not allow room for the replacement of trees along the Evans Avenue sidewalk. Instead, the SFPUC is considering the use of bulb-outs along Evans Avenue to allow the planting of new trees along the sidewalk.[38] The proposed design of the post-construction sidewalk and streetscape along Evans Avenue and Phelps Street has not been determined at this time. Nonetheless, the trees would be replaced in accordance with the CCSF's Urban Forestry Ordinance and specific locations of replacement trees would be determined during the design stage (see Section E.13, Biological Resources, for further discussion of this ordinance and tree removal). Therefore, the proposed project would not result in a substantial degradation of the existing visual character or quality of the site or its surroundings, and the impact would be less than significant.

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36 SFPUC, *Project Summary, Appendix J – Architectural Basis of Design*, November 2015.

37 Ibid. The proposed project is planned to follow the key design objectives of the Biosolids Digester Facility Project, also located at the SEP, which would establish a comprehensive architectural programming effort to achieve a unified campus architecture while responding to the particular needs of the facilities within the SEP.

38 SFPUC, *Conceptual Engineering Report Volume 2, Appendix J – Architectural Basis of Design*, January 2016.

Impact AE-4: The proposed project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area or which would substantially impact other people or properties. (Less than Significant)

Currently, the headworks facilities and BFS have exterior sources of lighting. Construction would typically occur between 7 a.m. and 8 p.m. Monday through Friday. Work would take place on holidays and 24 hours per day only if needed for critical facility connections. If nighttime construction work is required, exterior lighting to accommodate the work at the project site would be temporary and short-term in nature. Nighttime lighting would be confined to the project footprint and directed to the active construction area. There are no residences in the immediate vicinity of the SEP and BFS sites that could be affected by nighttime lighting. The closest residence is approximately 1,550 feet southeast from the project site. Nighttime lighting would not be visible from residences during construction due to the distance and intervening buildings.

There would be no substantial sources of light and glare associated with construction of the project that would adversely affect daytime views in the area. Because the proposed improvements at the BFS would not change the exterior, no new sources of light would be installed there. The new Headworks Facility would require lighting similar to the existing facility, but would not emit more light than is currently produced. As described in Section B.3.12 (Compliance with Lighting Requirements) of the Project Description, outdoor lighting would be provided for the new Headworks Facility. The lighting would be kept to a minimum level as deemed necessary for general safety. Compliance with the requirements of California Green Building Code Section 5.106.8, which specifies performance standards to reduce light pollution, and with the San Francisco Better Streets policy to minimize light trespass and glare to adjacent buildings, would ensure that changes in lighting would not result in substantial new sources of light or glare that affect nighttime views in the area or substantially impact other people or properties.

Windows and building surfaces with highly reflective surfaces can be a source of daytime glare. Daytime glare can create hazards for motorists and nuisances for pedestrians and other viewers. Windows near the exterior of the SEP boundary such as along Evans Avenue for the new Headworks Facility could be potential new sources of daytime glare. However, the project would be required to comply with Planning Commission Resolution 9212, which prohibits the use of mirrored or reflective glass. Given that the proposed project would comply with applicable policies and regulations, impacts related to day or nighttime light and glare would be less than significant.

Impact C-AE: The proposed project, in combination with past, present, or reasonably foreseeable projects in the vicinity of the project site, would not result in cumulatively significant impacts related to aesthetics. (Less than Significant)

The geographic scope for cumulative aesthetic impacts includes projects that would be located within the publicly accessible viewshed of the project; it extends about 2,000 feet in every direction from the SEP project-site and BFS parcel and extends eastward to include the Pier 94 Backlands, and Pier 94 and 96 areas. Projects that could have a cumulative aesthetic impact in combination with the proposed project include all the SFPUC projects at and in the vicinity of the SEP (project numbers 1 through 14 in Table 7), and the following non-SFPUC projects beyond the SEP, BFS parcel, and off-site staging area boundaries: 21 (Jerrold Bridge North Span Replacement), 22 (Quint

Street Bridge Replacement Project), 23 (Quint-Jerrold Connector Road), 24 (San Francisco Wholesale Produce Market Expansion), 25 (1995 Evans Avenue), 29 (Blue Greenway Project and Heron's Head Park Improvements), 30 (Pier 90-94 Backlands Improvements Project), 31 (Asphalt and Concrete Recycling and Production Plant at Pier 94, 32 (Quint Street Lead Track), and 33 (Pier 96 Bulk Export Terminal).

Due to the temporary and short-term nature of construction, the proposed project, in combination with the cumulative projects, would not have a significant cumulative impact on aesthetics during construction. Long-term visual impacts could occur if the proposed project, in combination with the cumulative projects would result in a substantial adverse effect on a scenic vista or substantially damage a scenic resource. There are no scenic vistas or scenic resources at or adjacent to the SEP and BFS, and thus no long-term cumulative impacts to scenic vistas or scenic resources would occur.

Cumulative impacts would occur if the proposed project, combined with cumulative projects were to substantially degrade the existing visual character of the site and its surroundings. However, this analysis presumes that, similar to the proposed project, the cumulative projects would be designed to conform to the applicable land use designations, urban design requirements, and Height and Bulk District requirements as outlined in the San Francisco Planning Code. This analysis also presumes that the identified cumulative projects, in the long term, can be expected to have a revitalizing effect given their nature, and may be perceived as improving the visual quality of the area (e.g., by replacing unused and/or deteriorating structures and providing amenities such as improvements to the Bay Trail in this area). Therefore, the proposed project, in combination with the cumulative projects, would not have a cumulatively significant impact on visual character and quality.

Cumulative impacts would occur if the proposed project, in combination with cumulative projects were to result in substantial sources of light and glare. The cumulative projects in the immediate vicinity of the new Headworks Facility could result in potentially significant cumulative long-term light and glare effects, depending on the type of building materials selected. However, of the cumulative projects proposed in the project vicinity, only the Biosolids Digester Facilities Project is expected to include substantial new structures. That project would be located south of the new Headworks Facility, and this analysis presumes that any light and glare associated with the Biosolids Digester Facilities Project would be focused on areas in the immediate vicinity of that project and that it would therefore not be expected to cumulatively affect nearby land uses that may be effected by light and glare from the new Headworks Facility. Similar to the proposed project, this analysis presumes that the cumulative projects would be required to comply with the requirements of California Green Building Code Section 5.106.8 and Planning Commission Resolution 2912, which specify standards to reduce light pollution and prohibits use of mirrored or reflective glass. Therefore, the proposed project, in combination with cumulative projects would not result in a cumulatively significant impact related to light and glare.

E.3. POPULATION AND HOUSING

Topics:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Not Applicable
3. POPULATION AND HOUSING— Would the project:					
a) Induce substantial 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 housing units or create demand for additional housing, necessitating the construction of replacement housing?	☐	☐	☐	☒	☐
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒	☐

Impact PH-1: The proposed project would not induce substantial population growth, either directly or indirectly. (Less than Significant)

The purpose of the proposed project is to construct a new Headworks Facility and an odor control structure and to modify the BFS to provide an efficient treatment system to improve screening and grit removal. The project would require up to 262 construction workers. The number of construction workers on site daily would vary depending on the specific construction activities being performed and overlap between construction phases. San Francisco and the five-county subregion of San Francisco, Alameda, Contra Costa, Marin and San Mateo Counties experienced persistently high unemployment in recent years. The construction sector was particularly affected by the 2007-2008 mortgage crisis and subsequent recession. Between 2007 and 2010, construction jobs in the five-county region declined by nearly 38,000 jobs, or about a third, over this period. However, the trend for the five counties as a whole began to reverse in 2011, with a net increase of about 520 construction jobs in the five-county region that year.[39] Construction job growth has continued, and between 2010 and 2015, more than 30,300 construction jobs were added in the five-county region.[40] Therefore, as of 2015, the net loss in construction employment in the five-county region since 2007 stands at about 7,700 jobs.

Given the existing population of unemployed construction workers, and because the project would be subject to the City and County of San Francisco's Local Hiring Policy for Construction (Chapter 6.22[g] of the San Francisco Administrative Code) for construction, nearly all project construction labor needs would readily be met by current residents of San Francisco and the rest of the five-county region. Therefore, the project would not result in any new significant construction-related impacts, or increase the severity of previously-identified construction impacts, associated with

39 San Francisco Office of Community Investment and Infrastructure, *Event Center and Mixed-Use Development at Mission Bay Blocks 29-32 Initial Study*, November 19, 2014.

40 California Employment Development Department, *Labor Market Information by County*, 2015.

population growth. As a result, the potential growth associated with construction workers would be less than significant.

In general, a project would be considered growth inducing if it would substantially increase population or new development that might not occur if the project were not implemented. The SEP and BFS parcel contain no housing; consequently, there is no on-site population. The building at 398 Quint Street is unoccupied and no longer in use. The proposed staging areas at the Pier 94 Backlands, Pier 94, and Pier 96 are industrial in use and contain no housing.

The proposed project does not include the development of residences or additional roads and would not increase the capacity of the existing headworks, and therefore would not induce population growth. The project would have no effect on the geographic extent or capacity of the existing SEP, as it would consolidate the functions and capacities of the existing SEP 011 and SEP 012 headworks. The SFPUC currently employs approximately 280 employees for the SEP-wide operations. Operations and maintenance of the existing headworks currently require four employees.[41] Operation of the new Headworks Facility would not require an increase in workers, and therefore would not substantially induce population growth in the area and would not require the construction of housing. Therefore, operation of the proposed project would have no growth-inducing impact.

Impact PH-2: The proposed project would not displace existing housing units or substantial numbers of people, nor would it create substantial demand for additional housing that would necessitate the construction of replacement housing. (No Impact)

The project site does not include existing housing or residential use. Therefore, the proposed project would not impact existing residences or businesses, nor would it result in the displacement of any people or the construction of new housing elsewhere. Because the project would not displace existing housing or people there would be no impact.

Impact C-PH: The proposed project, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would not contribute to a cumulative impact on population and housing. (Less than Significant)

The geographic scope for potential cumulative population and housing impacts encompasses the Bayview-Hunters Point Community. The cumulative projects in Table 7 that would add new residents, housing, and/or employment include project numbers 24 (San Francisco Wholesale Produce Market Expansion), 26 (Candlestick Point–Hunters Point Shipyard Phase I and II Development Project), and 28 (Pier 70 Waterfront Site).

As discussed in Impact PH-2, the proposed project would not displace any existing housing or result in the need for replacement housing. Thus, there would be no cumulative impact associated with displacement of housing.

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41 SFPUC, *Alternatives Analysis Report TO-23 New Headworks Facility Southeast Water Pollution Control Plant*, February 2015.

Construction

As discussed under Impact PH-1, project construction is expected to generate up to 262 construction jobs over a duration of approximately 5 ½ years. Because construction employment is temporary, it would not necessarily combine with past or future construction projects to contribute to a cumulative impact related to construction employment. However, project construction could be occurring concurrently with a considerable amount of other construction activity within San Francisco. A number of cumulative projects identified in Table 7 would likely be under construction at the same time as the proposed project. Despite the current robust level of construction activity in the City, the construction labor force in San Francisco and the surrounding region is expected to accommodate demand for construction labor, especially when considering the substantial job losses in the region experienced by the construction industry until recently. Therefore, the cumulative impact of project construction in combination with other concurrent construction projects would be less than significant.

Operation

Once operational, the new Headworks Facility would not require an increase in workers and would therefore not result in an increase in population. Although the other cumulative projects listed above may result in impacts on population and housing, the proposed project would not contribute to this increase and thus there would be no cumulative impact in this regard.

E.4. CULTURAL RESOURCES

Topics:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Not Applicable
4. CULTURAL RESOURCES—Would the project:					
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5, including those resources listed in Article 10 or Article 11 of the San Francisco Planning Code?	☐	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☒	☐	☐	☐
c) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐	☐
d) Cause a substantial adverse change in the significance of a tribal cultural resource as defined in Section 21074?	☐	☒	☐	☐	☐

Impact CR-1: The proposed project would not cause a substantial adverse change in the significance of a historical resource as defined in §15064.5, including those resources listed in Article 10 or Article 11 of the San Francisco Planning Code. (Less than Significant)

Historical resources are those properties that meet the terms of the definitions in Public Resources Section 21084.1 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 listed in an adopted local historic register. The term "local historic register" or "local register of historical resources" refers to a list of resources that are officially designated or recognized as historically significant by a local government pursuant to resolution or ordinance. 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 a historical resource. 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 an existing or potential historic district. 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."

This impact analysis addresses historical resources of the built environment (i.e., structures, buildings, objects, and districts). A discussion of archeological resources, including those that qualify as historical resources as defined in State CEQA Guidelines Section 15064.5, is provided in the discussion of Impact CR-2.

398 Quint Street

The proposed project would demolish the building at 398 Quint Street located on the BFS parcel. The two-story building, constructed ca. 1900-1910, is a late Queen Anne style with Edwardian influences common in San Francisco buildings during the first decade of the twentieth century.[42] The building is rectangular in massing with a flat roof and horizontal wood siding, and is proposed for demolition as part of the project. A Department of Parks and Recreation 523 Form was prepared to evaluate whether the existing building would meet the criteria for NRHP, CRHR, or local listing.

The survey and evaluation concluded that the building at 398 Quint Street does not appear eligible for individual listing in the NRHP or CRHR or for local designation. Under NRHP Criterion A and CRHR Criterion 1, the building is not significant within the context of pre-World War II industrial development or Islais Creek Estuary reclamation development in the Bayview-Hunters Point area. The former owner, the Christenson Lumber Company, and the current building at 398 Quint Street do not have strong or important associations within the context of industrial development in Bayview-Hunters Point or San Francisco, or the retail/wholesale lumber business and are not eligible for listing in the NRHP or the CRHR under this criterion.[43] Under NRHP Criterion B and CRHR Criterion 2, the building is not significant for its association with the lives of persons important to history. Research did not reveal that the Christenson family made any other historically important contributions to history outside of the lumber business, or that any other individuals associated with the use or development of this property made demonstrably important contributions to history that rise to the level of significance under this criterion.[44] Under NRHP Criterion C and CRHR Criterion 3, the building does not represent an important example of a type, period, or method of construction, does not possess high artistic value, and is not the work of a master. As a common example of the period and type this building lacks architectural distinction and is not significant under this criterion.[45] Under NRHP Criterion D and CRHR Criterion 4, the property is not a significant, nor is it likely a source of important information regarding history because it does not appear to have any likelihood of yielding important information about historic construction materials or technologies.[46]

The building has also undergone many alterations that have diminished its historic integrity of materials, workmanship, and design. The alterations to the setting, including removal of all of the other lumber company buildings have diminished the integrity of setting.[47] There is no known or potential historic district to which this property would be a contributor.[48] The building at 398 Quint Street is not considered a historical resources for CEQA purposes or under NRHP. Demolition of this building would therefore result in no impact on the significance of historical architectural resources.

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42 Melvin, Steven, State of California Department of Parks and Recreation Primary Record, DPR 523 Form for 398 Quint Street, October 2015.
43 Ibid.
44 Ibid.
45 Ibid.
46 Ibid.
47 Ibid.
48 Ibid.

San Francisco Fire Department Auxiliary Water Supply System Discontiguous Historic District

The proposed BFS sewer connection lines would be constructed within Evans Avenue and Rankin Street, where pipelines for the San Francisco Fire Department (SFFD) Auxiliary Water Supply System (AWSS) are located. The SFFD AWSS (P-38-004671) was built for exclusive use by the SFFD between 1908 and 1913 in response to the failure of the existing emergency water system during the 1906 earthquake. The system is independent from the city's municipal potable water system and is dispersed widely across San Francisco. The AWSS consists of two pump stations, two water storage tanks, one reservoir, 172 cisterns, and approximately 135 miles of pipes.[49]

A historic resource evaluation of the AWSS prepared by Tetra Tech[50] determined that no components besides previously eligible/listed Pump Stations No. 1 and No. 2 are eligible for individual listing to the National or California Registers, but that the AWSS is eligible to both the NRHP and CRHP as a discontiguous district under Criteria A/1 (associated with an important event, specifically rebuilding and reconstruction in response to the 1906 earthquake) and C/3 (innovative design of a water storage and conveyance system). Additionally, the AWSS was determined to be eligible for listing as a local landmark under Article 10 of the San Francisco Planning Code.[51] The overall boundaries of the district are the City and County of San Francisco. The period of significance was defined as 1908 to 1913, the time of initial construction, under Criterion A/1. Under Criterion C/3, the period of significance is defined as 1908 to 1964 (the end of the historic era, 45 years ago, at the time of recording), prior to conversion of the system from steam to diesel power in the 1970s, which changed the way the system functioned and replaced the character-defining steam equipment with modern diesel equipment.

The character-defining features (those that convey the historical significance of the district) of the AWSS are the water system's function, its engineering design and plan. The character-defining features of the engineering design and plan include the plan of the Lower/Upper Zone, pipe route, and gravity-fed design. Other character-defining features include: aboveground features such as pump stations, water tanks, gate valve houses, hydrants, and reservoir; any decorative elements, architectural styles, and original building materials; as well as any pump valves or equipment constructed or installed during the period of significance.[52] The historic resource evaluation identified that aboveground resources are more important in defining the character of the AWSS, but the pipes and their routes are significant to the function of the AWSS, as they illustrate the development and growth of the system over time. However, the historic resource evaluation indicates that in the hierarchy of AWSS' features, the later additions to the system, even though they could be considered character-defining, may have less relative importance.[53]

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49 Tetra Tech, *Historical Resources Evaluation for Auxiliary Water Supply System, City and County of San Francisco*, September 2009.

50 Ibid.

51 Ibid.

52 Ibid.

53 JRP Historical Consulting, *Historic Resources analysis regarding impacts to Auxiliary Water Supply System pipes from the San Francisco Public Utilities Commissions' Southeast Treatment Plant Headworks Project, San Francisco*, September 27, 2016.

The AWSS pipes and the route of the pipes at the intersection of Evans Avenue and Rankin Street were built in 1963 and thus meet the definition of component features that contribute to the significance of the system, but they are of tertiary importance because they are below grade and later additions to the system.[54] AWSS pipes on Rankin Street and Davison Avenue installed in 1977 that replaced earlier pipes built in 1926 are not components or features that contribute to the significance of the system. While these pipes may run along the route of the older pipes at this location, the fact that the physical pipes were replaced diminished the historic integrity of the feature sufficiently that they no longer contribute to the historic property / historical resource.

No above ground features of the AWSS are located in the immediate vicinity of the proposed project, with the exception of AWSS hydrants. The BFS sewer connection line construction would consist of excavation, requiring the replacement or relocation of the AWSS pipeline at the intersection of Evans Avenue and Rankin Street, which would modestly alter the route of the pipes. This action would not cause a substantial adverse change to the AWSS because it would not materially impair the historical resource. This action would not diminish the integrity of the AWSS sufficiently that the overall property could not continue to be eligible for the CRHR. This pipe replacement would be a very small component (less than 0.04 percent) of the overall AWSS distribution pipes, which themselves are of relatively less historic importance than the primary above ground buildings and structures of the system. Furthermore, this project would replace pipes that were installed near the end of the AWSS' period of significance and they are not associated with the system's original area or period of development from 1908 to 1913.[55] . In addition, the proposed project would not remove, alter, or realign any aboveground or other more important contributing features (system's function, pump stations, water tanks, gate valve houses, hydrants, and reservoir) of the AWSS system. Therefore, the proposed project would have a less-than-significant impact on the significance of a historical resource.

Southeast Treatment Plant Streamline Moderne Industrial Historic District

In 2015, the NRHP/CRHR eligibility of each of the buildings and structures within the entire SEP, including SEP 011 and SEP 012, was assessed. The evaluation determined that the SEP as a whole does not constitute a historic district because it lacks "aesthetically unifying plan or physical development, as evidenced by the wide variety of architectural styles, periods of construction, sizes, and locations of the numerous buildings and structures."[56] However, the evaluation concluded that 12 buildings and 10 structures in the southern part of the SEP, constructed in 1952, qualify as a historic district: the Southeast Treatment Plant Streamline Moderne Industrial Historic District. The State Historic Preservation Officer has recently concurred that the district is eligible for listing on the NRHP under Criteria A and C at the local level of significance[57].

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54 Ibid.
55 Ibid.
56 Brewster, Brad State of California Department of Parks and Recreation Primary Record, DPR 523 Form for Southeast Treatment Plant, June 2015.
57 State Historic Preservation Officer, Letter from Julianne Polanco to Ahmad Kashkoli of the State Water Resources Control Board, dated October 6, 2016

The proposed project would demolish SEP 010 Influent Control Structure/Southeast Lift Station, SEP 011, and SEP 012, which are approximately 740 feet outside the boundaries of the historic district, and would be physically and visually separated from the District by several intervening buildings. The evaluation concluded that none of the structures were eligible for listing.[58] In addition, the project site and buildings proposed for demolition are not listed under Article 10 or 11 of the San Francisco Planning Code, which protect landmarks, historic districts, and conservation districts in the city. Thus, the SEP 010 Influent Control Structure/Southeast Lift Station, SEP 011, and SEP 012 are not considered historical resources for CEQA purposes or under NRHP. Demolition of these buildings would therefore result in no impact on the significance of historical architectural resources. The District thus would not be affected by the proposed project.

Impact CR-2a: The proposed project may cause a substantial adverse change in the significance of a prehistoric archaeological resource and potentially disturb human remains, including those interred outside of formal cemeteries. (Less than Significant with Mitigation)

The project site was evaluated to determine the potential for encountering prehistoric archeological resources during construction. A cultural resources inventory report was prepared for the project area, and as part of the evaluation a records search of the proposed project's area of potential effect (APE) and a ½-mile radius was conducted. The report also included review of previous fieldwork and archival research recently conducted for various SEP projects and project-specific materials.[59]

The SEP has been determined to have an elevated sensitivity for submerged archaeological sites based on modeling and geoarchaeological coring which has identified a prehistoric shell midden (site CA-SFR-171) in the southern portion of the SEP; and an isolated flake recovered from a beach deposit along the northern portion of the SEP (where SEP 011 headworks is currently located).[60] Site CA-SFR-171 was determined to be eligible for the NRHR under Criterion D, and would therefore also be considered eligible to the CRHP under Criterion 4, on the basis of its unique presence in a heavily impacted, urbanized setting, the high degree of intactness, and its ability to address important research questions.[61] Recently, the boundaries of SFR-171 were substantially expanded to the north based on the coring work that documented the isolated flake discussed above.[62]

The recorded boundary of the site places it within the southern half of the SEP, with the northernmost portion extending just past Jerrold Avenue roughly 1,000 feet south of the proposed project APE. This resource is outside of the APE and as currently recorded would not be impacted by project activities and therefore not discussed further.

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58 Brewster, Brad State of California Department of Parks and Recreation Primary Record, DPR 523 Form for Southeast Treatment Plant, June 2015.

59 Far Western, *Cultural Resources Inventory Report for the New Headworks Facility, Southeast Water Pollution Control Plant San Francisco, California*, August 2016 DRAFT.

60 Ibid.

61 Ibid.

62 Far Western Anthropological Research Group, Prehistoric Archaeological Testing Report for the Southeast Water Pollution Control Plant, San Francisco, California, May 2016. [Draft.]

The proposed project would require minor excavation at the off-site staging areas for temporary utilities, and shallow trenching along Phelps Street for the construction trailer. The SEP, BFS parcel, and off-site staging areas are underlain by artificial fill. Given the shallow nature of the ground disturbance required for the off-site staging area, and Phelps Street trenching, it is unlikely that any prehistoric archaeological resources would be encountered and no impact would occur.[63] Demolition of the 398 Quint Street building would not require excavation, and therefore would have no impact related to prehistoric archaeological resources. As a result, the off-site staging areas, Phelps Street construction trailer staging area, and the 398 Quint Street building are not discussed further.

Excavation and ground-disturbing activities associated with construction of the new Headworks Facility include: excavation at the site of the new Headworks Facility of up to 35 feet; trenching along Phelps Street to install a sewer line from the construction trailers to an adjacent sewer manhole; excavation along Evans Avenue/Rankin Street/Davidson Avenue up to 50 feet deep for the sewer connection work, and pile driving that could extend up to 85 feet bgs.

As described above, a single submerged flake was recovered during geoarchaeological coring investigations adjacent to the SEP 011 headworks building. Isolated finds such as the submerged flake are limited in their ability to provide information, and discovery and recovery of such finds generally exhausts their data potential. However, the early date suggested for this find indicates that there is a potential for significant resources dating to the earliest occupation of the bayshore in the vicinity. The submerged flake was recovered from the southern boundary of the proposed project area and pile driving for the Headworks project has the potential to result in impacts to such resources, should any be present. For this reason, a prehistoric archaeological testing plan has been developed for the proposed project to determine (1) if the single flake recovered from the geoarchaeological coring is in fact an isolated artifact, or if it is part of a larger site; and (2) the presence or absence of archaeological materials associated with the intact terrestrial soil formed on the pre-bay alluvium in the central and southern portions of the project areas.[64] The testing plan establishes the level of effort, fieldwork and laboratory methods for additional geoarchaeological coring planned within the proposed project footprint to more definitively assess whether the proposed project has the potential to result in significant impacts to prehistoric resources.

If prehistoric archaeological material is discovered during the archaeological testing plan, then this information can form the basis for assessing the nature of any further archaeological investigations. Previously unrecorded and, in particular, deeply buried prehistoric archaeological deposits could be discovered during the testing plan, ground-disturbing activities, or encountered or otherwise impacted during piling construction. Because of the finite number of prehistoric sites in San Francisco, and because archaeological deposits at depth in the project vicinity would be of substantial age, they would be assumed to be significant resources. Disturbance or destruction of such deposits during construction would be a significant impact. However, with implementation of **Mitigation Measure M-CR-2a: Archaeological Data Recovery,** potential impacts on

63 Ibid.

64 Far Western, Prehistoric *Archaeological Testing Plan for the New Headworks, SE-08, and WW-599 Projects, Southeast Water Pollution Control Plant, San Francisco, California*, July 2016 DRAFT.

archaeological resources would be reduced to less-than-significant levels by requiring identification/discovery efforts, testing/evaluation, and mitigation as needed.

Mitigation Measure M-CR-2a: Archaeological Resources Data Recovery.

Because buried prehistoric archeological resources may be present within the archeological C-APE that could be disturbed during project implementation, the following measures shall be undertaken to avoid any potentially significant adverse effect from the project on buried historical resources. The San Francisco Public Utilities Commission (SFPUC) shall retain the services of an archeological consultant selected in consultation with the City and County of San Francisco Environmental Review Officer (ERO) or designee. The archeological consultant shall design an archeological data recovery program as specified herein, to be implemented based on the results of consultation on initial coring as described above. The archeological consultant's work shall be conducted in accordance with this measure at the direction of ERO or designee. All plans and reports prepared by the consultant as specified herein shall be submitted first and directly to the ERO or designee for review and comment, and shall be considered draft reports subject to revision until final approval by the ERO or designee. Archeological data recovery programs required by this measure could suspend construction of the project for up to a maximum of four weeks. At the direction of the ERO or designee, 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 Section 15064.5 (a)(c).

***Consultation with Descendant Communities*:** On discovery of an archeological site[65] associated with descendant Native Americans, the Overseas Chinese, or other descendant group an appropriate representative[66] of the descendant group and the ERO or designee shall be contacted. The representative of the descendant group shall be given the opportunity to monitor archeological field investigations of the site and to consult with the ERO or designee regarding appropriate archeological treatment of the site, of recovered data from the site, and, if applicable, any interpretative treatment of the associated archeological site. A copy of the Final Archeological Resources Report shall be provided to the representative of the descendant group.

Archeological Data Recovery Program. The archeological consultant shall prepare and submit to the ERO or designee for review and approval an archeological data recovery plan (ADRP).

Data recovery shall be conducted in accord with the ADRP. The archeological consultant, SFPUC, and the ERO or designee 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

65 The term "archeological site" is intended here to minimally include any archeological deposit, feature, burial, or evidence of burial.

66 An "appropriate representative" of the descendant group is here defined to mean, in the case of Native Americans, any individual listed in the current Native American Contact List for the City and County of San Francisco maintained by the California Native American Heritage Commission and in the case of the Overseas Chinese, the Chinese Historical Society of America. An appropriate representative of other descendant groups shall be determined in consultation with the Planning Department archeologist.

ERO or designee. 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 shall 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 project. Destructive data recovery methods shall not be applied to portions of the archeological resources if nondestructive methods are practical.

In the instance of a deeply buried prehistoric archeological deposit potentially affected by project activities for which conventional data recovery methods are not feasible, the ADRP shall identify data recovery approaches that will result in the maximally significant data that is feasible.

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.
- *Interpretive Program*. Consideration of an on-site/off-site public interpretive program during the course of the archeological data recovery program.
- *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 Associated or Unassociated Funerary Objects. The treatment of human remains and of associated or unassociated funerary objects discovered during any soils disturbing activity shall comply with applicable State and federal laws. This shall include immediate notification of the Coroner of the City and County of San Francisco and in the event of the Coroner's determination that the human remains are Native American remains, notification of the California State Native American Heritage Commission (NAHC) who shall appoint a Most Likely Descendant (MLD) (Public Resources Code Section 5097.98). The archeological consultant, project sponsor, ERO, and MLD shall have up to but not beyond six days of discovery to make all reasonable efforts to develop an agreement for the treatment of human remains and associated or unassociated funerary objects with appropriate dignity (CEQA Guidelines. Sec. 15064.5(d)). The agreement should take into consideration the

appropriate excavation, removal, recordation, analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects. The agreement should take into consideration the appropriate excavation, removal, recordation, analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects. Nothing in existing State regulations or in this mitigation measure compels the project sponsor and the ERO to accept recommendations of an MLD. The archeological consultant shall retain possession of any Native American human remains and associated or unassociated burial objects until completion of any scientific analyses of the human remains or objects as specified in the treatment agreement if such as agreement has been made or, otherwise, as determined by the archeological consultant and the ERO.

Final Archeological Resources Report. The archeological consultant shall submit a Draft Final Archeological Resources Report (FARR) to the ERO or designee that evaluates the historical significance of any discovered archeological resource and describes the archeological and historical research methods employed in the archeological testing/monitoring/data recovery program(s) undertaken. Information that may put at risk any archeological resource shall be provided in a separate removable insert within the final report.

Once approved by the ERO or designee, copies of the FARR shall be distributed as follows: California Archeological Site Survey Northwest Information Center (NWIC) shall receive one (1) copy and the ERO or designee shall receive a copy of the transmittal of the FARR to the NWIC. As requested by the ERO, the Environmental Planning division of the San Francisco Planning Department shall receive one bound, one unbound and one unlocked, searchable PDF copy on CD of the FARR along with copies of 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. In instances of high public interest in or the high interpretive value of the resource, the ERO or designee may require a different final report content, format, and distribution than that presented above.

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

Development in the vicinity of the project site occurred sometime between 1869 and 1883, and the Phelps Street construction trailer staging area was developed around the same time or shortly thereafter. The off-site staging areas at Pier 94, Pier 96, and Pier 94 backlands remained within the San Francisco Bay until sometime around 1960. Historically the project area was a part of "Butchertown" with several tanneries present in the vicinity of the SEP, and tannery remains have been observed during construction in the headworks area. Multiple railroads served the project area vicinity, including the Southern Pacific Railroad, Ocean Shore Railroad, and Western Pacific Railroad. Atchison, Topeka, and Santa Fe Railroad tracks went up the middle of Quint Street with spur lines to the east and west. Construction for the SEP began in 1950 and was completed by mid-1952,

including 18 buildings and two groupings of 10 digester tanks. By 1968, the area around Piers 94 and 96 had been filled and the piers constructed.[67]

The proposed project would require minor excavation at the off-site staging areas for temporary utilities, and shallow trenching along Phelps Street for the construction trailer. The proposed off-site staging areas are located on artificial fill from land reclaimed during the 1960s. There is potential for historical structures, such as shipwrecks or other maritime resources, to be present in these areas, however, they would be preserved beneath the artificial fill on or beneath the bay and estuary deposits.[68] Given the shallow nature of the ground disturbance required for the off-site staging area, it is unlikely that intact historical archaeological remains would be encountered, and therefore no impact would occur.

As described above, the proposed project is located in an area where pier/wharf development and some of the earliest tannery businesses in the area were located. Excavation and ground-disturbing activities associated with construction of the new Headworks Facility would extend to depths up to 35 feet, which would extend past the depths of the tannery remains that were previously documented. Although extensive ground disturbance for previous construction at the SEP may have already eliminated tannery features, it is possible that remnant features or deposits have survived and could be encountered during the proposed project's construction.[69] The proposed project could therefore still have the potential to impact this potential resource.[70]

Disturbance or destruction of such deposits during construction would be a significant impact. However, with implementation of **Mitigation Measure M-CR-2b: Archaeological Monitoring**, potential impacts on historical archaeological resources would be rendered less than significant by requiring archeological identification/discovery/evaluation, and a mitigation program during project excavation activities.

> **Mitigation Measure M-CR-2b: Archaeological Monitoring.**
>
> Based on the reasonable potential that archeological resources may be present within the project site, the following measures shall be undertaken to avoid any potentially significant adverse effect from the proposed project on buried or submerged historical resources. The project sponsor shall retain the services of an archeological consultant selected in consultation with the City and County of San Francisco Environmental Review Officer (ERO) or designee.. The archeological consultant shall undertake an archeological monitoring program.
>
> *Archeological monitoring program* (AMP). The archeological monitoring program shall minimally include the following provisions:

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67 Far Western, *Cultural Resources Inventory Report for the New Headworks Facility, Southeast Water Pollution Control Plant San Francisco, California*, August 2016 DRAFT.
68 Ibid.
69 Ibid.
70 Ibid.

- The archeological consultant, project sponsor, and ERO shall meet and consult on the scope of the AMP reasonably prior to any project-related soils disturbing activities commencing. The ERO in consultation with the project archeologist shall determine what project activities shall be archeologically monitored. In most cases, any soils disturbing activities, such as demolition, foundation removal, excavation, grading, utilities installation, foundation work, driving of piles (foundation, shoring, etc.), site remediation, etc., shall require archeological monitoring because of the potential risk these activities pose to archaeological resources and to their depositional context;

- The archeological consultant shall advise all project contractors to be on the alert for evidence of the presence of the expected resource(s), of how to identify the evidence of the expected resource(s), and of the appropriate protocol in the event of apparent discovery of an archeological resource;

- The archaeological monitor(s) shall be present on the project site according to a schedule agreed upon by the archeological consultant and the ERO until the ERO has, in consultation with the archeological consultant, determined that project construction activities could have no effects on significant archeological deposits;

- The archeological monitor shall record and be authorized to collect soil samples and artifactual/ecofactual material as warranted for analysis;

- If an intact archeological deposit is encountered, all soils disturbing activities in the vicinity of the deposit shall cease. The archeological monitor shall be empowered to temporarily redirect demolition/excavation/pile driving/construction crews and heavy equipment until the deposit is evaluated. If in the case of pile driving activity (foundation, shoring, etc.), the archeological monitor has cause to believe that the pile driving activity may affect an archeological resource, the pile driving activity shall be terminated until an appropriate evaluation of the resource has been made in consultation with the ERO. The archeological consultant shall immediately notify the ERO of the encountered archeological deposit. The archeological consultant shall, after making a reasonable effort to assess the identity, integrity, and significance of the encountered archeological deposit, present the findings of this assessment to the ERO.

- On the finding of the ERO that a potentially significant archeological resource may be affected by the project, the archeological consultant shall undertake a data recovery program in conformance with the archeological data recovery plan required by Mitigation Measure M-CR-2a.

- The results of the archeological monitoring program will be reported in the project FARR as required by Mitigation Measure M-CR-2a.

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

Although no known human burials have been identified within the project C-APE, the possibility of encountering human remains cannot be entirely discounted. Earth-moving activities associated with project construction could result in direct impacts on previously undiscovered human remains. Therefore, the potential impact regarding disturbance to human remains could be significant. The project is subject to the provisions of California Health and Safety Code, Section 7050.5, with respect to the discovery of human remains. The Public Resources Code (PRC), Section 5097.98, regulates the treatment and disposition of human remains encountered during project grading and construction. This impact would be reduced to a less-than-significant level with implementation of **Mitigation Measure M-CR-2a** by requiring avoidance measures or the appropriate treatment of human remains if accidentally discovered during construction**.**

Impact CR-4: The proposed project may cause a substantial adverse change in the significance of a tribal cultural resource. (Less than Significant with Mitigation)

Tribal cultural resources (TCR) are those resources that meet the definitions in PRC Section 21074. Tribal cultural resources are defined as sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are also either: (a) included or determined to be eligible for inclusion in the CRHR, or (b) included in a local register of historical resources, as defined in PRC Section 5020.1(k). Based on discussions with Native American tribal representatives, prehistoric archaeological resources in San Francisco are presumed to be potential tribal cultural resources. A tribal cultural resource would be adversely affected if a project has the potential to impact its significance.

Pursuant to Assembly Bill 52, which became effective on July 1, 2015, within 14 days of a public agency's decision to undertake a project (or a determination that the project application is complete), the lead agency is required to contact the Native American tribes that are culturally or traditionally affiliated with the geographic area in which the project is located. Notified tribes have 30 days to request consultation with the lead agency to discuss potential impacts on tribal cultural resources and measures for addressing those impacts.

On July 13, 2016 the Planning Department mailed a "Tribal Notification Regarding Tribal Cultural Resources and CEQA" related to this project to Native American tribal representatives who had requested notification. During the 30-day comment period, no Native American tribal representatives contacted the Planning Department to request consultation. As discussed under Impact CR-2, unknown archaeological resources may be encountered during construction, and such resources could be identified as TCRs at the time of discovery or at a later date. Therefore, the potential adverse effects of the proposed project on previously unidentified archaeological resources, as discussed under Impact CR-2, also represent a potentially significant impact on TCRs. **Mitigation Measure M-CR-3** would require either preservation-in-place of the TCRs, if determined effective and feasible, or implementation of an interpretive program for the TCRs, to be developed in consultation with affiliated Native American tribal representatives. Combined with **Mitigation Measure M-CR-2a, Archaeological Resources Data Recovery,** these measures would reduce potential adverse effects on TCRs to a less-than-significant level.

Mitigation Measure M-CR-3: Tribal Cultural Resources Interpretive Program.

If the Environmental Review Officer (ERO) determines that preservation-in-place of previously unidentified archaeological resources (as outlined in **Mitigation Measure M-CR-2, Archaeological Resources Data Recovery**) is not a sufficient or feasible option, and if in consultation with the affiliated Native American tribal representatives the ERO determines that the resource constitutes a TCR, the SFPUC shall implement an interpretive program for the TCR in consultation with the tribal representatives. An interpretive plan produced in consultation with the ERO and affiliated tribal representatives, at a minimum, and approved by the ERO would be required to guide the interpretive program. The plan shall identify, as appropriate, proposed locations for displays or installations, the proposed content and materials of those displays or installations, the producers or artists of the displays or installations, 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, artifact displays and interpretation, educational panels, or other informational displays.

Impact C-CR: The proposed project, in combination with other past, present and reasonably foreseeable future projects in the vicinity, would result in cumulative impacts on cultural resources. (Less than Significant with Mitigation)

The geographic scope for cumulative cultural resource impacts encompasses areas within or adjacent to the SEP site. All cumulative projects identified are assumed to involve some degree of ground disturbance during construction and to have the potential to impact historic architectural, archeological, and tribal cultural resources. However, it is important to note that impacts on historic, archeological, and tribal cultural resources are site specific. For historic architectural resources, significant cumulative impacts would occur if project activities would include removal, alteration, or realigning of resources within the district in a manner that would diminish the district's overall historic integrity.

The cumulative projects that would be constructed within and adjacent to SEP include project numbers 1 through 13, 14 (Central Bayside System Improvement Project), 16 (Land Reuse of 1801 Jerrold Avenue), 22 (Quint Street Bridge Replacement Project), and 32 (Quint Street Lead Track) in Table 7. Projects 1 and 3 would be within the NRHP/CRHR eligible Southeast Treatment Plant Streamline Moderne Industrial Historic District. Project 1, the Biosolids Digester Facilities, would result in the loss of one structure within the District, and Project 3 would modify the roofs of existing digesters inside the District. This analysis presumes that the loss of one structure within the District would not impact the overall significance and historic integrity of the potential District, and because the Headworks project would have no impact on the significance of the District, there would be no cumulative impact.

Although the cumulative projects in the vicinity of the SEP do not appear to affect the eligible AWSS discontiguous district, the system extends through the entire City and there may be other projects that could affect buried AWSS pipelines, thus potentially contributing to a significant cumulative historic architectural impact. However, potential cumulative impacts on the AWSS discontiguous district would likely be less than significant because they would likely consist of

replacements of small portions of the pipeline system. The Department of Parks and Recreation 523D form for the AWSS lists the primary character-defining features of the historic district as the system's function and its engineering design and plan.[71] Approximately 135 miles of pipes are in the AWSS historic district. Replacement of relatively small segments of pipe happens on a regular basis and would not constitute a direct adverse effect on the historic property because modification of the pipeline would not impair the district's ability to convey its historical significance, nor would it alter the district's eligibility status.

Each of the cumulative projects is assumed to involve some degree of ground disturbance during construction and therefore could result in a significant cumulative impact on prehistoric archaeological resources, including CA-SFR-171 and a potential deeply-buried prehistoric resource associated with the stone tool found at the Headworks site. In addition, ground-disturbing activities during construction of the cumulative projects could uncover previously unidentified archaeological resources, human remains, or TCRs, and pilings could penetrate deeply buried resources if they are present, thus resulting in a significant cumulative impact to significant archaeological resources. The proposed project's contribution could be considerable if testing currently underway determines that there is a deeply buried resource within the area that would be affected by coring for the Headworks project, or if previously unknown archaeological resources or TCRs were discovered during project excavations. However, the proposed project's impacts would be reduced to less than cumulatively considerable (less than significant) with implementation of **Mitigation Measures M-CR-2a: Archaeological Resources Data Recovery, M-CR-2b: Archaeological Monitoring,** and **M-CR-3: Tribal Cultural Resources Interpretive Program**, by requiring identification/discovery efforts, testing/evaluation, and either preservation in-place or implementation of an interpretive program for TCRs**.** With the implementation of these mitigation measures, the proposed project's contribution to potentially significant cumulative impacts on archaeological resources and TCRs therefore would be less than cumulatively considerable.

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71 Tetra Tech, *Historical Resources Evaluation for Auxiliary Water Supply System, City and County of San Francisco*, September 2009.

E.5. TRANSPORTATION AND CIRCULATION

Topics:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Not Applicable
5. TRANSPORTATION AND CIRCULATION— Would the project:					
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐	☐
b) Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location, that results in substantial safety risks?	☐	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses?	☐	☐	☒	☐	☐
e) Result in inadequate emergency access?	☐	☐	☒	☐	☐
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☒	☐	☐

The project site does not contain any physical features that would result in a change in air traffic patterns. Therefore, Topic E.5(c) is not applicable and is not discussed further.

As described in Section E, Evaluation of Environmental Effects, the proposed project meets the screening criteria for VMT because it is a public services land use (public utility) and within 0.5 mile of a major transit stop. Because it meets the screening criteria, VMT impacts are considered to be less than significant, and a detailed VMT analysis as it relates to automobile delay impacts is not required for the proposed project. The proposed project would not induce additional vehicle trips by adding a new roadway and would not increase the physical roadway capacity.

Following the construction period, traffic operations in the project area would revert to the conditions that existed prior to construction. There would be no increase in staff levels at the site and therefore the number of operational trips to and from SEP for the new Headworks Facility would be similar to those under existing conditions (see Section B.5, Operation and Maintenance).

The proposed project would not permanently change the existing or planned transportation network or existing traffic patterns, and would not conflict with any plans, ordinances, or policies addressing the safety or performance of the circulation system related to transit, bicycle, or pedestrian travel. No impacts related to transportation and circulation would result from project operations. The analysis in this section therefore focuses exclusively on transportation impacts during construction activities.

The following discussion is based on a transportation impact study prepared for the proposed project.[72]

E.5.1. Setting

Regional Roadways

The project site is approximately 0.75 mile northeast of the I-280 and U.S. 101 interchange; both I-280 and U.S. 101 provide freeway access to and from the project site. I-280 is a north-south freeway that runs between the U.S. 101/I-680 interchange in San Jose and the King Street ramps in San Francisco. The project area can be accessed from the Cesar Chavez Street off-ramp in the northbound direction or the Pennsylvania Avenue off-ramp in the southbound direction. The nearest I-280 on-ramps are from 25th Street in the northbound direction and Pennsylvania Avenue in the southbound direction.

U.S. 101 is a north-south freeway and the nearest on-ramps to the project area are on Cesar Chavez Street for both the northbound and southbound directions. However, given the proximity to the I-280/U.S. 101 interchange approximately 0.75 mile southwest of the project, traffic going to or coming from south of the project area via U.S. 101 would likely take I-280 at the interchange and use the I-280 on- and off-ramps at Cesar Chavez Street.

Local Roadways

Access to the project site is provided by arterial and local roadways. The roadway network surrounding the project site is generally an east-west and north-south grid, and the majority of streets near the project site are two-way. These roadways are described below.

- **Cesar Chavez Street** in the vicinity of the project site has two travel lanes in the eastbound direction and one travel lane in the westbound direction, with no on-street parking on either side.

- **Evans Avenue** runs east and west and has two travel lanes in each direction in the vicinity of the project site, with on-street parking on both sides of the street.

- **Jerrold Avenue** runs east and west and has one travel lane in each direction in the vicinity of the project site, with on-street parking on both sides of the street.

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72 CHS Consulting Group, *SFPUC Southeast Water Pollution Control Plant 250 MGD New Headworks Facility Project Transportation Impact Study*, October 2016.

- **Oakdale Avenue** runs east and west from and has one travel lane in each direction, with on-street parking on both sides of the street.

- **Third Street** runs north and south and has two travel lanes with on-street parking in each direction in the vicinity of the project site.

- **Napoleon Street** is an east-west roadway with one travel lane in each direction, with on-street parking on both sides of the street.

- **Toland Street** is a north-south roadway with one travel lane in each direction and on-street parking on both sides of the street. The General Plan designates Toland Street as a freight traffic route.

- **Quint Street** is a north-south roadway that runs between Thomas Avenue and Cargo Way, with interruptions between Jerrold and Evans Avenues for the project site. Quint Street between Newcomb and Jerrold Avenues was permanently closed on October 5, 2015 due to the Quint Street Bridge Replacement project. It has one travel lane in each direction and on-street parking on both sides of the street.

- **Rankin Street** is a north-south discontinuous roadway that is approximately a mile long, runs between Revere Avenue and Islais Creek Channel, with interruptions between Evans and Jerrold Avenues for the SEP. It has one travel lane in each direction and on-street parking on both sides of the street.

- **Phelps Street** is an approximately 1-mile-long north-south roadway that runs between Palou Avenue and Third Street.

- **Davidson Avenue** is a 0.5-mile-long east-west roadway with one travel lane in each direction and on-street parking on both sides of the street.

- **Custer Avenue** is a 0.25-mile-long east-west roadway with one travel lane in each direction and on-street parking on both sides of the street.

- **Cargo Way** is an east-west roadway with two travel lanes in each direction, and no on-street parking. The General Plan designates Cargo Way as a freight traffic route.

- **Amador Street** is an approximately half-mile-long roadway that runs between Cargo Way and Jennings Street through the Pier 94 Backlands, Pier 94, and Pier 96 areas. Amador Street is identified as an Unaccepted/Paper Street.[73] It has one travel lane in each direction, and on-street parking is intermittently permitted in the off-shoulder areas. Amador Street is owned by the Port, but access is not restricted.

[73] These are mapped streets but not "accepted" for maintenance by the City because they do not meet City standards for street construction.

The San Francisco General Plan designations for the roads in the project area include: Major Arterials (Cesar Chavez Street, Evans Avenue, and Third Street); Secondary Arterial (Oakdale Avenue); Designated Freight Traffic Routes (Third Street, Toland Street, and Cargo Way); Transit Preferential Street (Third Street); Citywide Pedestrian Network Street (Third Street); Neighborhood Commercial Pedestrian Street (Third Street).

The *Better Streets Plan* identifies Cesar Chavez Street, Evans Avenue, Jerrold Avenue, Oakdale Avenue, Third Street (north of Jerrold Avenue), Napoleon Street, Toland Street, Quint Street, Rankin Street, Phelps Street (north of Jerrold Avenue), Davidson Avenue, Custer Avenue, and Cargo Way as Industrial Streets. The *Better Streets Plan* identifies Amador Street as an Unaccepted/Paper Street[74], Phelps Street south of Jerrold Avenue as a Neighborhood Residential Street, and Third Street south of Jerrold Avenue as a Commercial Throughway Street.

Cesar Chavez Street and Third Street are also part of the San Francisco Vision Zero High Injury Network, which outlines projects and policy changes to address street safety to reduce serious injuries.

Bicycle Routes

There are five existing bicycle routes in the project area. Bicycle routes are typically classified as Class I, Class II, or Class III facilities. Class I bikeways are bike paths with exclusive rights-of-way for use by bicyclists, with minimal cross flow by motorized vehicles. Class II bikeways are bike lanes striped within the paved areas of roadways and established for the exclusive use of bicyclists. Class III bikeways are signed bike routes that allow bicycles to share streets with vehicles. The existing bicycle routes in the project area include the following:

- **Route 5** is a north-south Class II along Illinois Street and Cargo Way and along Third Street south of Davidson Avenue.
- **Route 7** is north-south Class III facility on Third Street and Phelps Street between Mariposa Street in the Mission Bay and Caroll Avenue by Candlestick Park.
- **Route 60** is an east-west Class II facility along Cesar Chavez Street between U.S. 101 and Third Street.
- **Route 68** is a north-south Class III facility along Evans Avenue and becomes a Class II facility east of Third Street.
- **Route 170** is an east-west Class II facility along Oakdale Avenue between Bayshore Boulevard and Third Street. It serves as a connector route between Route 25 on Bayshore Boulevard and Route 5, which runs along Third Street.

Based on bicycle counts during the weekday AM (7:00 a.m. to 9:00 a.m.) and PM (4:00 p.m. to 6:00 p.m.) peak periods on Wednesday, January 27, 2016, Cesar Chavez Street experienced heavy

[74] These are mapped streets but not "accepted" for maintenance by the City because they do not meet City standards for street construction.

bicycle traffic with approximately 75 and 60 bicyclists during the AM and PM peak hours, respectively. Bicycle volumes along Evans Avenue and Third Street were substantially lower, with fewer than 15 bicyclists traveling during the AM and PM peak hours.[75]

Transit Network

The transit study area covers a two- to three-block radius from the project site. The San Francisco Municipal Transportation Agency (SFMTA) operates six Muni bus routes within the study area. These Muni routes operate along Evans Avenue, Jerrold Avenue, Palou Avenue, and Third Street, and on portions of Toland Street and Quint Street. The Muni routes include five regular bus lines (19-Polk, 23-Monterey, 24-Divisadero, 44-O'Shaughnessy, and 54-Felton) and one light rail line (T-Third). The 19-Polk bus line runs along Evans Avenue and is the only route in the immediate vicinity of the SEP and BFS parcel.

Pedestrian Conditions

Pedestrian amenities generally include sidewalks, crosswalks, curb ramps, pedestrian signals, and streetscape and landscape amenities (e.g., benches, tree-lined buffers, planters, bulb-outs, street lighting). The project site is located within an industrial area; pedestrian amenities are lacking in the project area due to the limited sidewalks along Quint Street, Davidson Avenue, Custer Avenue, Toland Street, and Jerrold Avenue. Most intersections in the project study area are stop-controlled and lack pedestrian crosswalks, except for signalized intersections at Rankin Street/Evans Avenue, Toland Street/Napoleon Street/Evans Avenue, and Phelps Street/Evans Avenue. Sidewalks along Evans Avenue are approximately 6 feet wide adjacent to the project site. The sidewalk along the north side of Evans Avenue adjacent to BFS is approximately nine feet wide and discontinuous due to the rail spur (described below). Sidewalks along Rankin Street are approximately 12 feet wide north of Evans Avenue, but there are no sidewalks on Rankin Street south of Evans Avenue adjacent to the project site. The San Francisco Vision Zero Two-Year Action Strategy does not designate any streets adjacent to the project site as part of the High Injury Network. The nearest High Injury Streets are Cesar Chavez Street and Third Street.

Based on field observations in the project vicinity during the midday period on Tuesday, March 8, 2016, pedestrian activities are generally limited because of the industrial nature of the area; sidewalks and crosswalks are limited and intermittent, commercial loading docks line the streets, and trailers block parts of the curb spaces along Rankin Street, Quint Street, and Davidson Avenue.

Freight Rail

A freight rail spur known as the Quint Street Lead runs at street level parallel to the Caltrain mainline alignment, crossing Jerold Avenue at grade and continuing on Rankin Street along the western edge of the SEP until it crosses Evans Avenue at grade, and diagonally across the BFS parcel. It is approximately one mile long and connects the Peninsula rail corridor with the Port of San Francisco cargo terminals and rail yards at Piers 80, 92, 94, and 96; it is the only rail line servicing the Port of San Francisco. The Quint Street Lead is jointly owned by Burlington Northern

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75 CHS Consulting Group, *SFPUC Southeast Water Pollution Control Plant 250 MGD New Headworks Facility Project Transportation Impact Study*, October 2016.

Santa Fe (BNSF) Railway and Union Pacific Railroad and it is used intermittently on weekdays to carry bulk materials.

Parking

Parking surveys were conducted during a typical weekday morning (6:00 a.m. to 9:00 a.m.) and midday period (1:00 p.m. and 3:00 p.m.) on Tuesday March 8, 2016 for the area bounded by Custer Avenue to the north, Toland Street to the west, Jerrold Avenue to the south, and Third Street to the east.[76] There are a total of 850 publicly available on-street parking spaces in the study area bounded by Custer Avenue to the north, Toland Street to the west, Jerrold Avenue to the south, and Third Street to the east. These spaces were well utilized with an average occupancy rate of 52 and 70 percent during the morning and midday periods. On-street parking spaces near the SEP Rankin Street gate had 100 percent occupancy along Rankin Street east of Evans Avenue during the morning and afternoon periods, respectively, and 72 and 100 percent along Evans Avenue between I-280 overpass and Rankin Street during the morning and afternoon periods, respectively.

Construction Trip Generation

Project trip generation was estimated based on the number of construction-related vehicle trips needed during each phase of the project. The number of project-generated trips would vary on a daily basis, depending on the construction phase, planned activity, and material delivery needs. Table 5 in Section B.4.2, Construction Methods, shows the average number of workers and truck trips per day that would be generated by the proposed project.

Project construction activities would occur at varying levels of intensity over the duration of the five-year construction period from January 2017 through December 2021, and for 6 months from January 2024 to June 2024. While the highest traffic volume would occur for a one-week period in August 2018, the level of construction traffic outside of this period would be substantially lower for the majority of the time. To provide a conservative and yet reasonable assessment of potential traffic impacts, the total number of construction vehicle trips generated at the 85th percentile was used for this traffic analysis. Using 85th percentile values, it is anticipated that there would be a total of 344[77] daily construction vehicle trips, including 119 trips during the AM peak hour and 101 trips during the PM peak hour.

Construction worker trips. Depending on the phase of construction, the number of workers would vary from 16 to 172 workers a day. The maximum number of worker trips would occur for a one-week period in August 2018, with approximately 344 trips per day. The evaluation of impacts was based on an 85th percentile value of 120 construction workers a day, for a total of 240 trips per day (inbound and outbound).

Hauling truck trips. The number of hauling truck trips (transport of excavated spoil to off-site locations) would vary from 14 to 43 truck trips a day (inbound and outbound) depending on the phase of construction. The maximum number of hauling truck trips would occur for a one-week

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76 Ibid.

77 An 85th percentile value of 362 trips means that during 85 percent of the construction period there would be 862 or fewer trips. Trips would exceed this value only 15 percent of the time.

period in May 2018. The evaluation of impacts was based on an 85th percentile value of 14 hauling truck trips per day (inbound and outbound).

Material and equipment delivery trips. The number of material and equipment delivery trips would vary from 4 to 104 trips a day (inbound and outbound) depending on the phase of construction. The maximum number of delivery trips would occur for a one-week period in August 2018. The evaluation of impacts was based on an 85th percentile value of 86 material and equipment delivery trips per day (inbound and outbound).

Trips between project site and off-site staging areas. Since all truck trips delivering equipment and materials would be first transported to one of the three off-site staging areas, there would be subsequent trips moving this equipment or material from a staging area to the project site. For the purpose of transportation analysis, approximately half of the daily external delivery trips (between staging areas and highways) are assumed for the internal delivery trips between a staging area and the project site. Materials from the BFS adjacent lot would be transported via Davidson Street and Rankin Street, and materials stored at the off-site staging areas would be transported via Amador Street, Third Street, Custer Avenue and Rankin Street. In the event construction worker parking could not be accommodated in the BFS adjacent lot, construction workers would park their vehicles at the off-site staging areas and use a shuttle service between the parking lot and the project site. Assuming a 38-passenger shuttle capacity, the estimated 120 construction workers on a given day would generate a total of 16 daily one-way shuttle trips, including eight trips each during the AM and PM peak hours. A shuttle bus would operate along Amador Street, Third Street, Custer Avenue, and Rankin Street.

Impact TR-1: The proposed project would not conflict with an applicable plan, ordinance, or policy addressing the safety or performance of the circulation system, including roadways, pedestrian and bicycle paths, and mass transit; the proposed project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. (Less than Significant)

Following project implementation, traffic on area roadways would return to conditions that existed prior to construction, and therefore the project would not conflict with an applicable congestion management program. This analysis focuses on construction-related impacts on other aspects of the circulation system, including transit, bicycle lanes, and pedestrian paths.

The proposed project would not permanently eliminate existing or planned alternative transportation facilities such as bicycle lanes, sidewalks, transit stops, and bus routes. The project does not include development of residences and would not induce growth such that new trips are generated, causing a demand for alternative transportation. However, construction could temporarily disrupt traffic circulation, bicycle, pedestrian, and transit facilities, as described below.

Traffic Circulation

During the peak months of construction activity, the proposed project would result in a temporary increase in vehicular traffic traveling to and from the project site and off-site staging areas. For the period of maximum hauling trucks (May 2018), the project would generate about 43 hauling truck

trips per day (inbound and outbound). For the period of maximum material and equipment delivery trips (August 2018), the project would generate approximately 104 trips per day (inbound and outbound). For the period of maximum construction worker trips (August 2018), the project would generate approximately 344 construction worker trips per day. These trips would travel to and from the various staging areas, and between staging areas and the project site.

During construction, the proposed project would affect the traffic circulation along Evans Avenue and Davidson Avenue between Rankin Street and Quint Street, and on Rankin Street between Evans Avenue and Davidson Avenue. The proposed project would temporarily close the sidewalk, parking lane, and one traffic lane on the south side of Evans Avenue between Rankin Street and Quint Street for staging during construction. The remaining three traffic lanes and the northern parking lane of Evans Avenue would be used for two-lane traffic in each direction, with the exception of a 5 month period when this would be reduced to one traffic lane in each direction for the BFS sewer connection construction. Both travel lanes on Rankin Street between Evans Avenue and Davidson Avenue would be closed for up to 9 months for the BFS sewer connection work. As described in Section B.4.1, Construction Staging and Public Right-of-Way, local access on the west side of Rankin Street would be maintained throughout the construction of the sewer line. The southern lane of Davidson Avenue between Rankin Street and Quint Street would be temporarily closed for the BFS sewer connection construction for up to 5 months. One traffic lane would remain open on Davidson Avenue at all times. Existing traffic currently using these roadways could be diverted.

Larger construction vehicles coming from Evans Avenue in the westbound direction would temporarily and intermittently reduce the capacity of local roadways because of their slower movements and larger turning radii. Construction trucks would need to make wide turns at the Rankin Street entrance to the Headworks project site, which could conflict with eastbound traffic along Evans Avenue during peak traffic periods.

As described in Section B.4.7, Traffic Control Plan, the traffic control plan would be consistent with the SFMTA's Blue Book regulations. The traffic control plan would require the use of flaggers, illuminated signs, a temporary stop sign or a combination of these methods to slow approaching traffic (including construction vehicles) during the construction period when construction trucks are making wide turns. In addition, advance warning signs would be installed to advise motorists to use alternate routes, where possible. With the implementation of the traffic control plan, traffic circulation impacts would be temporary and less than significant.

Transit

The proposed project is assumed to generate 120 construction workers per day. The majority of these construction workers are expected to commute by private automobile, either by driving alone or carpooling with coworkers. However, it is reasonable to assume that up to 20 percent (or 24

workers) would choose to travel by transit.[78] The Southeast screenline[79] operates at an average capacity of 67 percent during the PM peak hour. Muni's threshold for identifying transit crowding is a capacity utilization of 85 percent. With the exception of the T-Third light rail line, all four sub-corridors in the project vicinity operate under Muni's 85 percent crowding capacity.

As described above, the proposed project would affect the traffic circulation along Evans Avenue during construction. This change would alter access to the Muni bus stop on the southwest corner of the Evans Avenue and Quint Street intersection. This bus stop serves Muni's 19-Polk line, which operates at 15-minute headways during the peak period. As described in Section B.4.7, , Traffic Control Plan, the traffic control plan for the proposed project would require the contractor to request authorization from SFMTA for a temporary relocation of Muni's 19-Polk bus stop to the east of the Evans Avenue and Quint Street intersection to ensure that service is not disrupted.

As part of improvements proposed under Muni Forward, the SFMTA plans to change the 19-Polk route alignment in the future to eliminate service south of 23rd Street and along Evans Avenue.[80] This segment would instead have transit service provided by the 48 Quintara-24th Street route, which would be realigned in conjunction with the 19-Polk route's service change. When Evans Avenue between Rankin Street and Quint Street would be reduced to one traffic lane in each direction, transit delays could marginally increase for the five month-period, and the bus zone would be substituted with a flag stop on Evans Avenue at Quint Street during this period.[81]

The addition of 24 transit riders during construction would not cause any of the local and regional transit lines to exceed their utilization threshold. The increased transit demand created during project construction would likely be spread over multiple routes, with the majority of workers traveling in the non-peak direction during the PM peak hour. Because the proposed project would not substantially affect the capacity of the local and regional transit lines, and implementation of the traffic control plan would temporarily relocate the bus stop to an alternate location during construction so that it remains accessible, the impacts of the project on transit would be less than significant.

Bicycle Facilities

Construction-related vehicles would use Cesar Chavez Street, Evans Avenue, and Third Street, all of which contain bicycle facilities. Cesar Chavez Street has Class II bike lanes between the I-280

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78 CHS Consulting Group, *SFPUC Southeast Water Pollution Control Plant 250 MGD New Headworks Facility Project Transportation Impact Study*, October 2016.

79 Four screenlines (i.e., Northeast, Northwest, Southeast, and Southwest) have been established to evaluate Muni operations into and out of the greater downtown area. The concept of screenlines is used to describe the magnitude of travel from or to the downtown area and its vicinity, and to compare estimated transit volumes to available capacities for each transit operator. These four established screenlines are hypothetical lines that would be crossed by persons traveling between downtown and its vicinity and other parts of San Francisco and the region. They have been established in San Francisco to analyze potential impacts of projects on Muni service along each screenline and sub-corridors within each screenline. The four sub-corridors in the Southeast screenline include Third Street, Mission, San Bruno/Bayshore, and Other Lines.

80 The timeline for implementing the 19-Polk route alignment change is unknown at this time.

81 CHS Consulting Group, *SFPUC Southeast Water Pollution Control Plant 250 MGD New Headworks Facility Project Transportation Impact Study*, October 2016.

overpass and Third Street. Class III bike routes are also present along Cesar Chavez Street west of the I-280 overpass, Evans Avenue between Cesar Chavez Street and Third Street, and along Third Street south of Cesar Chavez Street. Approximately 75 bicyclists along Cesar Chavez Street and 15 bicyclists along Evans Avenue and Third Street were counted during the AM and PM peak hours.[82]

The proposed project would add the greatest amount of construction-related traffic along Evans Avenue near Rankin Street, with 111 vehicle trips during the AM peak hour and 97 vehicle trips during the PM peak hour. In addition, project implementation would temporarily eliminate parking lanes on both sides of Evans Avenue between Rankin and Quint Streets for the duration of construction, with two additional travel lanes closed for up to 5 months for the BFS sewer connection. Evans Avenue has a Class III bicycle facility (Route 19) with sharrows (shared lane arrows indicating the preferred location for bicycle travel). Although the existing bicycle volumes along Evans Avenue are low, the anticipated increase in construction-related vehicles could create potentially hazardous conditions for bicyclists. As described in Section B.4.7, Traffic Control Plan, flaggers or temporary traffic signals posted at the intersection of Evans Avenue and Rankin Street would facilitate truck turning movements and reduce conflicts with bicyclists on Evans Avenue. Advance warning signs would also inform bicyclists about construction activities and provide alternate routes, such as along the Class II facility on Oakdale Avenue or the Class III facility on Third Street. With the implementation of the Traffic Control Plan, as proposed, bicycle impacts would be temporary and less than significant.

Pedestrian Facilities

Construction of the proposed project would result in a temporary increase in the number of pedestrians on the sidewalks in the vicinity of the SEP and BFS parcel from workers parking their vehicles in the BFS adjacent lot or off-site staging areas. As discussed above, the size of the construction work force would vary over time, ranging up to 172 construction workers per day, with an average of 120 daily construction workers. A shuttle would be provided to transport workers between the off-site parking areas at the Pier 94 and 96 staging areas and the project site with a shuttle stop anticipated at the intersection of Evans Avenue and Rankin Street (see Section B.4.1, Construction Staging and Public Right-of-Way). However, construction workers parking at the BFS adjacent lot would walk to and from the project site, which could generate a substantial amount of pedestrian trips across Evans Avenue between the project site and the BFS adjacent lot if all workers were to park their vehicles in that lot. However, the pedestrian volume in the vicinity of the project site is currently very low. Therefore, the new pedestrian trips generated during project construction could be accommodated on the existing sidewalks or crosswalks without substantially crowding these pedestrian facilities. Nevertheless, the increase in construction-related vehicle trips in the vicinity of the project site could potentially increase hazardous conditions temporarily for pedestrians.

In the case of public streets under SFMTA and SFPW jurisdiction, the SFMTA Blue Book regulations require the implementation of construction safety measures with respect to pedestrians. Construction activities that require use of any portion of the adjacent sidewalk are

82 Collected on Wednesday, January 27, 2016. CHS Consulting Group, *SFPUC Southeast Water Pollution Control Plant 250 MGD New Headworks Facility Project Transportation Impact Study*, October 2016.

required to maintain pedestrian access for all users, and where complete sidewalk closures are required, alternative pedestrian access routes and detours are required to be implemented with adequate signage. As described in Section B.4.1, Construction Staging and Public Right-of-Way, the sidewalk, parking lane, and one traffic lane on the south side of Evans Avenue between Rankin and Quint Streets would be temporarily closed and used as staging areas for the duration of construction. The remaining three traffic lanes and the opposite-side parking lane would be used for two-lane traffic in each direction, with the exception of a 5-month period when this would be reduced to one lane of traffic in each direction. During the 5-month period, the sidewalk, parking lane, and two travel lanes on the north side of Evans Avenue between Rankin Street and Quint Street would be temporarily closed. The closures along the north side of Evans Avenue would occur prior to the closures of the south side. Therefore, pedestrians would have access along Evans Avenue between Phelps Street and Rankin Street at all times.

The sidewalk on the east side of Rankin Street between Evans Avenue and Davidson Avenue would be closed for a 9-month period for the sewer connection work, but the sidewalk on the west side would be accessible. As described in Section B.4.1, Construction Staging and Public Right-of-Way, pedestrian access along Evans Avenue and Rankin Street would be maintained during construction. In addition, as part of the project's proposed traffic control plan, a temporary signalized crossing would be installed at the intersection of Evans Avenue and Quint Street during construction to allow construction workers to cross to the SEP from the BFS adjacent lot (see Section B.4.7, Traffic Control Plan). Flaggers or temporary traffic signals would be posted at the intersection of Evans Avenue and Rankin Street to facilitate truck turning movements and reduce conflicts with bicyclists on Evans Avenue as part of the traffic control plan. Therefore, with the implementation of the traffic control plan, as proposed, pedestrian impacts would be temporary and less than significant.

Freight Rail

The BFS adjacent parcel would be used for construction staging and parking. As shown in Figure 11, the construction staging and parking would not be located such that it would encroach upon or interfere with the operations of the rail spur. In addition, as described in Section B.4.7, Traffic Control Plan, the traffic control plan would require SFPUC to file the necessary permit and coordinate with the Union Pacific Railway to ensure safety of roadway users. Therefore, with the implementation of the traffic control plan, as proposed, impacts to the freight rail operations would be less than significant.

Parking Conditions

The proposed project would entail an average on-site work force of approximately 120 construction workers a day. The number of parking spaces required to accommodate 120 construction workers would be 93 parking spaces assuming 29 percent of the workers carpool.[83] Construction worker parking spaces would be provided at the BFS adjacent lot, Pier 94 Backlands, Pier 94, and/or Pier

[83] CHS Consulting Group, *SFPUC Southeast Water Pollution Control Plant 250 MGD New Headworks Facility Project Transportation Impact Study*, October 2016.

96. In the worst-case scenario, all construction workers would be allowed to park in the BFS adjacent lot. The BFS adjacent lot is approximately 95,000 square feet which could accommodate up to 315 vehicle parking spaces assuming about 300 square feet per vehicle.[84] Therefore, a sufficient number of parking spaces would be available within the BFS adjacent lot. All parking and staging would be contained within the off-site staging areas and no spillover would occur onto public roadways. In the event construction workers park at the off-site staging areas, a shuttle service would be provided to transport construction workers between the off-site staging areas and the project site (see Section B.4.1, Construction Staging and Public Right-of-Way). During construction, the parking lanes on both sides of Evans Avenue between Rankin Street and Quint Street would be temporarily closed and no parking would be allowed on this segment of Evans Avenue for the duration of construction. This segment of Evans Avenue currently provides a total of 51 on-street parking spaces, of which approximately 10 and 18 percent are utilized during the AM and midday periods, respectively.[85] The proposed project would displace these on-street parking spaces during construction. However, according to the parking survey data, there are approximately 285 on-street parking spaces in the project vicinity which could absorb the displaced on-street parking demand along Evans Avenue.

After the completion of construction, the potential installation of bulb-outs along Evans Avenue between Rankin Street and Quint Street as part of the Traffic Control Plan (see Section B.4.7) would remove approximately 15 on-street parking spaces. Based on parking survey data, the existing parking demand is approximately five spaces along this segment of Evans Avenue and there are a sufficient number of available parking spaces to absorb the loss.[86] Therefore, the proposed bulb outs would not create a substantial parking shortfall in the area once the proposed project is operational.

In summary, although the proposed project would increase traffic on adjacent roadways, the duration of these effects would be temporary and limited to the construction period. Impacts on bicycle, pedestrian, and transit facilities would be less than significant with the proposed preparation and implementation of a traffic control plan, as described in Section B.4.7, Traffic Control Plan, in order to comply with SFMTA Blue Book regulations for construction within city streets, which would also serve to reduce conflicts with various modes of travel in the project vicinity.

Impact TR-2: The proposed project would not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses. (Less than Significant)

The proposed project would temporarily change the configuration of intersections and roadways within the project area during construction. Once construction is complete, the project area would return to its existing transportation configuration, and therefore the project would not result in hazardous design features. Construction could cause temporary traffic safety hazards. Construction vehicles could be considered a safety hazard, resulting in an increase in conflicts with

84 Ibid.
85 Ibid.
86 Ibid.

local vehicles, bicyclists, and pedestrians on adjacent public roadways. Larger construction vehicles such as haul trucks would temporarily and intermittently reduce the capacity of local roadways because of their slower movements and larger turning radii. Construction trucks would need to make wide turns at the Rankin Street entrance, which could conflict with traffic during peak traffic periods.

The proposed project would temporarily close the parking lane and lane of traffic to through traffic on Evans Avenue between Rankin Street and Quint Street for the duration of project construction. The remaining three lanes of traffic and other parking lane would be used for two-lane traffic in each direction. Although the project would not reduce roadway capacity, this shift in travel lanes on Evans Avenue could result in an increase in traffic hazards due to the constrained roadway that would be shared by vehicles and bicyclists. A Class III bicycle route with sharrows currently runs along Evans Avenue.

As described in Section B.4.7, Traffic Control Plan, a traffic control plan would be prepared and implemented as part of the project to reduce traffic safety hazards. The plan would require posting of flaggers or temporary traffic signals at the intersection of Evans Avenue and Rankin Street to facilitate truck turning movements, minimize vehicle delays, and reduce conflicts. In addition, advance warning signs ("Road Work Ahead") would be posted on Evans Avenue to the west of Rankin Street and east of Quint Street, to inform the public about the lane shift. With implementation of the traffic control plan, safety hazards would be less than significant.

Impact TR-3: The proposed project would not result in inadequate emergency access. (Less than Significant)

The nearest fire station to the project site is at 1415 Evans Avenue (Station No. 49), and the nearest police station is at 201 Williams Avenue. The street network serving the project area currently accommodates the movements of emergency vehicles that travel to the project site. In the event of an emergency, vehicles could access the project site in the same manner as occurs under existing conditions, from Evans Avenue immediately adjacent to the site.

The proposed project would have temporary impacts on traffic flow and lane configurations near the project site. As described in Section B.4.1, Construction Staging and Public Right-of-Way, the proposed project would require a 9-month closure of Rankin Street between Evans Avenue and Davidson Avenue to through traffic, and closure of travel lanes on Evans Avenue between Rankin Street and Quint Street. The traffic control plan would require notifying administrators of the nearest police and fire stations and hospitals in advance (specifying the timing, location and duration of construction activities, lane closures, and alternative routes), and therefore emergency access would not be disrupted. Furthermore, although the proposed project would temporarily generate additional traffic, such an increase in vehicles would not impede or hinder the movement of emergency vehicles in the project area because California law requires that drivers yield the right-of-way to emergency vehicles and remain stopped until the emergency vehicle passes (California Vehicle Code Section 21806). Therefore, through implementation of the traffic control plan, as proposed, impacts on emergency access would be less than significant.

Impact C-TR: The proposed project, in combination with past, present, and probable future projects, would not contribute considerably to adverse cumulative transportation conditions. (Less than Significant)

The cumulative analysis considers the construction-phase traffic of the proposed project and cumulative projects where construction schedules would overlap. The geographic scope for potential cumulative impacts includes roadways where the cumulative projects have the potential for overlapping effects with the proposed project (i.e., use of same roadways). The proposed project would overlap with the following project numbers from Table 7: 1 (Biosolids Digester Facilities Project), 4 (SEP Existing Digester Gas Handling Improvements), 5 (SEP 521 Replacement/522 Disinfection Upgrade), 6 (SEP Power Feed and Primary Switchgear Upgrades, 7 (SEP Primary/Secondary Clarifier Upgrades), 8 (SEP Seismic Reliability and Condition Assessment, 10 (SEP Oxygen Generation Plant Replacement), 11 (SEP Repair and Replacement Projects), 14 (Central Bayside System Improvement Project), 17 (Kansas and Marin Streets Sewer Improvements), 19 (Southeast Outfall Underwater Crossing Replacement), 23 (Quint-Jerrold Connector Road), 25 (1995 Evans Avenue), 34 (Peninsula Corridor Electrification Project), and 37 (Marin Street Sewer Replacement Project), and various traffic calming and signal upgrades for SFMTA.

Cumulative traffic volumes would fluctuate due to changes in shifts and construction schedules. However, for purposes of the cumulative analysis, the trip generation during the highest volume period is assumed. The highest volume of construction traffic would occur in July 2019, with 1,441 daily trips from the proposed project and cumulative projects.[87] The proposed project and cumulative projects would result in construction traffic that overlaps on Quint Street, Evans Avenue, Davidson Avenue, and Rankin Street and could decrease the safety of public roadways for vehicles, bicyclists, and pedestrians. However, with implementation of the Traffic Control Plan (described in Section B.4.7), the proposed project and cumulative project trips would not result in a cumulatively significant transportation and circulation impact during construction. As described in Section B, Project Description, and in the discussions above for Impact TR-1 through TR-3, during construction, the proposed project would require temporary closures of the sidewalk, parking lane, and traffic lanes on Evans Avenue. The addition of the project construction trips and cumulative project volumes would potentially increase traffic volumes on Evans Avenue by approximately 750 vehicles during the AM peak hour and 590 vehicle trips during the PM peak hour.[88] The increase in traffic would be noticeable, however the total traffic volumes would be within the carrying capacity of Evans Avenue, provided there are two travel lanes in each direction, and the increase would not result in substantial traffic hazards.[89] As previously described, Evans Avenue between Rankin Street and Quint Street would be reduced to one lane of travel in each direction for a 5 month period, in which cumulative traffic volumes on Evans Avenue would exceed the roadway capacity and could lead to traffic hazards and potential conflicts.

As described in Section B.4.7, Traffic Control Plan, the project proposes to implement a traffic control plan consistent with SFMTA Blue Book regulations that would help maintain the safety of public streets for vehicles, bicyclists, pedestrians, transit, and emergency vehicles. In addition to the project-

87 Ibid.
88 Ibid.
89 Ibid.

specific traffic control plan, and as described in Section B.4.6 (Program Construction Manager), given the multitude of planned projects and ongoing operations at the SEP, the SFPUC has formed a Site Logistics Committee. This committee works with program managers, project managers, and SEP operations staff to establish and update pre-construction plans for coordinated construction staging, parking, project interfaces, and traffic control. A Program Construction Manager would be hired by the SFPUC prior to the start of construction of major SEP projects (e.g., the proposed project and the Biosolids Digester Facilities Project) and would manage implementation of these plans and lead coordination efforts between projects and SEP operations through construction. The Program Construction Manager would also be responsible for coordinating with the project teams to update the SFMTA as needed to address local traffic, transit, bicycle, and pedestrian issues. Therefore, construction-related project impacts on circulation, traffic safety, transit, pedestrians, bicyclists, and emergency vehicle access combined with the impacts of other cumulative projects, would result in a less-than-significant cumulative construction-related impact.

Overall, the proposed project's operations, in combination with past, present, and probable future projects, would not substantially contribute to adverse cumulative transportation conditions in the area. Operations and maintenance activities for the new Headworks Facility would be similar to existing conditions, and would not contribute to cumulative increases in travel demand. As a result, the proposed project's operational impacts on transit, pedestrians, bicyclists, and emergency vehicle access in combination with past, present and probable future development, would result in less-than-significant cumulative operations-related impacts.

E.6. NOISE

Topics:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Not Applicable
6. NOISE—Would the project:					
a) Result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐	☐
b) Result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐	☐
c) Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐	☐
d) Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐	☐
e) For a project located within 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?	☐	☐	☐	☐	☒
f) For a project located in the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☐	☒
g) Be substantially affected by existing noise levels?	☐	☐	☐	☐	☒

The project site is not located within an airport land use plan area, within two miles of a public airport, or in the vicinity of a private airstrip. The proposed project is a wastewater utility project and would not be affected by existing noise levels. Therefore, Topics E.6(e), E.6(f), and E.6(g) are not applicable and are not discussed further.

E.6.1. Setting

Existing Noise Levels at SEP and Nearby Sensitive Receptor

The project site is located in an industrial area with various noise sources in the vicinity, including vehicle traffic on I-280 (approximately 700 feet west), traffic along adjacent roadways, and operation of a scrap metal recycler to the west (less than 100 feet from the project site). Intermittent noise sources include Caltrain approximately 550 feet to the west, T-Third Street light rail line approximately 1,400 feet to the east along Third Street, and a railroad track spur that runs through the BFS parcel.

Noise sensitive receptors are generally considered to include hospitals, skilled nursing/convalescent care facilities, schools, daycares, churches, libraries, and residences. The nearest noise adjacent sensitive receptor with a direct line of sight to the SEP is a residence at 1700 Kirkwood Avenue, about 1,600 feet from the center of the project site. There are residences on the corner of Hudson and Newhall that are 1,550 feet from the edge of the project site, but noise levels at this location from within the project site are attenuated by intervening buildings.

A survey of existing noise levels was performed between September 14 and 20, 2015, at several locations around the perimeter of the SEP, as shown in **Figure 15**, to determine the ambient noise level in the vicinity of the SEP.[90] The long-term (LT) noise measurement results are summarized in **Table 8** and show the average daytime and nighttime noise levels in L_{eq} and L_{90}. The noise levels measured at LT-A (521 Evans Avenue) represent an arterial road in an industrial portion of the project area; measurement location LT-B is the visitor parking lot on Phelps Street, which is a lightly traveled road in an urban residential area. Noise sources include vehicles on the freeway, trucks, buses, and motorcycles. At LT-C (Rankin Street gate), truck passbys and other industrial noises generate a fairly constant level, but the Rankin Street gate area is set back from the road and quieter than LT-A; LT-C is also exposed to noise from the freight and commuter trains. LT- D (secondary sedimentation tanks) is set back from Phelps Street and partially shielded, showing lower levels of noise near the secondary sedimentation tanks.

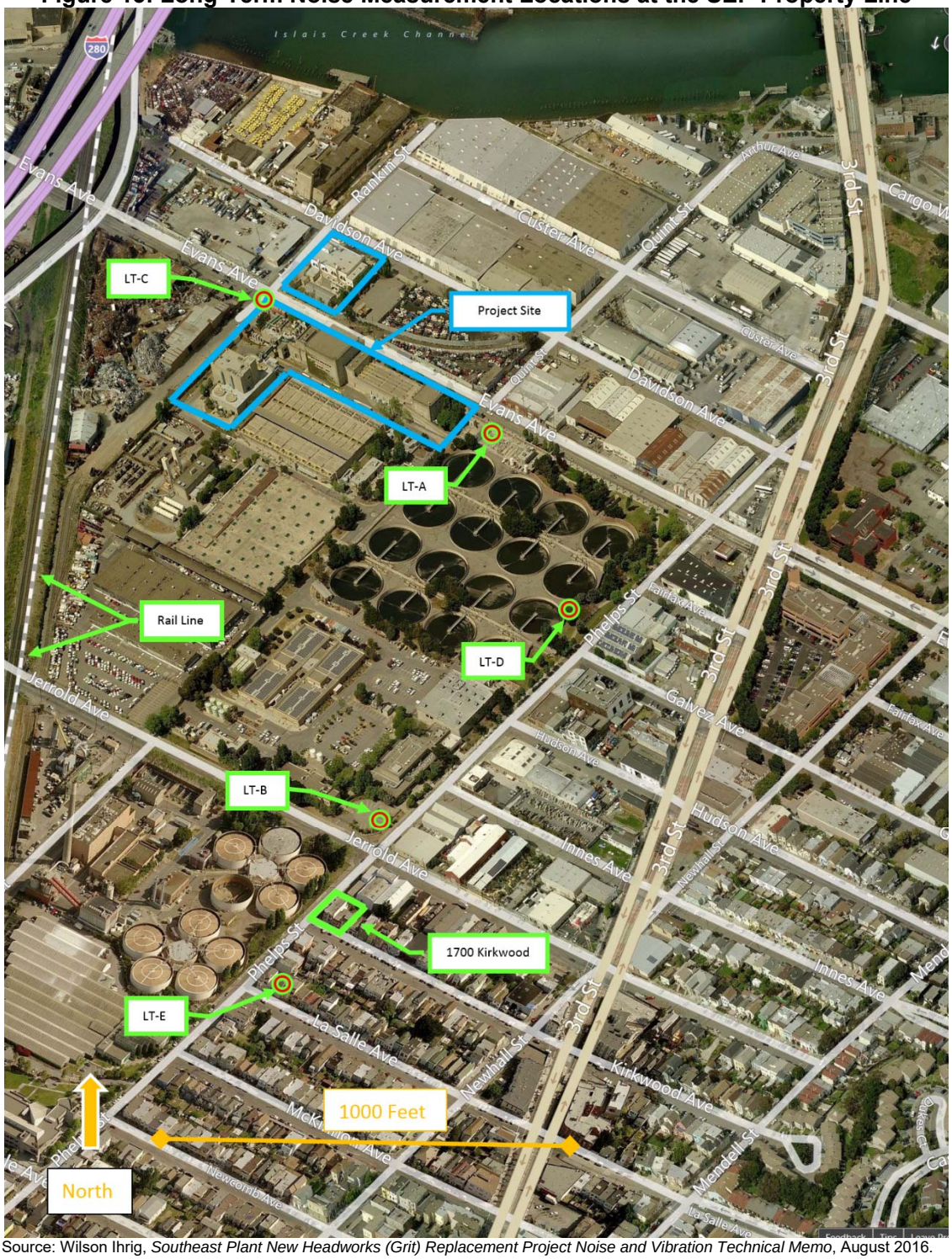
TABLE 8: SUMMARY OF NOISE MONITORING AND AMBIENT NOISE LEVELS

Location Number	Location	Noise Level (dBA)[1,2,3]
LT-A	521 Evans Avenue	Average Daytime (7 a.m. to 8 p.m.) L_{eq}: 70–72 Average Nighttime (8 p.m. to 7 a.m.) L_{eq}: 68–70 Lowest L_{90} Measured: 66
LT-B	Visitor Parking Lot on Phelps Street	Average Daytime (7 a.m. to 8 p.m.) L_{eq}: 63–64 Average Nighttime (8 p.m. to 7 a.m.) L_{eq}: 60 Lowest L_{90} Measured:54
LT-C	Rankin Street Gate	Average Daytime (7 a.m. to 8 p.m.) L_{eq}: 63–66 Average Nighttime (8 p.m. to 7 a.m.) L_{eq}: 62–67 Lowest L_{90} Measured:59
LT-D	Sedimentation Tanks (Phelps Street)	Average Daytime (7 a.m. to 8 p.m.) L_{eq}: 59–61 Average Nighttime (8 p.m. to 7 a.m.) L_{eq}: 61 Lowest L_{90} Measured:58
LT-E	1700 Kirkwood Avenue[4]	Average Daytime (7 a.m. to 8 p.m.) L_{eq}: 65–68 Average Nighttime (8 p.m. to 7 a.m.) L_{eq}: 63–65 Lowest L_{90} Measured:54

Source: Vibro-Acoustic Consultants, *Noise Data for BDFP EIR Team – SEP* Fenceline, September 2015.
Notes:
1. The dBA (L_{eq}) ranges for daytime and nighttime averages include weekday and weekend measurements.
2. L_{90} represents the lowest measurement at the location.
3. L_{eq} and L_{90} noise levels were calculated by Wilson Ihrig based on noise measurement data from Vigro-Acoustic Consultants.
4. Represents the nearest residential area, and is the only monitoring location at a sensitive receptor.

90 Vibro-Acoustic Consultants, *Noise Data for BDFP EIR Team – SEP Fenceline*, September 2015.

Figure 15: Long-Term Noise Measurement Locations at the SEP Property Line



Source: Wilson Ihrig, *Southeast Plant New Headworks (Grit) Replacement Project Noise and Vibration Technical Memo*, August 2016.

The noise measurements for LT-A through LT-D were used to characterize the ambient noise conditions on Evans Avenue and Phelps Street. Existing noise levels along the northern boundary of the SEP on Evans Avenue by the project site (LT-A and LT-C) range from 63 to 72 dBA (Leq) during the daytime hours (7 a.m. to 8 p.m.) and 62 to 70 dBA (Leq) during the nighttime hours (8 p.m. to 7 a.m.). The existing noise levels along the eastern boundary of the SEP on Phelps Street (LT-B and LT-D) range from 60 to 64 dBA (Leq) during the daytime hours and 60 to 62 dBA (Leq) during the nighttime hours. As shown in Table 8, nighttime levels were generally 2 dBA lower than daytime levels.

The noise levels measured at LT-E (1700 Kirkwood Avenue) represent the nearest area of residences. No hospitals, skilled nursing/convalescent care facilities, schools, daycares, churches, or libraries are adjacent to the project site.

Ambient Noise Levels at Pier 94 Backlands, Pier 94, and Pier 96

Noise measurements were not taken at the off-site staging areas. However, the background traffic noise level map prepared by the SFDPH was used to determine the general background noise level in this vicinity. The background noise level map shows that traffic noise levels in the off-site staging areas range from 60 to above 70 dBA (L_{dn}).[91] The traffic noise level decreases to 50–55 dBA (L_{dn}) towards Pier 96.[92] There are no sensitive receptors within 1,000 feet of the off-site staging areas.

Vibration Sources and Vibration Sensitive Structures Near the SEP

The Caltrain railroad tracks, approximately 300 feet west of the project site, are an existing source of vibration. The spur tracks that run through the BFS parcel and adjacent to the project site (as close as 30 feet) also generate vibration when materials are being transported.

Potential vibration-sensitive structures include other SEP buildings that are not part of the proposed project, neighboring buildings and railroad tracks. The City's Central Shops A and B, SEP 040, and SEP 041 are the nearest historic structures to the project site. The Central Shops A and B buildings are steel frame structures on concrete apron walls, approximately 760 feet from the project site. SEP 040 and SEP 041 are constructed of concrete and approximately 730 feet from the project site.

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91 City and County of San Francisco Planning Department, *San Francisco General Plan Environmental Protection Element, Map 1: Background Noise Levels – 2009*. Available online at http://sf-planning.org/ftp/General_Plan/images/I6.environmental/ENV_Map1_Background_Noise%20Levels.pdf, accessed on May 3, 2016.

92 Ibid.

Impact NO-1: The proposed project would not result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. (Less than Significant)

Construction Noise Thresholds

Construction noise is regulated by the San Francisco Noise Ordinance (Article 29 of the San Francisco Police Code). The following sections of the Noise Ordinance are used to determine the significance of construction-related noise increases:

- **Daytime Construction** is evaluated against Section 2907 of the Police Code, which applies to noise generated by any construction equipment on a permitted construction site, except for impact tools such as jackhammers (provided that they are equipped with acoustically attenuating shields or shrouds). For non-impact equipment, powered construction equipment is limited to a noise level of 80 dBA at a distance of 100 feet from the equipment.

- **Nighttime Construction** is evaluated against Section 2908 and 2909(d) of the Police Code. Section 2908 of the Police Code prohibits construction work between 8:00 p.m. and 7:00 a.m. that generates noise exceeding the ambient noise level by 5 dBA at the closest property plane from the two loudest pieces of equipment,[93] unless a special permit is issued by the Director of the Department of Building Inspection or Director of Public Works. For purposes of this analysis, the closest property planes for the proposed project would be Evans Avenue and Phelps Street.

Section 2909(d) of the Police Code prohibits noise measured inside any sleeping/living room with windows open on residential property from exceeding 45 dBA between 10 p.m. and 7 a.m. For the purposes of evaluating nighttime construction noise impacts for Section 2909(d), an equivalent exterior noise threshold of 60 dBA for nighttime is used, based on the assumption that there is a 15 dBA noise reduction from the exterior to the interior with windows open.

Daytime Construction Impacts

The types of construction equipment for the proposed project and noise levels at 100 feet are shown in **Table 9**. Non-impact equipment would generate maximum noise levels ranging from 67 to 79 dBA at a distance of 100 feet from the source. As shown in Table 9, the non-impact construction equipment would be consistent with the threshold of 80 dBA at a 100-foot distance (Section 2907). Impact equipment would produce noise levels greater than 80 dBA, however impact equipment and tools are exempt from Section 2907 noise limits. Project construction activities would comply with Section 2907 of the Noise Ordinance by ensuring that impact tools are adequately muffled and by limiting daytime construction activities that produce noise to allowable hours. As a result, noise impacts from daytime construction would be less than significant.

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93 Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, May 2006. The FTA methodology calls for estimating a combined noise level from simultaneous operation of the two noisiest pieces of equipment expected to be used in each construction phase. This method applies usage factors to each piece of equipment analyzed to account for the time that the equipment is in use over the specified time period.

TABLE 9: TYPICAL NOISE LEVELS FROM CONSTRUCTION EQUIPMENT

Equipment	FHWA Equipment Type	Maximum Sound Pressure Level SPL at 100 feet (dBA)
Mini Backhoe Cat 301	Tractor	78
Hydraulic Excavator 250	Excavator	79
Hydraulic Excavator 400	Excavator	79
Backhoe/Loader Cat 436	Backhoe	74
Slurry Separation Plant	Slurry Plant	72
10-foot Digger Shield	Auger Drill Rig	79
Bobcat Loader	Tractor	78
Wheel Loader	Front-End Loader	74
Tower Crane	Crane	79
Crawler Crane, 100 ton	Crane	79
Hydraulic Crane, 40 ton	Crane	79
Forklift, 4 ton	Tractor	78
Concrete Vibrator	Vibratory Concrete Mixer	74
Grout Pump, Mixer	Concrete Pump Truck	76
Grout Plant (12 cubic yards)	Concrete Batch Plant	77
Spader	Pneumatic Tools	79
Jackleg drill	Horizontal Boring Hydraulic Jack	74
Compactor BW9AS	Compactor (ground)	74
Compressor, Trailer	Compressor (air)	74
Compressor, Stationary	Compressor (air)	74
Generator, skid-mounted 725 kilowatt	Generator	76
Submersible Pump, 850 gallons per minute	Pumps	71
Ventilation Fan, 40 horsepower	Ventilation Fan	79
Ventilation Fan, 100 horsepower	Ventilation Fan	79
Welder 400A, Trailer	Welder / Torch	67
Water Treatment Plant	Pumps	71
Vibratory Sheet Pile Driver	Vibratory Pile Driver	**89**[1]
Hoe-Ram Attachment	Mounted Impact Hammer (hoe ram)	**84**[1]
Clamshell, 5cy	Clam Shovel (dropping)	**87**[1]

Source: Federal Highway Administration, *Roadway Construction Model – User's Guide,* January 2016.
Note:
1. **Bold** numbers represent values over the 80 dBA at 100-foot maximum distance, all of which are Impact equipment

Nighttime Construction Impacts

Construction would typically occur between 7 a.m. and 8 p.m. Monday through Friday. However, weekend and nighttime work may be needed for critical facility connections. Nighttime construction levels were calculated from the two loudest pieces of equipment for the demolition, excavation, and construction phases of the project.

To determine whether nighttime construction would be consistent with Section 2908 of the Police Code, noise levels at the SEP property planes were calculated. **Table 10** shows that nighttime construction noise levels would not exceed the Ambient L_{eq} plus 5 dBA limit at two of the planes along Phelps Street. Nighttime construction levels would exceed the Ambient L_{eq} plus 5 dBA limit at the property plane on Evans Avenue. The proposed project would therefore require a special permit to comply with Section 2908 of the Police Code.

TABLE 10: POTENTIAL CONSTRUCTION NOISE LEVELS DURING EVENING OR NIGHTTIME CONSTRUCTION AT THE SEP PROPERTY PLANE (DBA, HOURLY L_{EQ})

Location or Property Plane	Distance from Construction Site	Evening and Nighttime Construction Noise Limit (Ambient L_{eq} + 5 dBA)	Estimated Construction Noise Adjusted for Distance (dBA, L_{eq})		
			Demolition	Excavation	Construction
SEP at Evans Avenue	60 feet	73[1]	**84**	**86**	**87**
SEP at Phelps Street and Evans Avenue	1,000 feet	73[1]	59	61	62
SEP at Phelps Street and Jerrold Avenue	1,500 feet	65[2]	56	58	59

Source: Wilson Ihrig, *Southeast Plant New Headworks (Grit) Replacement Project Noise and Vibration Technical Memo*, August 2016.
Notes:
Bold numbers represent values over noise limit.
1. Based on 68 L_{eq} nighttime ambient conditions at LT-A.
2. Based on 60 L_{eq} nighttime ambient conditions at LT-B.

To determine whether nighttime construction would be consistent with Section 2909(d) of the Police Code, noise levels at the nearest sensitive receptors were calculated from two of the loudest pieces of equipment for the demolition, excavation, and construction phases of the project. The noise levels for each phase were adjusted for distance to the sensitive receptors. As shown in Table 11, nighttime construction levels would not exceed the Section 2909(d) limits of 60 dBA for exterior nighttime noise at the sensitive receptors. As a result, nighttime construction of the proposed project would comply with Section 2909(d) of the Police Code and impacts would be less than significant.

TABLE 11: POTENTIAL EXTERIOR CONSTRUCTION NOISE LEVELS DURING EVENING OR NIGHTTIME CONSTRUCTION AT THE NEAREST SENSITIVE RECEPTOR (DBA, HOURLY L_{EQ})

Location	Estimated Exterior Construction Noise Adjusted for Distance (dBA, L_{eq})			Evening and Nighttime Construction Exterior Noise Limit	Exceeds Noise Ordinance Limit?
	Demolition	Excavation	Construction		
1700 Kirkwood Ave. (Residence)	55	57	58	60	No
701 Newhall Street (Residence)	55	57	59	60	No

Source: Wilson Ihrig, *Southeast Plant New Headworks (Grit) Replacement Project Noise and Vibration Technical Memo*, August 2016.
Notes:
Bold numbers represent values over noise limit.

Impact NO-2: The proposed project would not result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project. (Less than Significant)

To determine whether the proposed project would cause an impact with respect to temporary increases in noise levels in the project vicinity above levels existing without the project, a threshold increase of 10 dBA over existing ambient noise levels at sensitive receptors is considered a substantial temporary increase in noise levels, in this case, for both daytime and nighttime; such

an increase is considered as a perceived doubling of loudness. [94,95]The FTA guidelines calls for estimating a combined noise level from simultaneous operation of the two noisiest pieces of equipment expected to be used in each construction phase. This method applies usage factors to each piece of equipment analyzed to account for the time that the equipment is in use over the specified time period. FTA guidelines also recommend threshold levels, whereby construction-related noise levels over 90 dBA (L_{eq}) at residential uses and 100 dBA (L_{eq}) at commercial/industrial uses are considered to be impacts. The FTA-recommended threshold levels are presented for informational purposes to evaluate the use of impact tools and equipment used simultaneously.[96]

Project Site

Noise impacts from project-related construction activities are a function of the level of noise generated by individual pieces of construction equipment, the amount of equipment operating at any given time, the distance and sensitivities of nearby land uses, the presence of noise barriers or other structures that provide acoustical shielding, and the timing and duration of the noise-generating activities. Project construction would occur between 2017 and 2021 and would typically occur between 7 a.m. and 8 p.m. Monday through Friday. However, as noted above, nighttime and weekend work may be needed for critical facility connections.

Construction noise would result from operation of vehicles and equipment during site preparation, demolition, and construction of the new Headworks Facility. These activities would result in temporary noise level increases in excess of ambient levels. Table 12 shows the maximum combined noise levels from two of the loudest pieces of equipment during each phase and the noise level at each property plane. Table 13 shows the existing ambient noise levels, maximum combined noise levels from two of the loudest pieces of equipment during each phase, and the noise level at the nearest sensitive receptor attenuated for distance. The calculations are conservative and do not take into account the shielding effect from perimeter walls and buildings.[97]

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94 For analytical consistency, the proposed project uses the same thresholds as the Biosolids Digester Facility Project EIR (Case No. 2015-000644ENV) given that their construction timeframes would overlap and would be within the SEP.

95 Federal Highway Administration, *Highway Traffic Noise Analysis and Abatement Policy and Guidance, Noise Fundamentals,* July 2011.

96 Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, May 2006.

97 Wilson Ihrig, *Southeast Plant New Headworks (Grit) Replacement Project Noise and Vibration Technical Memo*, August 2016.

TABLE 12: POTENTIAL MAXIMUM COMBINED NOISE LEVELS FROM PROJECT CONSTRUCTION ACTIVITIES AT PROPERTY PLANES

Location or Property Plane	Phase	Equipment	L_{max} (dBA) at 50 feet	Total L_{eq} at Property Plane During Construction
SEP at Evans Avenue	Demolition	Mounted Impact Hammer (hoe ram)	90	84
		Excavator	85	
	Excavation	Clam Shovel (dropping)	93	86
		Excavator	85	
	Construction	Vibratory Pile Driver	95	87
		Crane	85	
SEP at Phelps Street and Evans Avenue	Demolition	Mounted Impact Hammer (hoe ram)	90	59
		Excavator	85	
	Excavation	Clam Shovel (dropping)	93	61
		Excavator	85	
	Construction	Vibratory Pile Driver	95	62
		Crane	85	
SEP at Phelps Street and Jerrold Avenue	Demolition	Mounted Impact Hammer (hoe ram)	90	56
		Excavator	85	
	Excavation	Clam Shovel (dropping)	93	58
		Excavator	85	
	Construction	Vibratory Pile Driver	95	59
		Crane	85	

Source: Wilson Ihrig, *Southeast Plant New Headworks (Grit) Replacement Project Noise and Vibration Technical Memo*, August 2016.

TABLE 13: POTENTIAL MAXIMUM COMBINED NOISE LEVELS FROM PROJECT CONSTRUCTION AT THE NEAREST SENSITIVE RECEPTORS (DBA, HOURLY L_{EQ})

Location	L_{eq} Daytime Ambient Noise Level	L_{eq} Nighttime Ambient Noise Level	Estimated Construction Noise Adjusted for Distance (dBA, L_{eq})			Daytime Substantial Temporary Noise Increase Limit (Daytime Ambient L_{eq} + 10 dBA)	Nighttime Substantial Temporary Noise Increase Limit (Nighttime Ambient L_{eq} + 10 dBA)	Exceeds Limit?
			Demolition	Excavation	Construction			
1700 Kirkwood Ave. (Residence)	65[1]	63[3]	55	57	58	75	73	No
701 Newhall Street (Residence)	63[2]	60[4]	55	57	59	73	70	No

Source: Wilson Ihrig, *Southeast Plant New Headworks (Grit) Replacement Project Noise and Vibration Technical Memo*, August 2016.
Notes:
1. Daytime ambient from Location LT-E
2. Daytime ambient from Location LT-B
3. Nighttime ambient from Location LT-E
4. Nighttime ambient from Location LT-B

As shown in Table 13, the maximum instantaneous noise levels during construction would range between 90 and 95 dBA L_{max} at a distance of 50 feet from the mounted impact hammer, clam shovel (dropping), and the vibratory pile driver. The combined noise levels along Evans Avenue from

construction activities would range between 84 and 87 dBA L_{eq}, and between 56 to 62 dBA L_{eq} along Phelps Street.

There are no sensitive receptors along Evans Avenue, but construction noise may be noticeable to nearby commercial and industrial uses where the closest property is 300 feet from the Evans Avenue property plane. Although construction activities could increase noise levels along Evans Avenue, the noise impact would be less than significant because the noise levels would not exceed the FTA threshold of 100 dBA for commercial/industrial land use.

As shown in Table 13, the estimated construction noise at the nearest sensitive receptors would not result in a 10 dBA increase over existing ambient noise levels. Therefore, the proposed project would not result in a substantial temporary daytime or nighttime increase in noise levels at the sensitive receptors. As a result, this impact would be less than significant.

Off-site Staging Areas

Pier 94 Backlands, Pier 94, and Pier 96 may be used for equipment and materials storage, and construction worker parking if necessary. The noise generated from this area during construction would be associated with trucks and equipment movement. There could be temporary increases in noise levels depending on the activity (e.g., delivery and unloading of equipment and materials). As previously described, there are no sensitive receptors within 1,000 feet of the off-site staging areas. Therefore, construction activities would have a less-than-significant impact relative to noise.

Off-Site Truck Traffic

Most construction-related haul truck traffic on off-site roads would be generated in 2018 when demolition debris as well as excavated soils would be transported off-site. Demolition of existing structures would generate approximately 4,366 truckloads of demolition debris from October 2017 through March 2018 and January through April 2020. Most site excavation would occur over about five months with generally no overlap with demolition-related haul truck traffic, with the exception of one month (March 2018) when the existing SEP 011 headworks would be undergoing demolition, and excavation would be occurring for the BFS improvements. At the peak construction period, up to a maximum of 104 equipment/material delivery truck trips per day and 43 haul truck trips per day would occur (inbound and outbound). During the remainder of project construction, lower daily truck trips would occur, ranging between 4 and 104 equipment/delivery truck trips and 14 to 43 haul truck trips. Construction-related truck trips generated during the estimated 5 ½-year project construction duration would be required to travel on designated truck routes (i.e., Evans Avenue, Third Street [between Cesar Chavez Street and Evans Avenue], and Cesar Chavez Street for regional access to the I-280 and U.S. 101 freeways), minimizing truck traffic in residential areas.

Previously, trucks associated with current SEP operations traveled on Silver Avenue (residential uses) and Quint Street to the south and Jerrold Avenue to the west. After the Quint Street Bridge was closed in 2015 (unrelated to project construction), delivery trucks now utilize U.S. 101, Industrial Street, Oakdale Avenue, Toland Street, and Jerrold Avenue to access the SEP. During project construction, delivery trucks related to SEP operations would use Evans Avenue and Cesar

Chavez Street to access U.S. 101 and I-280 and would not affect any sensitive receptors. As a result, off-site construction-related traffic noise increases would be less than significant.

Impact NO-3: The proposed project would not result in exposure of persons to or generation of excessive groundborne vibration and groundborne noise levels. (Less than Significant)

The CCSF regulations do not address vibration effects or provide numerical thresholds for determining when groundborne vibration impacts are considered significant. The analysis uses peak particle velocity (PPV) thresholds from the California Department of Transportation (Caltrans) to determine whether the proposed project's construction would impact other SEP buildings or neighboring buildings.

For purposes of the analysis, a threshold of 0.5 in/sec PPV[98] was used for damage to buildings (modern and historic buildings). A response threshold of 0.9 in/sec PPV[99] for transient sources and 0.10 in/sec for continuous or frequent intermittent sources is used to evaluate the annoyance potential.

The demolition, excavation and shoring, and construction of the proposed project have the potential to generate groundborne vibration. Typical vibration levels from construction equipment are presented in **Table 14**, which also shows the buffer distance required for vibration impacts to remain at or below the guidance thresholds.

TABLE 14: PROPOSED CONSTRUCTION EQUIPMENT AND EXPECTED VIBRATION AT 25 FEET

Vibration-Generating Equipment	Source Character	Peak Particle Velocity at 25 feet (in/sec)	Buffer Distance to Remain at or Below Threshold		
			Building Damage (Industrial/ Commercial)	Building Damage (Historic)	Annoyance
Large Bulldozer	Transient	0.089	2	7	4
Caisson Drilling	Transient	0.089	2	7	4
Loaded Trucks	Transient	0.076	2	6	4
Jackhammer	Transient	0.035	1	3	2
Small Bulldozer	Transient	0.003	<1	<1	<1
Impact or Vibratory Pile Driver	Frequent Intermittent	0.650	Occupied Building: 31	N/A 52	N/A 106
Vibration/Concrete Compactor	Frequent Intermittent	0.210	13	22	44

Source: Wilson Ihrig, *Southeast Plant New Headworks (Grit) Replacement Project Noise and Vibration Technical Memo*, August 2016.

Pile-driving activities could affect historic buildings at the SEP. The City's Central Shops A and B, SEP 040, and SEP 041 are the nearest historic structures to the project site. As shown in Table 15, these buildings would need to be at least 52 feet away from pile-driving activities to remain at or below the 0.5 in/sec PPV threshold. The Central Shops A and B are approximately 760 feet from

98 Caltrans, *Transportation and Construction Vibration Guidance Manual*, September 2013.
99 Ibid.

the project site and SEP 040 and SEP 041 are approximately 730 feet from the project site, therefore vibration impacts would not exceed the impact threshold for these structures.

The closest off-site occupied building is approximately 120 feet from the east end of the project site where pile driving would occur. The building is located at the northeast corner of Evans Avenue and Quint Street and is outside the 31-foot buffer for occupied buildings. In summary, vibration impacts would not exceed the threshold for buildings, indicating a less-than-significant impact.

Vibration levels generated by project-related construction activities could be perceptible indoors for nearby land uses and may be considered annoying. As shown in Table 15, based on the distance of the nearest occupied building (120 feet), the vibration levels would not exceed the 0.9 in/sec PPV for transient vibration sources and 0.10 in/sec PPV for continuous/frequent intermittent sources thresholds for annoyance, and impacts would therefore be less than significant.

Operation of the new Headworks Facility would not require equipment that would result in groundborne vibration. As a result, there would be no vibration impact associated with operations.

Impact NO-4: The proposed project could result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project. (Less than Significant)

Operational Noise Thresholds

Section 2909 of the Police Code regulates fixed noise source levels and interior noise limits for fixed noise sources. The operational noise analysis follows a two-step process to evaluate the proposed project against Section 2909(b) and 2909(d) of the Police Code:

- **Section 2909(b)** of the Police Code regulates fixed noise sources (any machine or device on commercial or industrial property). Fixed noise sources must not exceed the existing ambient (L_{90}) noise level by more than 8 dBA on commercial and industrial property at the property plane. The first step of the operational noise analysis is to determine whether the proposed project would result in an increase in ambient noise level by more than 8 dBA for daytime and nighttime. If the limits of Section 2909(b) are exceeded, the operational noise is evaluated in a second step, and against Section 2909(d) to determine the impact significance.

- **Section 2909(d)** of the Police Code provides interior noise limits for fixed noise sources. To prevent sleep disturbance in residential areas, fixed noise sources cannot generate noise levels above 45 dBA that intrude into a sleeping or living room in any dwelling unit on residential property between the hours of 10:00 p.m. to 7:00 a.m., or above 55 dBA between the hours of 7:00 a.m. to 10:00 p.m. with windows open, except where building ventilation is achieved through mechanical systems that allow windows to remain closed. For purposes of evaluating operational noise impacts per 2909(d), an equivalent exterior noise threshold of 60 dBA for nighttime and 70 dBA for daytime is used, based on the assumption that there is a 15 dBA reduction from the exterior to the interior with windows open.

Operational Noise Impacts

The new Headworks Facility would require new mechanical equipment for its operation. Most of the operational mechanical equipment (bar screens, pumps, grit dewatering units, bridge cranes) would be housed inside structures. The odor control system and all ventilation fans and air handling units would be located outside structures. The rooftop would include exhaust fans and air conditioning units, and the associated noise levels are summarized below in **Table 15**. The noise levels are conservative and do not include potential effects of shielding from perimeter walls and buildings.

TABLE 15: PROPOSED OUTDOOR MECHANICAL VENTILATION EQUIPMENT

Equipment Type	Number	Maximum Sound Power Level (dBA)
Rooftop Exhaust Fans	16	92
At-Grade Exhaust Fans	14	92
Rooftop Air Conditioning units	20	87
Emergency Generator	1	93 SPL
Source: Wilson Ihrig, *Southeast Plant New Headworks (Grit) Replacement Project Noise and Vibration Technical Memo*, August 2016.		

As described above, the first step of the operational noise analysis is to determine whether the proposed project would result in an increase in ambient noise level at the property plane by more than 8 dBA for daytime and nighttime. If the limits of Section 2909(b) are exceeded, the operational noise is evaluated in a second step, and evaluated against Section 2909(d) to determine the impact significance.

The L_{90} metric is the typical 'residual' background noise level observed during a measurement period and used to determine code compliance with a fixed noise source. **Table 16** summarizes estimated exterior noise levels at the SEP property planes. As shown in Table 16, the ambient noise levels at the property planes with the proposed project would be between 47 and 71 dBA and therefore would not exceed the Section 2909(b) limit of the ambient (L_{90}) level plus 8 dBA for mechanical ventilation equipment. The emergency generator could contribute to operational noise, however emergency generators are exempt from Section 2909.[100] Because the proposed project would not exceed the Section 2909(b) limit, the second step of the operational noise analysis is not required. As a result, operational noise impacts would be less than significant.

[100] City and County of San Francisco, San Francisco Police Code Article 29: Regulation of Noise Guidelines for Noise Control Ordinance Monitoring and Enforcements, December 2014 Guidance, Appendix C.

TABLE 16: ESTIMATED OPERATIONAL NOISE LEVELS AT PROPERTY PLANES

	Distance from Project Center (feet)	Daytime Ambient	Nighttime Ambient	Section 2909(b) Noise Limit (Ambient L90 + 8 dBA)	Ambient Noise Level with Proposed Project (dBA)	Exceeds 2909(b) Limit?
Evans Avenue Property Plane[1]	70	66 L_{90}	66 L_{90}	74 (daytime and nighttime)	71	No
Phelps Street Property Plane[1]	1,000	66 L_{90}	54 L_{90}	74 daytime, 62 nighttime	47	No

Source: Wilson Ihrig, *Southeast Plant New Headworks (Grit) Replacement Project Noise and Vibration Technical Memo*, August 2016.
1. Based on ambient conditions at LT-A.

In terms of operational truck traffic noise, the new Headworks Facility operations would only increase screenings and grit removal truck trips by one per week. No increase in workers would be required, thus there would be no change to the existing roadway noise levels. The screenings and grit removal truck trips would remain the same as existing operations and would utilize U.S. 101, Industrial Street, Oakdale Avenue, Toland Street, and Jerrold Avenue to access the SEP. As a result, the proposed project would have a less-than-significant impact on operational noise associated with truck traffic.

Impact C-NO: The proposed project, in combination with other past, present and reasonably foreseeable future projects in the vicinity, would result in less than significant cumulative impacts to noise. (Less than Significant)

Cumulative construction-related noise increases would occur if any nearby cumulative projects are constructed at the same time as the proposed project and affect the same sensitive receptors as the proposed project. The geographic scope for potential cumulative noise impacts includes the SEP site and vicinity. The cumulative projects in Table 7 that would be constructed at the same time as the proposed project include project numbers 1 (Biosolids Digester Facilities Project), 4 (Existing Digester Gas Handling Improvements, 5 (SEP Building 521 Replacement/ 522 Disinfection Upgrade), 6 (Power Feed and Primary Switchgear Upgrades), 7 (SEP Primary/Secondary Clarifier Upgrades), and 8 (Seismic Reliability and Condition Assessment Improvements – All Phases). With the exception of the Biosolids Digester Facilities Project, the other cumulative projects would consist of upgrading facilities with minimal heavy construction equipment use and/or proposed construction would occur inside existing building enclosures. Therefore, only the proposed project and the Biosolids Digester Facilities Project could result in a cumulatively significant construction noise impact to noise sensitive receptors.

The Biosolids Digester Facilities Project would be located south of the SEP site. The closest sensitive receptors to the proposed project site are located east of Phelps Street and south of Jerrold Avenue, which are the same receptors that would be most affected by the Biosolids Digester Facilities Project. The closest residential receptor to both the Biosolids Digester Facilities Project and the

proposed project is at 1700 Kirkwood Avenue, which is on the corner of Kirkwood Avenue and Phelps Street, and is the northernmost residence on Phelps Street.

As described in Impact NO-1, the proposed project would not exceed the applicable noise limits at the nearest sensitive receptor, as specified in Section 2908 and 2909 of the Police Code, and would therefore have a less-than-significant noise impact at this receptor. As a result, the proposed project's construction would not expose people to noise in excess of the applicable local noise limits and, consequently, would have a less than cumulatively considerable (less than significant) contribution to a cumulatively significant noise impact.

During demolition, excavation, and construction of the Biosolids Digester Facilities Project, noise levels at the residence at 1700 Kirkwood Avenue is estimated to be up to 79 dBA L_{eq}.[101] Noise levels at this receptor from the construction staging areas for the Biosolids Digester Facilities Project are presumed to exceed the ambient L_{eq} plus 10 dBA threshold[102] during the period from 2018 to 2022 when staging would result in ongoing activity. At this same receptor, construction-related noise levels attributable to the proposed project are estimated to range from 55 to 58 dBA L_{eq}. This analysis conservatively presumes that the noise levels from construction of the Biosolids project would be significant. Thus a perceptible increase in noise levels at this receptor resulting from adding noise from construction of the Headworks project could potentially be cumulatively considerable (significant). However, using the highest noise levels from each project (79 dBA from the Biosolids project and 58 dBA from the Headworks project), the combined noise level would be 79.034 dBA, which would not be a perceptible change in noise level as experienced at 1700 Kirkwood Avenue. The contribution from the proposed project would thus not be cumulatively considerable, and the cumulative impact would be less than significant.

The proposed project would not combine with any other projects to produce cumulative vibration impacts associated with construction. Buffer distances for damage and annoyance are small, and the greatest distance is a buffer of 106 feet to avoid annoyance from pile driving vibrations. There are no receptors that would be within 106 feet of both the Biosolids Digester Facilities Project and proposed project.

Both the Biosolids Digester Facilities Project and proposed project would generate noise from construction trucks. However, both projects would use designated truck routes and because there is no residential development along the truck routes there would be no cumulative truck traffic noise impacts on noise sensitive receptors.

Cumulative operational noise impacts could occur from the cumulative projects and could affect the same sensitive receptors as the proposed project. These projects could result in cumulative operational noise levels that exceed applicable noise limits at nearby residential receptors. Operational noise from the Biosolids Digester Facilities Project at 1700 Kirkwood Avenue is

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101 Orion Environmental Associates, email from Valerie Geier of Orion Environmental Associates to Robin Cort of RMC Water and Environment, September 15, 2016

102 For analytical consistency, the proposed project uses the same thresholds as the Biosolids Digester Facility Project EIR (Case No. 2015-000644ENV) given that their construction timeframes would overlap and would be within the SEP.

projected to be 59 dBA. Combined with SEP operational noise of 42 dBA, the cumulative noise increase from both projects would be 3 to 4 dBA, which would not be 8dBA above ambient noise. Cumulative noise increases during operations of both projects would thus be less than significant.

In addition, as described in Impact NO-5, the proposed project would not exceed the Police Code Section 2909(b) limit of ambient (L_{90}) level plus 8 dBA for its operation. Therefore, the proposed project would have a less than cumulatively considerable contribution to a cumulatively significant noise impact.

Operational traffic from the proposed project would only increase by about one trip per week and there would be no increase in worker trips. Although this increase would be added to operational traffic from other cumulative projects, an increase of one trip per week would not be considered cumulatively considerable within the context of existing or likely future traffic levels in the vicinity and this potentially cumulative noise impact would therefore be less than significant.

E.7. AIR QUALITY

Topics:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Not Applicable
7. AIR QUALITY—Would the project:					
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☒	☐	☐	☐
c) 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☒	☐	☐	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐	☐

E.7.1. Air Quality Setting

Overview

The Bay Area Air Quality Management District (BAAQMD) is the regional agency with jurisdiction over the nine-county San Francisco Bay Area Air Basin (SFBAAB), which includes San Francisco, Alameda, Contra Costa, Marin, San Mateo, Santa Clara, and Napa Counties and portions of Sonoma and Solano Counties. The BAAQMD is responsible for attaining and maintaining air quality in the SFBAAB within federal and state air quality standards, as established by the federal Clean Air Act and the California Clean Air Act, respectively. Specifically, the BAAQMD has the responsibility to monitor ambient air pollutant levels throughout the SFBAAB and develop and implement strategies to attain the applicable federal and state standards. The state and federal Clean Air Acts require plans to be developed for areas that do not meet air quality standards. The most recent air quality plan, the *Bay Area 2010 Clean Air Plan*, was adopted by the BAAQMD on September 15, 2010. The *2010 Clean Air Plan* updates the *Bay Area 2005 Ozone Strategy* 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 *2010 Clean Air Plan* contains the following primary goals:

- Attain air quality standards
- Reduce population exposure and protect public health in the San Francisco Bay Area
- Reduce greenhouse gas emissions and protect the climate

The *2010 Clean Air Plan* represents the most current applicable air quality plan for the SFBAAB. Consistency with this plan is the basis for determining whether the proposed project would conflict with or obstruct implementation of air quality plans.

Criteria Air Pollutants

In accordance with the state and federal CAAs, air pollutant standards are identified for the following six criteria air pollutants: ozone, carbon monoxide (CO), particulate matter (PM), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead. These air pollutants are termed criteria air pollutants because they are regulated by developing specific public health- and welfare-based criteria as the basis for setting permissible levels. In general, the SFBAAB experiences low concentrations of most pollutants when compared to federal or state standards. The SFBAAB is designated as either in attainment[103] or unclassified for most criteria pollutants with the exception of ozone, $PM_{2.5}$, and PM_{10}, for which the SFBAAB is designated as non-attainment for either the state or federal standards. By its very nature, regional air pollution is largely a cumulative impact in that no single project is sufficient in size to result in non-attainment of air quality standards. Instead, a project's individual emissions contribute to existing cumulative air quality impacts. If a project's contribution to cumulative air quality impacts is considerable, the project's impact on air quality would be considered significant.[104]

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

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103 "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.

104 Bay Area Air Quality Management District, *California Environmental Quality Act Air Quality Guidelines*, May 2011, page 2-1.

TABLE 17: 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)
ROG	54	54	10
NO_X	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	
ROG=reactive organic gases; NO_X=oxides of nitrogen			

Ozone Precursors

As previously discussed, the SFBAAB is currently designated as a non-attainment area for ozone and particulate matter. Ozone is a secondary air pollutant that is produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG) and oxides of nitrogen (NO_X). The potential for a project to result in a cumulatively considerable net increase in criteria air pollutants that may contribute to an existing or projected air quality violation is based on the state and federal emissions limits under the state and federal Clean Air Acts, respectively, for stationary sources. To ensure that new stationary sources do not cause or contribute to a violation of an air quality standard, BAAQMD Regulation 2, Rule 2, requires any new source that emits criteria air pollutants above a specified emissions limit to offset those emissions. For the ozone precursors ROG and NO_X, the offset emissions level is an annual average of 10 tons per year (or 54 pounds per day).[105] These levels represent emissions below which new sources are not anticipated to contribute to an air quality violation or result in a considerable net increase in criteria air pollutants. The proposed project's construction and operation would result in ROG and NO_X emissions. Therefore, the thresholds shown in the table above are applied to the construction and operation of the new Headworks Facility. Emissions below these thresholds would not be considered to contribute to an air quality violation or result in a considerable net increase in ROG and NO_X emissions.

Particulate Matter (PM_{10} and $PM_{2.5}$)[106]

The BAAQMD has not established an offset limit for $PM_{2.5}$. However, the emissions limit in the federal National Source Review for stationary sources in non-attainment areas is an appropriate significance threshold. For PM_{10} and $PM_{2.5}$, the emissions limit under National Source Review is 15 tons per year (82 pounds per day) and 10 tons per year (54 pounds per day), respectively. These emission limits represent levels at which a source is not expected to have an impact on air quality.[107]

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105 Bay Area Air Quality Management District, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009, page 17.

106 PM10 is often termed "coarse" particulate matter and is made of particulates that are 10 microns in diameter or smaller. PM2.5, termed "fine" particulate matter, is composed of particles that are 2.5 microns or less in diameter.

107 Bay Area Air Quality Management District, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009. Page 16.

The proposed project's construction and operation would result in PM_{10} and $PM_{2.5}$ emissions. Therefore, the thresholds shown above are applied to the construction and operation of the new Headworks Facility. Emissions below these thresholds would not be considered to contribute to an existing or projected air quality violation.

Fugitive Dust

Fugitive dust emissions are typically generated during construction phases. Studies have shown that the application of BMPs at construction sites significantly controls fugitive dust,[108] and individual measures have been shown to reduce fugitive dust from 30 to 90 percent.[109] The BAAQMD has identified a number of BMPs to control fugitive dust emissions from construction activities.[110] The CCSF's Construction Dust Control Ordinance (Ordinance 176-08, effective July 30, 2008) requires a number of measures to control fugitive dust, and the BMPs employed in compliance with the Construction Dust Control Ordinance are part of an effective strategy for controlling construction-related fugitive dust.

Other Criteria Pollutants

Regional concentrations of CO in the Bay Area have not exceeded the state standards in the past 11 years, and SO_2 concentrations have never exceeded the standards. The primary source of CO emissions from development projects is vehicle traffic. Construction-related SO_2 emissions represent a negligible portion of total basin-wide emissions, and construction-related CO emissions represent less than 5 percent of total basin-wide CO emissions in the Bay Area. As discussed previously, the Bay Area is in attainment for both CO and SO_2. Furthermore, the BAAQMD has demonstrated, based on modeling, that in order to exceed the California ambient air quality standard of 9.0 parts per million (ppm) (8-hour average) or 20.0 ppm (1-hour average) for CO, project traffic in addition to existing traffic would need to exceed 44,000 vehicles per hour at affected intersections (or 24,000 vehicles per hour where vertical and/or horizontal mixing is limited). Therefore, given the Bay Area's attainment status and the limited amount of CO and SO_2 emissions that result from development projects, development projects would not cause a cumulatively considerable net increase in CO or SO_2, and quantitative analysis is not required.

Local Health Risks and Hazards

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

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108 Western Regional Air Partnership, *WRAP Fugitive Dust Handbook*, 2006, Available at http://www.wrapair.org/forums/dejf/fdh/content/FDHandbook_Rev_06.pdf. Accessed on May 5, 2016.

109 Bay Area Air Quality Management District. *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009. Page 27.

110 Bay Area Air Quality Management District. *CEQA Air Quality Guidelines*, 2011.

Unlike criteria air pollutants, TACs do not have ambient air quality standards but rather are regulated by the BAAQMD 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 that evaluates human health exposure to toxic substances; this assessment, considered together with information regarding the toxic potency of the particular substances, yields quantitative estimates of health risks.[111]

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 daycare 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, 350 days per year, for 30 years. Therefore, assessments of air pollutant exposure to residents typically result in the greatest adverse health outcomes of all population groups.

Exposures to fine particulate matter ($PM_{2.5}$) are strongly associated with mortality, respiratory diseases, and impaired lung development in children as well as hospitalization for cardiopulmonary disease.[112] In addition to $PM_{2.5}$, diesel particulate matter (DPM) is also of concern. The California Air Resources Board (CARB) identified DPM as a TAC in 1998. This was based primarily on evidence that demonstrated cancer effects in humans.[113] The estimated cancer risk from exposure to diesel exhaust is much higher than the risk associated with any other TAC that is routinely measured in the region.

In an effort to identify areas of San Francisco most adversely affected by sources of TACs, San Francisco partnered with the BAAQMD 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 health protective criteria that considers estimated cancer risk, exposures to fine particulate matter, proximity to freeways, and locations with particularly vulnerable populations. The project site is located within the Air Pollutant Exposure Zone. Each of the Air Pollutant Exposure Zone criteria is discussed below.

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111 In general, a health risk assessment is required if the BAAQMD 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 TACs.

112 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.

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

Excess Cancer Risk

The above 100 per one million persons (100 excess cancer risk) criterion is based on United States Environmental Protection Agency (USEPA) guidance for conducting air toxic analyses and making risk management decisions at the facility and community-scale level.[114] As described by the BAAQMD, the USEPA considers a cancer risk of 100 per million to be within the "acceptable" range of cancer risk. Furthermore, in the 1989 preamble to the benzene National Emissions Standards for Hazardous Air Pollutants (NESHAP) rulemaking,[115] the USEPA states that it "…strives to provide maximum feasible protection against risks to health from hazardous air pollutants by (1) protecting the greatest number of persons possible to an individual lifetime risk level no higher than approximately one in one million and (2) limiting to no higher than approximately one in ten thousand [100 in one million] the estimated risk that a person living near a plant would have if he or she were exposed to the maximum pollutant concentrations for 70 years." 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 BAAQMD regional modeling.[116]

Land use projects already within an Air Pollutant Exposure Zone would be subject to a lower significance standard to ensure that a proposed project's contribution to existing health risks would not be significant. In these areas, a proposed project resulting in an increased cancer risk of more than 7.0 per million would be considered a significant impact.[117] The lower threshold for excess cancer risk greater than 7.0 per million applies to the proposed project.

Fine Particulate Matter ($PM_{2.5}$)

In April 2011, the USEPA published Policy Assessment for the Particulate Matter Review of the National Ambient Air Quality Standards, "Particulate Matter Policy Assessment." In this document, USEPA staff concludes that the then current federal annual $PM_{2.5}$ standard of 15 micrograms per cubic meter ($\mu g/m^3$) should be revised to a level within the range of 13 to 11 $\mu g/m^3$, with evidence strongly supporting a standard within the range of 12 to 11 $\mu g/m^3$. 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 USEPA's Particulate Matter Policy Assessment, although lowered to 10 $\mu g/m^3$ to account for uncertainty in accurately predicting air pollutant concentrations using emissions modeling programs.

Sensitive receptor locations already meeting the Air Pollutant Exposure Zone criteria would be subject to a lower significance standard to ensure that a proposed project's contribution to existing health risks would not be significant. In these areas, a proposed project resulting in a contribution

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

115 54 Federal Register 38044, September 14, 1989.

116 BAAQMD, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009 (see footnote 57, p. 65), page 67.

117 A 0.2 μg/m3 increase in $PM_{2.5}$ would result in a 0.28 percent increase in non-injury mortality or an increase of about twenty-one 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. 2005. Spatial Analysis of Air Pollution and Mortality in Los Angeles. Epidemiology. 16:727-736. The excess cancer risk has been proportionally reduced to result in a significance criteria of 7.0 per million persons exposed.

to $PM_{2.5}$ concentrations above 0.2 μg/m³ would be considered a significant impact.[118] This lower threshold for $PM_{2.5}$ contribution is the threshold applied to the proposed project.

Proximity to Freeways

According to the CARB, 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 the exposure to air pollution and the potential for adverse health effects. Evidence shows that sensitive uses located within a 500-foot buffer of any freeway are at an increased health risk from air pollution;[119] as such, lots that are within 500 feet of freeways are included in the Air Pollutant Exposure Zone.

Health Vulnerable Locations

Based on the BAAQMD's evaluation of health vulnerability in the Bay Area, those zip codes (94102, 94103, 94105, 94124, and 94130) in the worst quintile of the Bay Area Health vulnerability scores as a result of air pollution-related causes were afforded additional protection by lowering the standards for identifying lots 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 μg/m³.[120]

The above citywide health risk modeling was also used as the basis in approving a series of amendments to the San Francisco Building and Health Codes, generally referred to as the Enhanced Ventilation Required for Urban Infill Sensitive Use Developments or Health Code, Article 38 (Ordinance 224-14, effective December 8, 2014) (Article 38). 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 Air Pollutant Exposure Zone. 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 AQ-1: The proposed project's construction activities would generate fugitive dust and criteria air pollutants and would violate an air quality standard, contribute substantially to an existing or projected air quality violation, and result in a cumulatively considerable net increase in criteria air pollutants. (Less than Significant with Mitigation)

Construction activities (short term) typically result in emissions of ozone precursors and PM in the form of dust (fugitive dust) and exhaust (e.g., vehicle tailpipe emissions). Emissions of ozone precursors and PM are primarily a result of the combustion of fuel from on-road and off-road sources. However, ROGs are also emitted from activities that involve painting, other types of architectural coatings, or asphalt paving.

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118 Ibid.

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

120 San Francisco Planning Department and San Francisco Department of Public Health. 2014. *2014 Air Pollutant Exposure Zone Map (Memo and Map)*, April 9. These documents are part of San Francisco Board of Supervisors File No. 14806, Ordinance No. 224-14 Amendment to Health Code Article 38.

The proposed project would include: (1) demolition of the SEP 010 Influent Control Structure/Southeast Lift Station, 398 Quint Street, SEP 011 headworks, and SEP 012 headworks, (2) excavation and backfill, and (3) a new odor control facility and Headworks Facility totaling approximately 41,500 square feet. During the project's approximately 5 1/2 year) construction period, construction activities would have the potential to result in emissions of ozone precursors and PM, as discussed below.

Fugitive Dust

Project-related demolition, excavation, grading, and other construction activities may cause wind-blown dust that could contribute particulate matter to the local atmosphere. The proposed project would excavate approximately 66,000 cubic yards of soil and have a construction area of approximately 4 acres and therefore would be subject to the Construction Dust Control Ordinance.

Although there are federal standards for evaluating the effects of air pollutants and implementing state and regional air quality control plans, air pollutants continue to have impacts on human health throughout the country. California has found that PM exposure can cause health effects at levels that are lower than national standards. The current health burden of PM demands that, where possible, public agencies take feasible available actions to reduce sources of exposure. According to the CARB, reducing $PM_{2.5}$ concentrations to the state and federal standards of 12 $\mu g/m^3$ in the San Francisco Bay Area would prevent between 200 and 1,300 premature deaths.[121]

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

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

The ordinance requires all site preparation work, demolition, and other construction activities in San Francisco that have the potential to create dust or expose or disturb more than 10 cubic yards or 500 square feet of soil to comply with specified dust control measures, whether or not the activity requires a permit from the Department of Building Inspection. The Department's director may waive this requirement for activities on sites that are less than one-half acre and unlikely to result in any visible wind-blown dust. For projects that are more than one-half acre, the Construction

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121 California Air Resources Board, *Methodology for Estimating Premature Deaths Associated with Long-term Exposure to Fine Airborne Particulate Matter in California*. Staff report. Table 4c, October 24, 2008.

Dust Control Ordinance requires the project sponsor to submit a dust control plan for approval by the SFDPH.

In compliance with this ordinance, the SFPUC and the contractor responsible for construction activities at the project site would be required to prepare and submit a dust control plan to the SFDPH. The plan would require the implementation of dust suppression practices at the project site, which could include the following: wetting down areas of disturbed soil at least three times per day; analyzing wind direction and installing upwind and downwind particulate dust monitors; recording particulate monitoring results; hiring an independent third party to conduct inspections and keep a record of those inspections; establishing requirements for when dust generating operations have to be shut-down due to dust crossing the property boundary or if dust within the property boundary is not controlled after a specified number of minutes; establishing a hotline for surrounding community members to call and report visible dust problems; establishing a 15 mph speed limit for vehicles entering and exiting construction areas; and sweeping streets with water sweepers at the end of the day where visible soil material is present.

Compliance with the regulations of the Construction Dust Control Ordinance would reduce fugitive dust emissions during construction to a less-than-significant level.

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. An air quality technical report was prepared for this project to quantify construction-related criteria air pollutants using the California Emission Estimator Model.[122] The modeling used project-specific data on construction equipment coupled with default data (e.g., emission factors, meteorology). Default assumptions were used where project-specific information was unknown.

Construction of the proposed project would occur over a consecutive 60 months. Emissions were converted from tons per year to pounds per day using the estimated construction duration of 1,250 days.[123] A sixth year of demolition (SEP 012 headworks) would occur after the new Headworks Facility is proven effective by at least two years of successful wet season operations. **Table 18** shows the project construction emissions. The model assumes Tier 2 and higher engines and implementation of the Level 3 Verified Diesel Emission Control Strategy (VDECS), as required by the San Francisco Clean Construction Ordinance.[124] The San Francisco Clean Construction Ordinance was promulgated to address diesel particulate matter emissions; however, it also has the effect of reducing NO_X emissions compared to older engines. As shown in Table 18, project construction emissions (i.e., assuming Tier 2 engines and Level 3 VDECS) are estimated to not be above the thresholds of significance for ROG, PM_{10} exhaust, and $PM_{2.5}$ exhaust. However, the proposed project would have an average daily NO_X emission of 104 pounds per day, which would exceed the 54 pounds per day threshold, and the impact on air quality would therefore be

122 Ramboll Environ, *Air Quality Technical Report Southeast Plant 250 MGD New Headworks Facility Project*, September 20, 2016.
123 Ibid.
124 City and County of San Francisco, *San Francisco Clean Construction Ordinance Implementation Guide for San Francisco Public Project*, August 2015.

significant. Implementation of **Mitigation Measure M-AQ-1: NOx Construction Emissions Minimization** would reduce NOx emissions to a less-than-significant level by requiring Tier 4 Final engines on all equipment greater than or equal to 140 horsepower for all years, and renewable diesel in all haul trucks in Year 5 (only) of construction. **Table 19** shows the estimated project construction emissions with mitigation. Use of Tier 4 Final engines reduces construction emissions because these engines contain advanced emissions-control technologies and reduce NOx and PM to a greater extent than Tier 2 engines and Level 3 VDECs. Renewable diesel also results in a reduction in on-road emissions for ROG, PM, and NOx.[125]

TABLE 18: DAILY PROJECT CONSTRUCTION EMISSIONS (POUNDS PER DAY)

	ROG	NO_X	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
Year 1	1.2	48	0.2	0.2
Year 2	2.4	122	0.4	0.4
Year 3	2.6	112	0.4	0.4
Year 4	1.0	113	0.4	0.4
Year 5	3.8	123	0.4	0.4
Year 6	0.4	56	0.2	0.2
Project Average Daily Emissions (lbs/day)[1,2]	2.2	**104**	0.3	0.3
Significance Threshold (lbs/day)	54	**54**	82	54
Exceeds Threshold?	No	**Yes**	No	No

Source: Ramboll Environ, *Air Quality Technical Report Southeast Plant 250 MGD New Headworks Facility Project*, September 20, 2016.
Notes:
Bold represents values over the threshold.
1. Average over 250 days of construction per year for Years 1 through 5, and 125 days for Year 6.
2. Represents using Tier 2 off-road construction equipment with diesel particulate filters, as required by the San Francisco Clean Construction Ordinance.

TABLE 19: MITIGATED DAILY PROJECT CONSTRUCTION EMISSIONS (POUNDS PER DAY)

	ROG	NO_X	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
Year 1	1.5	25	0.2	0.2
Year 2	3.3	47	0.3	0.3
Year 3	3.4	49	0.3	0.3
Year 4	2.1	30	0.3	0.3
Year 5	4.8	53	0.3	0.3
Year 6	0.9	20	0.1	0.1
Project Average Daily Emissions (lbs/day)[1,2]	3.0	41	0.3	0.2
Significance Threshold (lbs/day)	54	54	82	54
Exceeds Threshold?	No	No	No	No

Source: Ramboll Environ, *Air Quality Technical Report Southeast Plant 250 MGD New Headworks Facility Project*, September 20, 2016.
Notes:
1. Average over 250 days of construction per year for Years 1 through 5, and 125 days for Year 6.
2. Represents using Tier 2 off-road construction equipment with diesel particulate filters, as required by the San Francisco Clean Construction Ordinance as a minimum control for all equipment less than 140 horsepower, Tier 4 Final off-road construction equipment for all equipment equal to or greater than 140 horsepower, and renewable diesel for all diesel on-road trucks and vehicles in Year 5.

125 Ramboll Environ, *Air Quality Technical Report Southeast Plant 250 MGD New Headworks Facility Project*, September 20, 2016.

Mitigation Measure M-AQ-1: NO_x Construction Emissions Minimization.

All equipment requirements, construction emissions minimization plan, monitoring and reporting are subject to the San Francisco Clean Construction Ordinance. The SFPUC's contractors shall implement the following in addition to the requirements of the Clean Construction Ordinance:

A. Engine Requirements

1. All off-road construction equipment equal to or greater than 140 horsepower shall be consistent with the United States Environmental Protection Agency (USEPA) Tier 4 Final off-road emission standards.
2. Renewable diesel shall be used in all diesel on-road trucks and vehicles in Year 5 (only) of construction.

Should any deviations from the requirements or the equipment above be proposed prior to or during construction, the project sponsor shall demonstrate, to the satisfaction of the San Francisco Planning Department Environmental Review Officer (ERO), that an equivalent amount of emissions reduction would be achieved.

B. Waivers

1. The ERO or designee may waive the alternative source of power requirement of Subsection (A)(2) if an alternative source of power is limited or infeasible at the project site. If the ERO or designee grants the waiver, the contractor must submit documentation that the equipment used for on-site power generation meets the requirements of Subsection (A)(1).
2. The ERO or designee may waive the equipment requirements of Subsection (A)(1) if a particular piece of off-road equipment with Tier 4 Final standards or CARB Level 3 VDECS is technically or commercially126 not feasible, the equipment would not produce desired emissions reduction due to expected operating modes, installation of the equipment would create a safety hazard or impaired visibility for the operator, or there is a compelling emergency need to use off-road equipment that is not retrofitted with a CARB Level 3 VDECS. If the ERO or designee grants the waiver, the contractor must use the next cleanest piece of off-road equipment, according to the following table:

Compliance Alternative	Engine Emission Standard
1	Tier 4 Interim
2	Tier 3
3	Tier 2

NOTES: How to use the table: If the Environmental Review Officer (ERO) or designee determines that the equipment requirements cannot be met, then the contractor would need to meet Compliance Alternative 1. If the ERO or designee determines that the contractor cannot supply off-road equipment meeting Compliance Alternative 1, then the contractor must meet Compliance Alternative 2. If the ERO or designee determines that the contractor cannot supply off-road equipment meeting Compliance Alternative 2, then the contractor must meet Compliance Alternative 3.

126 For purposes of this mitigation measure, "commercially available" shall mean the availability of Tier 4 equipment taking into consideration factors such as: (1) critical path timing of construction; (ii) geographic proximity to the project site of equipment; and (iii) geographic proximity of access to off-haul deposit sites.

Impact AQ-2: The proposed project's operation would generate criteria air pollutants, but would not violate an air quality standard, contribute substantially to an existing or projected air quality violation, or result in a cumulatively considerable net increase in criteria air pollutants. (Less than Significant)

With the exception of one new diesel-powered emergency generator at the BFS, general operations would not change. The proposed project would upgrade and replace an existing facility; therefore, the net operational emissions, other than those from the emergency generator, would be minimal based on the types of equipment proposed (screens, channels, grit removal tanks and pumps, ventilation and odor control systems, influent sampling equipment, flow splitters, and utility and control systems). Because the majority of the replacement equipment proposed as part of the project would be the same or similar type of equipment, the net operational emissions would be similar and are not discussed further.[127] The proposed odor control system is not included in this analysis because this source would not generate criteria air pollutants. The following discussion therefore focuses solely on operational emissions from the emergency generator, which would result in emissions of criteria air pollutants.

The emissions resulting from operation of the emergency generator were calculated using the BAAQMD rule limiting the hours of nonemergency operation for emergency standby diesel engines to a maximum of 50 hours per year. The criteria air pollutant emissions were calculated for a 750-kilowatt emergency generator that complies with best available control technology standards. As shown in **Table 20**, the proposed project would not exceed the significance thresholds for criteria air pollutants. Impacts would be less than significant.

TABLE 20: DAILY PROJECT OPERATIONAL EMISSIONS (POUNDS PER DAY)

Emissions Source	ROG	NO_X	PM_{10} Exhaust	$PM_{2.5}$ Exhaust[2]
Emergency Generator Project Average Daily Emissions (lbs/day)[1]	0.078	1.4	0.045	0.045
Significance Threshold (lbs/day)	54	54	82	54
Exceeds Threshold?	No	No	No	No

Source: Ramboll Environ, *Air Quality Technical Report Southeast Plant 250 MGD New Headworks Facility Project*, September 20, 2016.
Notes:
1. The California Airborne Toxic Control Measure (ATCM) for Stationary CI Engines (17 CCR 93115.6(3)(1)(C)) and BAAQMD Rule 9-8-330.3 restrict nonemergency use of emergency standby diesel-fueled compression ignition engines to a maximum of 50 hours per year.
2. $PM_{2.5}$ emissions were conservatively assumed to be equal to the PM_{10} emissions.

127 Ramboll Environ, *Air Quality Technical Report Southeast Plant 250 MGD New Headworks Facility Project*, September 20, 2016.

Impact AQ-3: The proposed project's construction and operational activities would generate toxic air contaminants, including diesel particulate matter, but would not expose sensitive receptors to substantial pollutant concentrations. (Less than Significant)

Sources of Toxic Air Contaminants

Vehicle Trips (Operations). Individual projects result in emissions of toxic air contaminants primarily as a result of an increase in vehicle trips. The BAAQMD considers roads with less than 10,000 vehicles per day "minor, low-impact" sources that do not pose a significant health impact even in combination with other nearby sources and recommends that these sources be excluded from the environmental analysis. Operation of the proposed project would remain similar to existing operations. The proposed project's three net new truck trips per week would be well below 10,000 trips and would be distributed among the local roadway network; therefore an assessment of project-generated TACs resulting from vehicle trips is not required, and the proposed project would not generate a substantial amount of TAC emissions that could affect nearby sensitive receptors.

On-Site Diesel Generator (Operations). The proposed project would include a backup emergency generator. Emergency generators are regulated by the BAAQMD through its New Source Review (Regulation 2, Rule 5) permitting process. The SFPUC would be required to obtain applicable permits from the BAAQMD to operate an emergency generator. Although emergency generators are intended only to be used in periods of power outages, monthly testing of the generator would be required. The BAAQMD limits testing to no more than 50 hours per year. Additionally, as part of the permitting process, the BAAQMD limits the excess cancer risk from any facility to no more than ten per one million population and requires any source that would result in an excess cancer risk greater than one per one million population to install Best Available Control Technology for Toxics (TBACT). Compliance with the BAAQMD permitting process would ensure that project-generated TAC emissions would not expose sensitive receptors to substantial air pollutant concentrations, and TAC emissions would be less than significant.

Construction-Related TACs. Off-road equipment (which includes construction-related equipment) is a large contributor to DPM emissions in California, although, since 2007, the CARB has found the emissions to be substantially lower than previously expected.[128] Newer and more refined emissions inventories have lowered DPM emissions from off-road equipment to the degree that off-road equipment is now considered the sixth-largest source of DPM emissions in California.[129] For example, revised PM emissions estimates for 2010, with DPM as a major component of total PM, have decreased by 83 percent compared to previous 2010 emissions estimates for the SFBAAB.[130] Approximately half of the reduction in emissions can be attributed

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128 California Air Resources Board, *Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Proposed Amendments to the Regulation for In-Use Off-Road Diesel-Fueled Fleets and the Off-Road Large Spark-Ignition Fleet Requirements*, p.1 and p. 13 (Figure 4), October 2010.

129 Ibid.

130 California Air Resources Board, *In-Use Off-Road Equipment, 2011 Inventory Model*, 2014. Available: http://www.arb.ca.gov/msei/categories.htm#inuse_or_category. Accessed: May 5, 2016.

to the economic recession and half to updated methodologies for assessing construction emissions.[131]

Additionally, a number of federal and state regulations require cleaner off-road equipment. Specifically, both the USEPA and California have set emissions standards, ranging from Tier 1 to Tier 4, for the engines in new off-road equipment. Tier 1 emissions standards were phased in between 1996 and 2000, and the Tier 4 interim and final emissions standards for all new engines were phased in between 2008 and 2015. To meet the Tier 4 emissions standards, engine manufacturers were required to produce new engines with advanced emissions-control technologies. Although the full benefits of these regulations will not be realized for several years, the USEPA estimates that by implementing the federal Tier 4 standards, NO_x and PM emissions will be reduced by more than 90 percent.[132]

In addition, because of their temporary and variable nature, construction activities do not lend themselves to analysis with respect to the associated long-term health risks. As explained in the BAAQMD's *CEQA Air Quality Guidelines*:

> Due to the variable nature of construction activity, the generation of TAC emissions in most cases would be temporary, especially considering the short amount of time such equipment is typically within an influential distance that would result in the exposure of sensitive receptors to substantial concentrations. Concentrations of mobile-source diesel PM emissions are typically reduced by 70 percent at a distance of approximately 500 feet (ARB 2005). In addition, current models and methodologies for conducting health risk assessments are associated with longer-term exposure periods of 9, 40, and 70 years, which do not correlate well with the temporary and highly variable nature of construction activities. This results in difficulties with producing accurate estimates of health risk.[133]

Project-level analyses of construction activities have a tendency to produce overestimated assessments of long-term health risks. However, within the Air Pollutant Exposure Zone, as discussed above, additional construction activity may adversely affect populations that are already at a higher risk for adverse long-term health risks from existing sources of air pollution. As described above, the project site is located within an Air Pollutant Exposure Zone and a health risk assessment (HRA) was performed to evaluate potential health risks for nearby sensitive receptors. The proposed project's HRA was conducted consistent with the guidelines and methodologies from the BAAQMD,[134] the California Office of Environmental Health Hazard Assessment

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131 California Air Resources Board, *Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Proposed Amendments to the Regulation for In-Use Off-Road Diesel-Fueled Fleets and the Off-Road Large Spark-Ignition Fleet Requirements*, October 2010.

132 California Air Resources Board, *In-Use Off-Road Equipment, 2011 Inventory Model*, 2014. Available http://www.arb.ca.gov/msei/categories.htm#inuse_or_category. Accessed May 5, 2016.

133 Bay Area Air Quality Management District, *CEQA Air Quality Guidelines*, May 2011, page 8-6.

134 Bay Area Air Quality Management District, *CEQA Air Quality Guidelines*, May 2012; Recommended Methods for Screening and Modeling Local Risks and Hazards, May 2012; Proposed Health Risk Assessment Guidelines, Air Toxics NSR Program, January 2016.

(OEHHA),[135] California Air Pollution Control Officer's Association (CAPCOA),[136] and the CRRP-HRA.[137]

The HRA conservatively evaluated the scenario with the highest exposure of receptor populations (consistent with OEHHA 2015 guidelines), which are expected to be subject to the highest impacts from the project: a 30-year resident commencing at the time of project construction in 2017. Evaluation of the 30-year residential exposure risk, which also takes into account child exposure parameters (i.e., age sensitivity factors), is considered to be the most conservative and health protective approach. The HRA conservatively evaluated excess lifetime cancer risks, health effects related to $PM_{2.5}$ concentrations, and chronic and acute non-cancer health effects resulting from emission sources within 1,000 meters (1 kilometer or 3,280 feet) of the project site.

As described previously, because the proposed project is in an area already meeting the Air Pollutant Exposure Zone criteria, a lower significance standard is required to ensure that a proposed project's contribution to existing health risks would not be significant. The proposed project's contribution to $PM_{2.5}$ concentrations above 0.2 $\mu g/m^3$ or an excess cancer risk greater than 7.0 per million persons exposed would be considered a considerable contribution to cumulative health risks. Thus, this analysis considers the cumulative health risks to sensitive receptors.

The maximum $PM_{2.5}$ concentration would occur in Year 3 of construction (2019) at less than 0.1 $\mu g/m^3$. As shown in **Table 21**, $PM_{2.5}$ construction and operation levels would not exceed the 0.2 $\mu g/m^3$ significance threshold. Therefore, localized $PM_{2.5}$ impacts from construction and operation at sensitive receptor locations would be less than significant. As shown in Table 21, excess cancer risks at the off-site receptors would be 0.6 per million under construction plus operation, which is below the threshold of 7.0 in a million. Therefore, the proposed project's excess cancer risk at the receptor locations would be less than significant.

TABLE 21: CONSTRUCTION AND OPERATION DPM EMISSIONS AND HRA RESULTS AT OFF-SITE RECEPTOR

	Cancer Risk (in 1 million)	$PM_{2.5}$ Concentration ($\mu g/m^3$)
Construction and Operation Emissions at Off-Site Receptor	0.6	<0.1
Significance Threshold	7.0	0.2
Exceeds Threshold?	No	No

Source: Ramboll Environ, *Air Quality Technical Report Southeast Plant 250 MGD New Headworks Facility Project*, September 20, 2016.

135 In February 2015, OEHHA released the updated *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*, which combines information from previously released and adopted technical support documents to delineate OEHHA's revised risk assessment methodologies based on current science. This updated Guidance Manual supersedes the 2003 Guidance Manual that previously provided methodologies for conducting health risk assessments under the Air Toxics Hot Spots Program (AB 2588). The BAAQMD has issued Draft Guidelines on adopting the OEHHA 2015 Guidance Manual; however, the 2015 Guidance Manual has not yet been formally adopted. This evaluation used the 2015 methodology in anticipation of its adoption.

136 California Air Pollution Control Officers Association (CAPCOA), *Health Risk Assessment for Proposed Land Use Projects*, 2009.

137 BAAQMD, *The San Francisco Community Risk Reduction Plan (CRRP): Technical Support Documentation*, December 2012.

Impact AQ-4: The proposed project would not conflict with or obstruct implementation of applicable air quality plans. (Less than Significant)

The most recently adopted air quality plan for the SFBAAB is the *2010 Clean Air Plan*. This plan is a road map that demonstrates how the San Francisco Bay Area will achieve compliance with the state ozone standards as expeditiously as practicable, and how the region will reduce the transport of ozone and ozone precursors in neighboring air basins. In determining consistency with the *2010 Clean Air Plan*, this analysis considers whether the project would: (1) support the primary goals of the *Clean Air Plan*, (2) include applicable control measures from the *Clean Air Plan*, and (3) avoid disrupting or hindering implementation of control measures identified in the *Clean Air Plan*.

The primary goals of the Clean Air Plan are to: (1) reduce emissions and decrease concentrations of harmful pollutants, (2) safeguard public health by reducing exposure to air pollutants that pose the greatest health risk, and (3) reduce GHG emissions. To meet the primary goals, the Clean Air Plan recommends specific control measures and actions. These control measures are grouped into various categories and include stationary- and area-source measures, mobile-source measures, transportation control measures, land use measures, and energy and climate measures. The CAP 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. To this end, the CAP includes 55 control measures aimed at reducing air pollution in the SFBAAB.

The measures most applicable to the proposed project are mobile source control measures and energy and climate measures. The proposed project's impact with respect to GHGs is discussed under Section E.8, Greenhouse Gas Emissions, which demonstrates that the proposed project would comply with the applicable provisions of the City's Greenhouse Gas Reduction Strategy.

The proposed project consists of replacing existing headworks facilities with a new facility within the boundary of the existing SEP. The proposed project would not result in population growth and operations would result in a net increase of three truck trips per week, which would not result in substantial growth in automobile trips, vehicle miles traveled, or an increase in air pollutant emissions. Mobile source control measures MSM B-2 (Low NO_x Retrofits for In-Use Engines) and MSM C-1 (Construction and Farming Equipment) aim to reduce emissions by retrofitting older on-road heavy duty vehicles with devices that reduce NO_x emissions, and retrofitting construction equipment with diesel particulate matter filters or upgrade to a Tier 3 or 4 off-road engine. These mobile source control measures are implemented through the San Francisco Clean Construction Ordinance, which require Tier 2 and higher engines and implementation of Level 3 VDECs. As described in Impact AQ-1, the San Francisco Clean Construction Ordinance was promulgated to address diesel particulate matter emissions; however, it also has the effect of reducing NO_x emissions compared to older engines. Compliance with this ordinance would ensure the project's construction includes relevant mobile source control measures specified in the 2010 CAP. Therefore, the proposed project would include applicable control measures identified in the CAP to the meet the CAP's primary goals.

Examples of a project that could cause the disruption or delay of CAP 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 replace an existing headworks facility at an existing wastewater treatment plant. Given that the development would occur within the existing SEP, excluding BFS upgrades, and would not alter surrounding areas, the project would not interfere with implementation of the *2010 Clean Air Plan* and therefore would have a less-than-significant impact with mitigation.

For the reasons described above, the proposed project would not interfere with implementation of the CAP, and because the proposed project would be consistent with the applicable air quality plan that demonstrates how the region will improve ambient air quality and achieve the state and federal ambient air quality standards, the impact would be less than significant.

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

Typical odor sources of concern include wastewater treatment plants, sanitary landfills, transfer stations, composting facilities, petroleum refineries, asphalt batch plants, chemical manufacturing facilities, fiberglass manufacturing facilities, auto body shops, rendering plants, and coffee roasting facilities. During construction, diesel exhaust from construction equipment would generate some odors. However, construction related odors would be temporary and would not persist upon project completion.

Odor emissions from the SEP's operational processes have been an ongoing issue with neighbors and businesses along Phelps Street and Evans Avenue. The SEP operates 24 hours a day, 7 days a week. Odors are emitted from both the liquids process on the north side and the solids process on the south side of the SEP. Odor complaints can be made directly to SEP staff or to the BAAQMD or reported through the San Francisco's 311 system. These odor complaints are recorded, and SEP staff investigate the source of the odors, confirm the source of odors, and document the action taken for each complaint. Over the 6-year period from 2010 through 2015 there were 40 odor complaints reported by the public associated with the SEP.[138,139] These include two confirmed odor complaints reported to the BAAQMD.[140]

In winter 2013 and summer 2014, surveys were conducted to determine whether odors could be affecting the surrounding community.[141] Winds in the vicinity are predominantly from the west to southwest, and average wind speeds are light (5.6 miles per hour).[142] Odors within the SEP were

138 SFPUC, Odor Complaint Data 2010_2014 rev Spreadsheet, November 9, 2015.
139 SFPUC, SEP Odor Incidents 2015 Spreadsheet, No date.
140 A complaint confirmation status means that either an inspector, or another trained employee of the BAAQMD, or a complainant must be able to establish that a particular operation or combination of operations is the source of the air contaminants.
141 Brown and Caldwell, CH2M, Black & Veatch, *Odor Characterization Report Southeast Water Pollution Control Plant*, December 2015.
142 Ibid.

characterized primarily as hydrogen sulfide and other reduced sulfur compounds, and odors derive almost entirely from the liquids process sources (e.g., headworks facility).

Baseline dispersion modeling was conducted to determine the odor footprint at the SEP by quantifying the number of hourly exceedances of the 5 dilutions-to-threshold (D/T)[143] design criterion and identifying the greatest off-site odor concentrations. The 5 D/T design criterion at the SEP fenceline was established by the SFPUC as a strategy for the new Headworks under Phase 1 of the SSIP because it would limit plant odors to within the plant fence line, which is an SSIP LOS goal. The surveys determined that the SEP 012 roof fans and chemical scrubbers result in off-site concentrations that exceed the 5 D/T design criterion.[144] Fugitive odor sources from current operations include: open rollup doors that are generally left open during the SEP 011 grit load-out process; empty dumpster units used for coarse screens and usually left outdoors near the west and north SEP fenceline; and open bays in SEP 012 during load-out of fine screenings.[145]

The SEP does not meet the BAAQMD threshold criterion of five confirmed odor complaints per year, averaged over three years, and is thus not considered by the BAAQMD to have an existing odor impact. The proposed project would replace the SEP 010 Influent Control Structure/Southeast Lift Station, SEP 011, and SEP 012 (identified as sources of odor) with new headworks and odor-control facilities. One of the purposes of the project is to construct an odor control structure that meets the SFPUC's proposed 5 D/T odor design criterion at the fence line with 99 percent compliance, based on a 1-hour average at the fence line.[146] The proposed odor control facility would be designed to provide two-stage treatment for foul air generated at the new Headworks Facility by using bioscrubbers followed by carbon adsorption. Other design features include ventilating the fine-screen channels and the fine-screen enclosure in the new Headworks Facility to maintain negative pressure for odor control, ventilating the loading bay in the screenings handling area for odor control, and covering grit tanks and channels.[147] The proposed project would not create significant sources of new odors but rather would reduce the off-site odor concentrations to meet the 5 D/T criterion, which would limit odors to within the plants fenceline, as part of the Phase 1 Strategy to meet one of the SSIP LOS goals of providing benefits to impacted communities. As a result, odor impacts would be less than significant.

As described in Section B, Project Description, the BFS modifications would allow it to operate as a 150-mgd, all-weather pump station. Currently, the BFS operates under wet-weather conditions only. Odorous air containing hydrogen sulfide (H_2S) is stripped from the influent wastewater in channels and sump chambers and is currently contained and treated by an existing odor control unit at BFS, which has a capacity of 18,000 cubic feet per minute (cfm) with a 99.5 percent of H_2S

143 D/T values, also known as odor units, measure the number of dilutions needed to make an odor undetectable. A criterion of 5 D/T means that an odor becomes undetectable at a dilution of 5 parts of carbon-filtered air to 1 part of odorous air. Higher values show that more dilution is needed, indicating a more objectionable odor.

144 Brown and Caldwell, CH2M, Black & Veatch, *Odor Characterization Report Southeast Water Pollution Control Plant*, December 2015.

145 Ibid.

146 SFPUC, *Conceptual Engineering Report Volume 2, Technical Memorandum No. 9*, January 2016.

147 SFPUC, *Conceptual Engineering Report Volume 2, Technical Memorandum No. 3*, January 2016.

removal rate.[148] Under the all-weather operations, odorous air would also be generated from the barscreens and gondolas in the operation bay throughout the year.[149] Odorous air in the operation bay, which is currently provided with 14,600 cfm of supply air, is currently not treated but would be treated under proposed project operations. Therefore, a total capacity of 33,000 cfm would be required to treat odorous air from BFS operations. As part of the proposed BFS improvements, the odor control system would be retrofitted to have a capacity of 33,000 cfm and a 99.5 percent H_2S removal rate. The BFS improvements would result in the same H_2S removal rate and would not increase odorous air emissions outside of the facility. Odor impacts from the BFS operation would therefore be less than significant.

Impact C-AQ: The proposed project, in combination with past, present, and reasonably foreseeable future development in the project area, could contribute to cumulative air quality impacts. (Less than Significant with Mitigation, for criteria pollutant during construction and Less than Significant for other air quality impacts)

As discussed above, regional air pollution is, by its very nature, primarily 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 is large enough 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.[150]

The project-level thresholds for criteria air pollutants are levels at which new emissions sources are not expected to contribute to an air quality violation or result in a considerable net increase in criteria air pollutants. As discussed under Impact AQ-1, the proposed project would have an average daily NO_x emission of 105 pounds per day, which would exceed the 54 pounds per day threshold, and the cumulative impact on air quality would thus be significant and the project's contribution would be cumulatively considerable. However, the proposed project's construction emissions (Impact AQ-1) would be less than significant with the implementation of Mitigation Measure M-AQ-1, which would reduce the project's contribution to a less than cumulatively considerable level (less than significant level).

The operational emissions (Impact AQ-2) would not exceed applicable thresholds. Because the project's construction and operational emissions would not exceed the project-level thresholds for criteria air pollutants, the proposed project would not result in a cumulatively considerable contribution to regional air quality impacts.

As previously described, the project site is within the Air Pollutant Exposure Zone and health vulnerability zone, indicating it is an area that already experiences poor air quality. However, as discussed in Impact AQ-3, emissions from construction and operation of the project would be below the applicable thresholds, resulting in a less-than-significant substantial pollutant concentrations impact to sensitive receptors. In addition, the HRA takes into account the

148 San Francisco Public Works, Memorandum from Ricky Choi, P.E., Mechanical Section, SFPW to Victor Shih, Project Engineer, SFPUC, June 9, 2016.
149 Ibid.
150 BAAQMD, *CEQA Air Quality Guidelines*, May 2011, page 2-1.

cumulative contribution of localized health risks to sensitive receptors from sources included in the citywide modeling plus the proposed project's sources. The proposed project would not exceed the lowered, project-level threshold of 0.2 $\mu g/m^3$ for $PM_{2.5}$ concentrations or 7.0 per million persons for cancer risk and therefore would have a less than cumulatively considerable contribution to a significant cumulative impact.

E.8. GREENHOUSE GAS EMISSIONS

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

Greenhouse gas (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 BAAQMD 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 mitigate GHG emissions as part of a larger plan for the reduction of GHGs and describes the required contents of such a plan. The following describes the relevant climate action plan documents prepared by the City and County of San Francisco that present a comprehensive assessment of policies, programs, and ordinances that collectively represent San Francisco's qualified GHG reduction strategy in compliance with the CEQA Guidelines. These GHG reduction actions reduced GHG emissions in 2012 by 23.3 percent compared to 1990 levels,[151] exceeding the year 2020 reduction goals outlined in the BAAQMD's *Bay Area 2010 Clean Air Plan,* Executive Order (EO) S-3- 05, and Assembly Bill (AB) 32 (also known as the Global Warming Solutions Act).[152]

Given that the CCSF has met the state and regional 2020 GHG reduction targets and that San Francisco's GHG reduction goals are consistent with, or more aggressive than, the long-term goals

151 ICF International, *Technical Review of the 2012 Community-wide Inventory for the City and County of San Francisco*, January 21, 2015.

152 Executive Order S-3-05, Assembly Bill 32, and the *Bay Area 2010 Clean Air Plan* set a target of reducing GHG emissions to below 1990 levels by the year 2020.

established under EO S-3-05[153] and EO B-30-15,[154,155] the CCSF's GHG reduction goals are consistent with EO S-3-05, EO B-30-15, AB 32, and the *Bay Area 2010 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 San Francisco's applicable GHG threshold of significance.

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

2004 Climate Action Plan for San Francisco 2004.[156] The Climate Action Plan for San Francisco: Local Actions to Reduce Greenhouse Gas Emissions outlines citywide actions to reduce GHGs in the energy, transportation, and solid waste sectors. The plan includes GHG reduction strategies such as targeting emissions from fossil-fuel use in cars, power plants, and commercial buildings; developing renewable energy technologies like solar, wind, fuel cells, and tidal power; and expanding residential and commercial recycling programs. The plan identifies implementing agencies for GHG reduction strategies in the various sectors. The Climate Action Plan describes actions the SFPUC was taking and intended to take to reduce GHGs at that time.

2010 Strategies to Address Greenhouse Gas Emissions in San Francisco.[157] This document examines the degree to which programs in the 2004 Climate Action Plan have been implemented as well as other programs that were not originally conceived under the Climate Action Plan. The document provides an update on the energy efficiency and renewable energy programs that would help reduce GHG emissions.

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153 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 [$MTCO_2E$]); by 2020, reduce emissions to 1990 levels (approximately 427 million $MTCO_2E$); and by 2050, reduce emissions to 80 percent below 1990 levels (approximately 85 million $MTCO_2E$). 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.

154 Office of the Governor, *Executive Order B-30-15*, April 29, 2015. Available at 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 $MTCO_2E$).

155 San Francisco's GHG reduction goals are codified in Section 902 of the Environment Code and include: (i) by 2008, determine the city's 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.

156 San Francisco Department of the Environment and San Francisco Public Utilities Commission, *Climate Action Plan for San Francisco: Local Actions to Reduce Greenhouse Gas Emissions*, September 2004.

157 San Francisco Planning Department, *Strategies to Address Greenhouse Gas Emissions in San Francisco, 2010*, p. VIII-22. Available online at: http://www.sf-planning.org/index.aspx?page=2627.

2013 San Francisco Climate Action Strategy.[158] SF Environment published an update to the 2004 CAP in 2013. This report provides a summary of progress and examples of successful policies and programs, and outlines a set of actions that can be taken by citizens, businesses, and government. In the energy sector, the document includes a number of areas where the SFPUC has taken action, including moving toward 100% GHG-free and renewable electricity in buildings, implementing energy efficiency programs, and implementing the GoSolarSF incentive program. The Strategy also reported on progress in GHG emissions reductions in the municipal sector, due in part to the SFPUC's carbon-free Hetch Hetchy Power and reductions in natural gas use in municipal buildings, a focus of the SFPUC's energy efficiency program.

2011 Updated Electricity Resource Plan. In Ordinance 81-08, the City and County of San Francisco endorsed a goal for the City to have a GHG free electric system by 2030, generating, deploying and procuring all of its energy needs from renewable and zero-GHG electric energy sources. The purpose of the 2011 Update of San Francisco's 2002 Electricity Resource Plan (2002 ERP) is to identify the next steps that San Francisco must take in order to achieve this goal. It identifies recommendations that promote zero GHG energy, influence procurement of electric resources at the wholesale level, and expands reliable, reasonably-priced, and environmentally sensitive electric service. The most recent annual update prepared for the SFPUC Commission in 2015[159] highlighted the past year's activities, which included: working toward implementation of the CleanPower SF program, offering San Francisco residents and businesses a cleaner electricity supply; completing the Power Enterprise Business Plan, identifying strategies to increase delivery of clean energy supplies in San Francisco; successful certification of the SFPUC's Kirkwood generating units as eligible renewable energy resources under California's Renewables Portfolio Standard (RPS); and initiating GHG-free SFPUC electric service to the residents of the Shipyard, San Francisco's newest neighborhood.

SFPUC Climate Action Plan Annual Reports. Ordinance 81-08 also required each City department to report annually on its own departmental emissions and emissions reductions. SFPUC prepared annual reports to the Climate Action Plan in 2009, 2010, 2011, 2012, 2013, and 2014. The most recent annual report (Climate Action Annual Report Fiscal Year 2012 – 2013) was prepared in 2014. Each annual report summarizes GHG emissions associated with electricity, natural gas and fleet fuels consumed by the SFPUC for the previous fiscal year for its own operations, and highlights the SFPUC's activities to reduce GHG emissions. According to the 2014 report, total GHG emissions from facility energy use (natural gas and electricity) decreased 76 metric tons (2.9%) in FY 12-13 compared to the previous year.

SFPUC Actions to Address Climate Change

Current SFPUC actions to reduce GHG emissions include the following:

- The SFPUC's Renewable Generation program has installed 21 solar photovoltaic projects on municipal facilities, with 8 megawatts (MW) of solar capacity, and continues to plan for additional projects to increase local renewable energy generation. In addition, the SFPUC

158 San Francisco Department of the Environment, *San Francisco Climate Action Strategy*, 2013 Update. October.
159 SFPUC, *Implementation of Electricity Resource Plan*, August 28, 2015.

operates cogeneration plants at its Southeast and Oceanside Wastewater Treatment Plants that generate both electricity and process heat, and are primarily fueled by digester biogas, a by-product of wastewater treatment operations. These facilities generate 2 MW and 1 MW at peak, respectively.

- The SFPUC's GoSolarSF program continues to provide incentives to San Francisco residents, businesses, and nonprofits. In FY 2014-15, $1.9 million in incentives resulted in the installation of 2.2 MW of new local solar generation at over 570 locations in the city.
- The SFPUC's energy efficiency program continues to reduce electricity use and natural gas consumption in municipal buildings year after year, and is expanding its focus in the coming year with new program offerings for the private sector.
- Expanding existing GHG-free electricity programs to serve more customers in San Francisco. In spring 2015, the new residents at the Hunters Point Shipyard became San Francisco's newest green power neighborhood, receiving Hetch Hetchy Power for 100% of their electric needs. May 2016 marked the launch of the CleanPowerSF program, which is now delivering cleaner energy to San Francisco residents and business through the Green (35% renewable) and SuperGreen (100% renewable) enrollment options.
- The SFPUC recently opened the College Hill Learning Garden, in Bernal Heights. This educational site features kid-friendly interactive features such as solar panels, rain gardens, a mini-green roof and a composting toilet, all designed to teach our youngest learners about how they can be stewards of our water, energy, food, and waste systems.
- The SFPUC continues to encourage the use of sustainable transportation in all forms, including changing its diesel purchases from petroleum based diesel and biodiesel to renewable diesel.

Impact C-GG-1: The proposed project would generate GHG 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 GHG emissions. (Less than Significant)

Individual projects contribute to the cumulative effects of climate change by directly or indirectly emitting GHGs during the construction and operational phases. Direct operational emissions include GHG emissions from new vehicle trips and area sources (natural gas combustion). Indirect GHG 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 increase the use of electricity at the site, specifically from operation of the new odor control facility and associated scrubber fans. Therefore, the project would contribute to annual long-term increases in GHGs as a result of increased electricity requirements. There would be no increase in GHGs associated with vehicle trips (mobile sources), as the number of employees is expected to stay the same. Construction activities would also result in temporary increases in GHG emissions. 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 project's GHG emissions related to transportation, energy use, waste disposal, wood burning, and the use of refrigerants.

In implementing the proposed project, the SFPUC would be required to comply with the energy efficiency requirements of the Stormwater Management Ordinance, Commercial Lighting Efficiency Ordinance, Water Efficient Irrigation Ordinance, and Energy Conservation Ordinance. Compliance with these ordinances would promote energy efficiency, thereby reducing the project's energy-related GHG emissions.[160] The electricity required to supply the new Headworks Facility would be supplied by the SFPUC Power Enterprise from facilities at Hetch Hetchy, by way of an interconnection agreement with Pacific Gas & Electric.[161] Generation of this electricity does not cause GHG emissions because the power is generated from hydroelectric facilities.

The proposed project's construction waste–related emissions would be reduced through compliance with the CCSF's Construction and Demolition Debris Recovery Ordinance, Clean Construction Ordinance, and Construction Recycled Content Ordinance. Employee and operations–related solid waste (e.g., recyclables, compostables, and landfill trash) is not expected to increase, as the staffing levels would not change. These regulations serve to reduce GHG emissions from construction activities, vehicles, and equipment.

The proposed project's waste-related emissions would be reduced through compliance with the City's Recycling and Composting Ordinance. These regulations reduce the amount of materials sent to a landfill, thereby reducing GHGs emitted from landfill operations. These regulations also promote the reuse of materials, thus conserving their embodied energy[162] and reducing the energy required to produce new materials.

Compliance with the City's Street Tree Planting requirements would serve to increase carbon sequestration. Other regulations, including those limiting refrigerant emissions would reduce emissions of GHGs. Regulations requiring low-emitting finishes would reduce volatile organic compounds (VOCs). Thus, the proposed project is determined to be consistent with San Francisco's GHG reduction strategy.

These regulations have proven effective, as San Francisco's GHG emissions have measurably decreased when compared to 1990 emissions levels, demonstrating that the CCSF has met and exceeded EO S-3-05, AB 32, and *Bay Area 2010 Clean Air Plan* GHG reduction goals for the year 2020. Other existing regulations, such as those implemented through AB 32, would continue to reduce the proposed project's contribution to climate change. In addition, San Francisco's local GHG reduction targets are consistent with the long-term GHG reduction goals of EO S-3-05, EO B-30-15, AB 32, and the *Bay Area 2010 Clean Air Plan.* Therefore, because the proposed project is

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160 Compliance with water conservation measures reduces the energy (and GHG emissions) required to convey, pump, and treat the water needed for the project.

161 The SFPUC Power Enterprise provides electricity to all City and County of San Francisco (CCSF) facilities. Pacific Gas and Electric Company (PG&E) provides electricity and natural gas to most of Northern California, including the project area. It provides the SFPUC Power Enterprise with transmission and distribution services from Newark (California) to points west, pursuant to an Interconnection Agreement regulated by the Federal Energy Regulatory Commission (FERC). Under this agreement, PG&E transmits and distributes electricity to the SFPUC Power Enterprise customers and would provide power distribution services for the proposed project.

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

consistent with the CCSF's GHG reduction strategy, it is also consistent with the GHG reduction goals of EO S-3-05, EO B-30-15, AB 32, and the *Bay Area 2010 Clean Air Plan*, would not conflict with these plans, and would therefore not exceed San Francisco's applicable GHG threshold of significance.

In addition to compliance with these regulations, the SFPUC is currently taking other actions that further the CCSF's GHG reduction goals, as described above. Applicable existing and future actions at the SEP site include the use of energy-efficient equipment (lighting, HVAC); continued use of the biogas plant to use sewage-produced methane gas that would otherwise be flared off; and assessing additional opportunities to expand biogas generation. The new Headworks Facility would include energy efficiency designs and/or features that include variable frequency drives for the bioscrubber fans, automation of the Headworks such that the number of on-line equipment matches the actual flow and process demands, no redundant HVAC units, and lighting that conforms to Title 24 of the California Energy Code.[163]

As such, the proposed project would result in a less-than-significant impact with respect to GHG emissions. No mitigation measures are necessary.

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[163] Carollo Engineers, E-mail from Pavitra Prabhakar to Victor Shih, SFPUC. July 13, 2016.

E.9. WIND AND SHADOW

Topics:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Not Applicable
9. WIND AND SHADOW—Would the project:					
a) Alter wind in a manner that substantially affects public areas?	☐	☐	☒	☐	☐
b) Create new shadow in a manner that substantially affects outdoor recreation facilities or other public areas?	☐	☐	☐	☒	☐

Impact WS-1: The proposed project would not alter wind in a manner that substantially affects public areas. (Less than Significant)

The SEP, BFS parcel, Pier 94 Backlands, and Pier 94 and 96 areas are located on flat terrain. Wind rose[164] data obtained between 2007 and 2011 for the grid cell[165] for the SEP's on-site meteorological station (located on the rooftop of the SEP administration building at 750 Phelps Street) show that winds in the vicinity are predominantly from the west to southwest, and average wind speeds are light (5.6 mph).[166] Average wind speed in the winter is 3 mph with a maximum gust of 13 mph, and average wind speed in the summer is 9 mph with a maximum gust of 30 mph.[167]

A proposed project's wind impacts are directly related to its height, orientation, design, location, and surrounding development context. Based on wind analyses for other development projects in San Francisco, a building or structure that does not exceed a height of 85 feet generally has little potential to cause substantial changes in ground-level wind conditions. For the purposes of the wind analysis, public areas include the sidewalks along Rankin Street, Evans Avenue, and Phelps Street. The aboveground SEP structures along Evans Avenue include the SEP 010 Influent Control Junction/Southeast Lift Station, SEP 011, and secondary sedimentation tanks. Structures along Phelps Street on the north side of the SEP include the secondary sedimentation tanks and digester tanks. All of the SEP structures are separated from public sidewalks by a perimeter wall.

The proposed project would demolish the existing SEP 010 Influent Control Structure/Southeast Lift Station and SEP 011 and SEP 012 headworks and construct a new Headworks Facility. No changes to the exterior of the BFS would occur, and modifications to its sewer connections would be below ground. Thus, the BFS improvements would not affect wind patterns in the project area. Given the small massing of 398 Quint Street, and because the taller structures at the SEP generally

164 A wind rose is a graphical representation of wind speed and direction over a discrete period of time. It is a 360-degree compass that looks like a flower with petals that represent the direction from which the wind is blowing. The length of each segment of a petal represents the frequency of wind within a speed category. The wind speed categories are identified by different colors in the legend at the bottom of the wind rose figure.

165 "Grid cell" refers to the latitude and longitude position of the sites that are measured for wind speed.

166 Brown and Caldwell, CH2M, Black & Veatch, Odor Characterization Report Southeast Water Pollution Control Plant, December 2015.

167 Ibid. These wind speeds are based on winter and summer sampling events conducted for the SEP *Odor Characterization Report*.

obstruct wind flow from the west/southwest, demolition of this building would have little to no impact on wind patterns.

As described above, the prevailing winds are generally light and typically from the west/southwest. The new 65-foot-tall Headworks Facility would be slightly taller than the 40 to 58-foot-tall existing facilities it replaces; it would be located in the same area as the existing SEP 011 headworks and would be similar in massing. The proposed building would generally be taller, but not to an extent that would alter wind conditions in the vicinity. The proposed building would be similar in massing to the existing headworks structures, therefore it would not alter wind patterns in a manner that affects public use. In addition, the new Headworks Facility would be located within the SEP site, which is restricted from public use and separated from sidewalks by the perimeter wall. For these reasons, this impact would be less than significant.

Impact WS-2: The proposed project would not create new shadow in a manner that substantially affects outdoor recreation facilities or other public areas. (No Impact)

Section 295 of the Planning Code, the Sunlight Ordinance, was adopted in 1984 following voter approval of Proposition K. The ordinance generally prohibits the issuance of building permits for structures greater than 40 feet tall that would cast significant new shade or shadows on certain public open spaces under the jurisdiction of the San Francisco Recreation and Parks Department (SFRPD), unless the San Francisco Recreation and Park Commission determines that the shade or shadow would not have an adverse impact on the use of such property. The nearest public open spaces to the project site under the jurisdiction of the SFRPD include the Youngblood Coleman Playground and Palou & Phelps Mini-Park, approximately 0.45 mile southeast and 0.6 mile south of the project site, respectively.

The SEP site is densely developed with a wide range of buildings varying in size. SEP 011 is a rectangular, one- to four-story structure adjacent to Evans Avenue. It is approximately 390 feet long, 98 feet wide, and 40 feet tall to the grit-handling level, and 58 feet tall at the eastern and western ends of the building.[168] SEP 012 is a one- to three-story structure located at the northwest side of the SEP next to Rankin Street. It is approximately 170 feet long, 90 feet wide, and 25 feet tall to the first-floor roof. At the middle of the building is a three-story element that is approximately 85 feet long, 60 feet wide, and 60 feet tall to the top of the roof.[169] The BFS is approximately 42 feet high and located at the northeast corner of Rankin Street and Evans Avenue. 389 Quint Street is a rectangular, two-story building located at the northwest corner of Evans Avenue and Quint Street. It is the only other structure, aside from the BFS, that is located on the north side of Evans Avenue between Rankin and Quint Streets.

The project proposes to construct a new, 65-foot-tall Headworks Facility in place of the existing SEP 011. Due to the distance and orientation from the project site, shadows from the proposed

168 SFPUC, *SEP Building Info,* Provided to RMC Water and Environment on July 20, 2016.
169 Ibid.

project would not reach the Youngblood Coleman Playground or Palou & Phelps Mini-Park.[170] Therefore, the proposed project would have no impact on parks that are protected by Section 295.

The SEP and BFS are within fenced areas and not accessible by the public. No changes would be made to the exterior of the BFS, and modifications to its sewer connections would be below ground and would not affect shadow patterns in the area. For this analysis, public areas include the sidewalks along Evans Avenue. As described in Section B, Project Description, the new Headworks Facility and perimeter wall would be extended to the boundary of the SEP site. This would result in the new Headworks Facility being located closer to the sidewalk. The new Headworks Facility would cast shadow on adjacent sidewalks along Evans Street at certain times of the day throughout the year, similar to the existing SEP 011 headworks. As described in Impact WS-1, the new Headworks Facility would be slightly taller than the existing facilities it replaces, however height would not increase to an extent that would result in new shadow on adjacent sidewalks and would not affect the use of these sidewalks. Because of its distance from actively used outdoor recreational facilities (approximately 0.45 and 0.6 mile away), and because the new Headworks Facility would not similar in massing of the structures it would replace, the proposed project would not create new shadow in a manner that substantially affects outdoor recreation facilities or other public areas. No impact would occur.

Impact C-WS-1: The proposed project, in combination with other past, present, or reasonably foreseeable future projects in the vicinity of the project site, would not have a cumulative wind impact (No Impact).

The geographic scope for potential cumulative wind impacts encompasses the SEP site, BFS parcel, and immediate vicinity. Cumulative wind impacts could occur if the proposed project, in combination with cumulative projects, would result in aboveground facilities that would alter wind in a manner that substantially affects public areas. However, cumulative projects 1 through 13 in Table 7 would rehabilitate or improve existing facilities within the SEP site that would not exceed current building heights. Any new aboveground facilities, such as the Biosolids Digester Facility (project number 1 in Table 7), would be restricted to a height of 65 feet due to height limits established in the zoning code, and buildings less than 85 feet tall have little potential to change ground-level wind conditions. Therefore, the cumulative projects do not have the potential to substantially alter wind. Furthermore, the proposed project and cumulative projects would be located within the SEP, which is restricted from public use. For these reasons, there would be no cumulative wind impacts that would affect public use areas.

Impact C-WS-2: The proposed project, in combination with other past, present, or reasonably foreseeable future projects in the vicinity of the project site, would not have a cumulative shadow impact (No Impact).

The geographic scope for potential cumulative shadow impacts encompasses the SEP site, BFS parcel, off-site staging areas, and immediate vicinity. Cumulative shadow impacts could occur if the proposed project, in combination with cumulative projects, would result in aboveground

[170] San Francisco Planning Department, *New Headworks Shadow Fan Assuming 65' Tall Rectangle*, provided to RMC Water and Environment on October 14, 2016.

facilities that would create new shadows in a manner that substantially affects recreational facilities or public areas. Cumulative projects 1 through 13 in Table 7 would construct, rehabilitate, or improve facilities within the SEP site. New structures such as project number 1 (Biosolids Digester Facility) would not exceed the 65-foot height limit of the site. Given the distance to parks, and because the proposed project and cumulative projects would be located within the SEP (which is restricted from public use), the project would not create new shadows that would affect recreational facilities or other public areas where people congregate to enjoy the outdoors.[171] As a result, there would be no cumulative shadow impacts.

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[171] Ibid.

E.10. RECREATION

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

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, and would not physically degrade existing recreational resources. (No Impact)

There are no designated recreational facilities managed by the SFRPD within or immediately adjacent to the SEP, BFS parcel, Pier 94 Backlands, or the Pier 94 and 96 staging areas. There is a grassy area with scattered street trees along Phelps Street adjacent to the SEP, but this area is not considered to be a recreational facility. However, the following recreational facilities are within walking distance of the SEP, BFS parcel, and the off-site staging areas:

- Palou & Phelps Mini-Park is a mini-park operated by the SFRPD at the southeast corner of Palou Avenue and Phelps Street, approximately 0.6 mile south of the project site. This mini-park includes community green space with benches, slides, and a jungle gym.[172]

- Youngblood Coleman Playground is at 1398 Hudson Street, approximately 0.45 mile east of the project site. The SFRPD manages this approximately 6-acre park that serves the Bayview–Hunters Point neighborhood and includes artificial turf soccer and softball fields, basketball and tennis courts, and picnic areas.[173]

- Heron's Head Park is a 22-acre open space and wildlife habitat managed by the Port of San Francisco at the eastern terminus of Cargo Way at Jennings Street, just south of Pier 96.[174]

172 San Francisco Recreation and Parks, *Palau & Phelps Park,* 2010-2016. Available at http://sfrecpark.org/destination/palou-phelps-park/, accessed on March 21, 2016.

173 San Francisco Recreation and Parks, *Youngblood Coleman Playground,* 2010–2016. Available at http://sfrecpark.org/destination/youngblood-coleman-playground/, accessed on March 21, 2016.

174 City and County of San Francisco, Port of San Francisco, *Heron's Head Park*. Available at http://www.sf-port.org/index.aspx?page=210, accessed on March 21, 2016.

- The Port of San Francisco also manages the 1.5-acre Pier 94 Wetlands,[175] a small salt marsh that provides wildlife habitat and wildlife viewing, located west of the Pier 94 staging area.

- The San Francisco Bay Trail is a multipurpose recreational trail that provides opportunities for walking, jogging, and bicycling.[176] Heron's Head Park contains an entrance to a segment of the Bay Trail that extends through the park via a dirt/gravel path. A paved portion of the Bay Trail extends along Cargo Way from Heron's Head Park to Amador Street and crosses Amador Street to Illinois Street.[177]

The proposed project would not directly affect recreational facilities (parks and trails) because there are no recreational facilities within the project site or the off-site staging areas. All of the recreational facilities listed above would remain open during construction. Palou & Phelps Mini-Park and Youngblood Coleman Playground are far enough from the project site, off-site staging areas, and haul routes such that construction would not affect these facilities.

The new Headworks Facility would have the same capacity as the existing headworks facilities, and for this reason, as described in Section E.3, Population and Housing, the project is not expected to induce growth. The proposed project would not construct new residential or other uses that would generate an increased demand for parks and recreational facilities. Because the project would not induce population growth, it would not increase the utilization or physical deterioration of parks and recreational spaces in the vicinity of the project site or those citywide. No impacts related to direct or indirect physical deterioration of recreational resources would occur.

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

The project would construct a new Headworks Facility and does not propose new recreational facilities. The project would not increase existing operations staff levels at the SEP, thus demand for use of existing recreational facilities near the SEP would not change; ongoing demand would continue to be met by existing parks and recreational facilities. In addition, the project is not expected to induce growth that would in turn generate new recreational demand. Therefore, the proposed project would not necessitate the construction of new recreational facilities or the expansion of existing facilities. No impact would occur.

Impact C-RE: The proposed project, in combination with past, present, and reasonably foreseeable future projects, would not result in cumulative recreational impacts. (No Impact)

The geographic scope for potential recreation impacts includes the project site and recreational resources in the Bayview–Hunters Point neighborhood. Cumulative impacts could occur if the development projects in Table 7 would increase the use of recreational facilities, in turn causing physical deterioration of the facilities or requiring construction of new facilities that could

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175 Port of San Francisco, *Pier 94 Wetlands*. Available at http://sfport.com/pier-94-wetlands, accessed on March 21, 2016.

176 San Francisco Bay Trail, *Welcome to the San Francisco Bay Trail*. Available at http://baytrail.org/about-the-trail/welcome-to-the-san-francisco-bay-trail/, accessed March 21, 2016.

177 San Francisco Bay Trail, *San Francisco Bay Trail Brochure*. Available at http://baytrail.org/wp-content/uploads/2015/12/2016_Bay-Trail-Brochure.pdf, accessed March 21, 2016.

adversely affect the environment. Cumulative projects in the Bayview–Hunters Point area, such as 26 (Candlestick Point–Hunters Point Shipyard Phases I and II), 27 (Event Center and Mixed-Use Development at Mission Bay Blocks 29-32), and 28 (Pier 70 Waterfront Site), would result in an increase in housing and employment that could substantially increase the use of recreational facilities. However, these cumulative projects include the development of new parks, recreational facilities, and open space, and therefore would not result in a cumulative impact on other such resources in the vicinity. As discussed above, the proposed project would not generate or accommodate growth and consequently would not result in increased use or physical deterioration of recreational facilities, or require construction of new facilities. Therefore, the proposed project has no impact and would not result in a cumulative impact on recreation.

E.11. UTILITIES AND SERVICE SYSTEMS

Topics:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Not Applicable
11. UTILITIES AND SERVICE SYSTEMS— Would the project:					
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☒	☐	☐
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐	☐
c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐	☐
d) Have sufficient water supply available to serve the project from existing entitlements and resources, or require new or expanded water supply resources or entitlements?	☐	☐	☒	☐	☐
e) Result in a determination by the wastewater treatment provider that would serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐	☐
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐	☐

Impact UT-1: The proposed project would not exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board. (Less than Significant)

This criterion is discussed in Section E.15, Hydrology and Water Quality, Impact HY-1, of this Initial Study.

Impact UT-2: The proposed project would not require or result in the construction of new water, wastewater treatment, or new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects; and would not result in a determination by the wastewater treatment provider that would serve the project that it has inadequate capacity to serve the project's demand. (Less than Significant)

The proposed project site is served by the city's combined sewer system, which collects and treats the majority of the wastewater and stormwater at one of three SFPUC treatment facilities, including the SEP. In the combined sewer system, stormwater and wastewater are directed to treatment plants before being released into San Francisco Bay or the Pacific Ocean. Discharges from the SEP

and other Bayside facilities are treated to standards specified in San Francisco's National Pollutant Discharge Elimination System (NPDES) permit, which is described in Section E.15, Hydrology and Water Quality.

The proposed project, which is an element of the CCSF's SSIP, would entail the construction of facilities at the SEP, including a replacement Headworks Facility and new odor control structure, in addition to modifying the BFS to provide an efficient treatment system to improve screening and grit removal. The project would not place any additional demand on wastewater treatment capacity. The proposed project would not expand existing facilities, but would require the demolition of facilities to construct the new Headworks Facility. The project itself, as discussed in Impact UT-3 below, would not result in the need for additional water supply or generate additional wastewater.

The new Headworks Facility would have emergency eyewash/shower stations that require water and generate wastewater. Water supply would be provided via connections to existing water supply facilities at the SEP, as occurs under existing conditions, and wastewater would ultimately return to the SEP for treatment. Process drainage from the new Headworks Facility would be pumped, if necessary, so that it enters the SEP downstream of raw wastewater metering and sampling.[178] Sanitary drainage from the new Headworks Facility would be routed directly to the nearest local sewer tributary (i.e., the 48-inch-diameter Evans Avenue sewer).[179] The stormwater runoff from the new Headworks Facility site into the combined sewer system would be similar to existing conditions given that the amount of impervious surfaces would not change substantially.

Project-related wastewater and stormwater would be treated according to standards contained in the City's NPDES permit for the SEP prior to discharge into the San Francisco Bay. The NPDES standards are set and regulated by the RWQCB. The proposed project would meet the wastewater pre-treatment requirements of the SFPUC, as required by the San Francisco Industrial Waste Ordinance, to meet RWQCB requirements.

The proposed project would be located within developed areas, and no new impervious surface areas would be created as a result of the project. As noted in the Project Description, Section B.3.10, Compliance with Stormwater Management Ordinance, the SFPUC would construct new facilities at the SEP to comply with the City's Stormwater Management Ordinance. Please refer to Impact WQ-1 for discussion of storm drainage and runoff. The project would not require the expansion of existing facilities (beyond those proposed as part of the project), and impacts related to water, wastewater, and stormwater treatment would be less than significant.

Impact UT-3: The proposed project would have sufficient water supply available and would not require new or expanded water supply resources or entitlements. (Less than Significant)

The existing headworks facility requires water for personnel uses, fire protection, and several process uses. There are three primary water distribution systems within the SEP: W1, W2, and W3.

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178 SFPUC, *Alternatives Analysis Report TO-23 New Headworks Facility Southeast Water Pollution Control Plant*, February 2014.

179 Ibid.

The W1 distribution system is potable water from the city water distribution system and is used for personnel, non-process water uses such as eyewash/emergency shower equipment. W2 is treated secondary effluent that has been filtered. The W2 distribution system is currently used to supply fire protection water for facilities within the SEP perimeter. W3 is treated secondary effluent that has been strained and disinfected with sodium hypochlorite, which is currently used for headworks processes such as screen sprays, screenings washing, grit washing, and process cooling.[180]

As described in Section B, Project Description, the new Headworks Facility would replace and consolidate the functions of the SEP 011 and SEP 012 headworks, construct a new odor control structure, and modify the BFS to provide an efficient treatment system to improve screening and grit removal. The project does not propose uses that would generate increased demand for water supply.

The use of potable water for construction activities would be minimal. As described in Section B, Project Description, the San Francisco Public Works Code, Article 21, restricts the use of potable water for soil compaction and dust control activities associated with any construction project in the city and requires the use of recycled water, well water, or groundwater. SEP recycled water would be used, consistent with Title 22 of the California Code of Regulations (Division 4), which allows use of recycled water for dust control on roads and streets, backfill consolidation around nonpotable piping, and soil compaction, as well as for cleaning roads, sidewalks, and outdoor work areas. The use of recycled water in compliance with Title 22 of the California Code of Regulations would reduce any use of potable water for construction activities.

Operational water supply needs for the new Headworks Facility are expected to be similar to current conditions. Potable water would continue to be provided through the existing W1 supply system. Potable water supply requirements would be minimal, similar to existing conditions, and restricted to eyewash/emergency shower equipment required for worker safety during operations. The W3 supply system would continue to supply process water and has sufficient capacity to accommodate the demands associated with the new Headworks Facility.[181] The W2 supply system has also been identified as suitable for certain process uses if sufficient supply is available.[182] Thus, operation of the proposed project is not expected to require more water supply than would be available through existing entitlements and resources, nor would it require new or expanded water supply resources or entitlements; therefore, this potential impact would be less than significant.

Impact UT-4: The proposed project would be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs. (Less than Significant)

In September 2015, the CCSF approved an agreement with Recology, Inc. for the transport and disposal of the city's municipal solid waste at the Recology Hay Road Landfill in Solano County. San Francisco began disposing its municipal solid waste at Recology Hay Road Landfill in January

180 Ibid.
181 Ibid.
182 Ibid.

2016, and that practice is expected to continue for approximately 9 years, with an option to renew the agreement thereafter for an additional 6 years.[183] The Hay Road Landfill has a maximum permitted capacity of 37 million cubic yards; it is permitted to accept up to 2,400 tons per day and has a remaining capacity of 30.4 million cubic yards.[184]

The CCSF has adopted a number of policies to promote zero-waste practices. The San Francisco Construction and Demolition Ordinance (Ordinance No. 27-06) requires that at least 65 percent of construction and demolition debris be recycled or diverted from landfills.[185] San Francisco had a goal of 75 percent solid waste diversion by 2010 and has a goal of 100 percent solid waste diversion by 2020.[186] San Francisco diverted 80 percent of its solid waste in 2010.[187] This ordinance would apply only to the nonhazardous and undesignated construction and demolition waste generated during the project.

The project could significantly affect solid waste disposal facilities if it were to generate volumes of waste material that exceeded the local waste diversion goals or daily tonnage limit of local landfills. Waste materials associated with the project would primarily be generated during construction and would consist of excavated material and construction debris. Construction debris would include materials such as excavated soils, asphalt, wood, concrete, pipes, and metal.

As described in Section B, Project Description, construction of the proposed project would generate approximately 61,000 cubic yards of excavated material and 44,300 cubic yards of demolished material. All waste materials would be stockpiled on site and separated according to waste characterization criteria. The materials would then be either recycled or disposed of at an off-site permitted facility in compliance with applicable regulatory standards.

Because the proposed project would also involve the full demolition of existing structures, including the SEP 010 Influent Control Junction/Southeast Lift Station, SEP 011, SEP 012, and 398 Quint Street, the SFPUC would be required to prepare a demolition debris recovery plan as part of the waste diversion plan. In compliance with the Construction and Demolition Ordinance, the SFPUC would submit a waste diversion plan and demolition debris recovery plan to the San Francisco Department of Environment, specifying that at least 65 percent of the project's nonhazardous excavated soil and construction debris would be recycled. The proposed project would recycle 65 percent (or approximately 71,700 cubic yards) of construction demolition materials and dispose of the remaining 35 percent (or approximately 38,600 cubic yards) at

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183 City and County of San Francisco Planning Department, *Better Market Street Project Initial Study Planning Department Case No. 2014.0012E*, March 30, 2016. Available at http://sfmea.sfplanning.org/2014.0012E_BMS_Initial%20Study%20document-Final.pdf, accessed April 15, 2016.

184 CalRecycle, *Facility/Site Summary Details: Recology Hay Road (48-AA-0002)*. Available at http://www.calrecycle.ca.gov/SWFacilities/Directory/48-aa-0002/Detail/, accessed April 15, 2016.

185 City and County of San Francisco Department of the Environment, San Francisco Ordinance No. 27-06, Environment Code Chapter 14: Construction and Demolition Debris Recovery Ordinance, 2006.

186 San Francisco Department of the Environment, *Zero Waste – Frequently Asked Questions (FAQs)*. Available at http://sfenvironment.org/zero-waste/overview/zero-waste-frequently-asked-questions-faqs, accessed on July 18, 2016.

187 Ibid.

Altamont Landfill or Hay Road Landfill. Due to the age of the structures proposed for demolition, a portion of the non-recyclable demolition debris is expected to be asbestos-containing waste and lead-containing materials.

Recyclable and non-recyclable materials from construction would be hauled to Republic Services Ox Mountain Landfill in Half Moon Bay. Lead and asbestos building materials and contaminated soils would be hauled to the Altamont or Hay Road Landfills. The proposed project would generate a total of approximately 110,300 cubic yards of waste, thus the remaining capacity at the Ox Mountain, Altamont, and Hay Road Landfills (collectively 103 million cubic yards)[188, 189, 190] would be sufficient to accommodate construction waste.

Once the new Headworks Facility is in operation, the facility's increased efficiency would result in an increased number of hauling trips to dispose of the additional grit and screenings material. The new Headworks Facility is projected to be capable of removing more than 90 percent of the total grit mass (whereas the current system has an overall removal efficiency of 61 percent). The new Headworks Facility would produce approximately 3,486 cubic yards of screenings material per year, and 6,600 wet tons of grit per year.[191] In total, this would require an average of approximately three screenings truck trips and six grit truck trips per week (an increase of three truck trips per week). Screenings would be hauled to Recology Hay Road or Altamont, and grit would be hauled to Republic Ox Mountain. The remaining capacities of these landfills are sufficient to continue accommodating the new Headworks Facility screenings and grit. As for non-process-related solid waste, the project would be required to comply with San Francisco Ordinance 100-09, the Mandatory Recycling and Composting Ordinance, which requires everyone in the city to separate their refuse into recyclables, compostables, and trash. Given this, and given the long-term capacity available at the landfills, the solid waste generated by project construction and operation would not cause the landfills to exceed their permitted capacity, and the project would therefore have a less-than-significant impact.

Impact UT-5: The construction and operation of the proposed project would comply with all applicable statutes and regulations related to solid waste. (No Impact)

The California Integrated Waste Management Act of 1989 (AB 939) requires municipalities to adopt an integrated waste management plan to establish objectives, policies, and programs relative to waste disposal, management, source reduction, and recycling. In addition, and as described in Impact UT-3, the San Francisco Construction and Demolition Ordinance (Ordinance No. 27-06) requires that a minimum of 65 percent of all construction and demolition debris be recycled and diverted from landfills. San Francisco Ordinance No. 100-09, the Mandatory Recycling and Composting Ordinance, requires all San Francisco residents to separate their refuse into

188 CalRecycle, *Facility/Site Summary Details: Altamont Landfill & Resource Recovery (01-AA-0009)*, 2015. Available at http://www.calrecycle.ca.gov/SWFacilities/Directory/01-AA-0009/Detail/, accessed March 22, 2016. The Altamont Landfill has a remaining capacity of 45.7 million cubic yards.

189 CalRecycle, *Facility/Site Summary Details: Corinda Los Trancos Landfill (Ox Mtn) (41-AA-0002)*, Available at http://www.calrecycle.ca.gov/SWFacilities/Directory/41-AA-0002/Detail/, accessed April 15, 2016. The Ox Mountain Landfill has a remaining capacity of 26.9 million cubic yards.

190 The Hay Road Landfill has a remaining capacity of 30.4 million cubic yards.

191 SFPUC, *Conceptual Engineering Report Volume 2, Technical Memorandum No. 16*, January 2016.

recyclables, compostables, and trash. The project's construction and operations would be subject to these ordinances and all other applicable statutes and regulations related to solid waste. In addition, the landfills are permitted for the types of waste generated by project construction. Therefore, the proposed project would comply with applicable federal, state, and local solid waste regulations and would have no impact.

Impact C-UT: The proposed project, in combination with other past, present, and reasonably foreseeable projects, would not contribute to cumulative impacts related to utilities and service systems. (No Impact)

The geographic scope of impacts on wastewater treatment capacity would include other projects that would create new sources of wastewater requiring treatment at the SEP during construction of the proposed project. For landfill capacity during construction, the geographic scope includes the service areas of San Francisco, Alameda, and San Mateo Counties where recycling, reuse, and disposal of construction-related waste could occur. For compliance with solid waste statutes and regulations, the geographic area encompasses the service areas of San Francisco, Alameda, and San Mateo Counties.

Most of the cumulative projects in Table 7 would generate construction- and operation-related waste and would dispose of the waste in off-site disposal facilities, which could result in a significant cumulative impact on landfill capacity if the identified projects were to generate enough debris to substantially reduce available landfill capacities. However, construction and operation-related waste of the proposed project and cumulative projects would be partially offset by existing San Francisco ordinances and policies regarding waste reduction. The City and County of San Francisco currently exceeds statewide goals for reducing solid waste and is expected to reduce solid waste volumes further in the future, resulting in a decreasing share of total waste that requires deposition in landfills.

As discussed in Impact UT-4, the proposed project would be required to divert at least 65 percent of the nonhazardous construction waste from off-site disposal facilities. Similarly, each of the cumulative projects would also be required to comply with the San Francisco Construction and Demolition Debris Recovery Program to divert waste from available landfills. The operation of the proposed project would not contribute considerably to significant regional impacts on landfill capacity because it would comply with City and County of San Francisco requirements to reduce solid waste, as would other development projects that would also contribute waste to the city's landfills. For these reasons, the proposed project, when considered together with the cumulative projects, would not result in a cumulatively considerable impact related to landfill capacities.

As with the proposed project, construction activities associated with the cumulative projects could cause sediment and pollutants to enter the combined sewer system, which could increase the demand on the combined sewer system. These projects would be subject to the same set of regulations as the proposed project (i.e., a discharge permit would be required for all construction-related discharges to the combined sewer system). Permit requirements would ensure that discharges would not exceed the volume or treatment requirements of the SEP. Therefore, the

proposed project, in combination with the cumulative projects, would not result in a cumulatively significant impact related to construction-related discharges.

Cumulative projects in Table 7 that would generate new uses and/or result in population, housing, and employment growth include project numbers 24 (San Francisco Wholesale Produce Market Expansion), 26 (Candlestick Point-Hunters Point Shipyard Phase I and II Development Project), 27 (Event Center and Mixed-Use Development at Mission Bay Blocks 29–32), 28 (Pier 70 Waterfront Site), and 28 (Southern Waterfront Gateway Sites). The projects could create a cumulatively significant demand for utilities (e.g., water, wastewater, and stormwater capacities) that could require the expansion of existing facilities, the construction of which could have adverse impacts on the environment. However, as described in Impact UT-3, the new Headworks Facility would not increase the wastewater treatment capacity, nor would it result in increased demand for water, wastewater, and stormwater capacity. Therefore, the proposed project would not contribute considerably to cumulative impacts related to utilities and service systems.

E.12. PUBLIC SERVICES

Topics:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Not Applicable
12. PUBLIC SERVICES— Would the project:					
a) Result in substantial adverse physical impacts associated with the provision of, or the 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 public services such as fire protection, police protection, schools, parks, or other services?	☐	☐	☐	☒	☐

Impact PS-1: The proposed project would not result in adverse physical impacts associated with the provision of, or the 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 public services such as fire protection, police protection, schools, and other services. (No Impact)

The San Francisco Police Department (SFPD) and San Francisco Fire Department (SFFD) provide emergency services in the project area. The project site is located in the Bayview Police District, which covers the southeastern part of San Francisco. The Bayview Police Station is located at 201 Williams Avenue, less than 1 mile from the project site. The SFPD also maintains a relationship with the SFPUC through the SFPUC liaison, who provides site inspections and makes recommendations for safeguarding water supplies.[192]

The SFFD provides fire protection, responds to other emergency situations, including hazardous materials incidents, and provides medical aid and fire prevention and safety training. SFFD stations within 1 mile of the SEP include Station No. 9 at 2245 Jerrold Avenue, Station No. 17 at 1295 Shafter Avenue, Station No. 25 at 3305 Third Street, Station No. 37 at 2430 San Bruno Avenue, and Station No. 49 at 1415 Evans Avenue.[193]

As discussed in Section E.3, Population and Housing (Impact PH-1), the proposed project would not result in population growth and therefore would not increase the demand for public services. The new Headworks Facility would be subject to and would comply with the regulations of the California Fire Code, which establishes requirements pertaining to fire protection systems, including the provision of state-mandated smoke alarms, fire extinguishers, appropriate building access, and emergency response notification systems. Project operations would not require additional maintenance personnel, and thus the project would not increase the number of service calls or the service population in the area. Given that the proposed project is located in proximity

192 San Francisco Police Department, *Together We Can San Francisco Police Department 2014 Annual Report.* Available at http://sanfranciscopolice.org/annual-reports.

193 San Francisco Fire Department, *Fire Station Locations*. Available at http://sf-fire.org/fire-station-locations, accessed on March 22, 2016.

to and already served by police and fire protection services, and would not result in population growth, there would be no impact related to the provision of new or altered public service facilities.

Impact C-PS: The proposed project, in combination with other past, present, or reasonably foreseeable projects, would not have a significant cumulative impact on public services. (No Impact)

The geographic scope for potential cumulative public service impacts encompasses projects in the service areas of the public service providers. Cumulative development in the service areas could incrementally increase the demand for public services (i.e., through the addition of employees or residents), which could result in the need for new or altered government facilities, the construction of which could have adverse cumulative impacts on the environment. However, as described in Impact PS-1, the proposed project would not increase the demand for public services during construction and operation and because there would no impact, the project would not contribute to the potential cumulative impact resulting from the need for new or altered government facilities.

E.13. BIOLOGICAL RESOURCES

Topics:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Not Applicable
13. BIOLOGICAL RESOURCES— Would the project:					
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☒	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☒	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☐	☒

The project site is not located in an area covered by an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan. Therefore, Topic E.13(f) is not applicable.

Impact BI-1: The proposed project would not 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. (No Impact)

A review of the California Natural Diversity Database (CNDDB), U.S. Fish and Wildlife Service (USFWS), and California Native Plant Society (CNPS) databases identified 50 special-status animal

and plant species[194] in the vicinity of the project area. However, the entirety of the SEP, BFS parcel, and the nearby staging areas are within paved areas with minimal landscaping in the Bayview–Hunters Point neighborhood of San Francisco, and all construction would take place in or beneath paved or developed areas. The results of these database searches and species lists were used to determine the potential special-status species that may occur in the project area.[195]

The SEP, BFS parcel, and off-site staging areas are located within a heavily urbanized and industrial area and covered by impervious surfaces. Historically, urban development has dominated these areas of San Francisco, including the project area, and the vast majority of native habitat has been removed. Due to the area's longstanding industrial development, no special-status species have a moderate or high potential to occur at the project site, and it is unlikely that the project would have direct or indirect adverse effects on any of the special-status plant or wildlife species that may occur in the area. This is because either the project site's developed, industrialized environment does not provide suitable habitat, or because the known range for the species is outside of the project site.

The Pier 94 Backlands, Pier 94 and Pier 96 are highly disturbed areas that are used for stockpiling, construction equipment and vehicle storage, and the SFPD emergency vehicle operations course. Pier 94 and Pier 96 are paved but undeveloped. The Pier 94 Backlands is unpaved and has been primarily cleared of vegetation to stockpile materials and debris, or for Port of San Francisco parking and structures.[196] Some limited habitat is present outside of the staging areas, however as described in Section B, Project Description, the staging areas have been designed to be at least 100 feet away from the Pier 94 Wetlands area. Native coyote bush (*Baccharus pilularis*) and non-native grasses and shrubs can be found in portions of the Pier 94 Backlands bordering the stockpiled soil and aggregate.[197] Ruderal areas provide limited foraging or nesting habitat for a few birds and small mammals. Wildlife species occurring in ruderal areas are generally those that tolerate proximity to human activity and disturbance.

Most recorded observations of special-status wildlife species in the vicinity of the project area are historical, and the species are currently considered extirpated or potentially extirpated. Therefore, there is no potential for special-status species to be found within the SEP, BFS parcel, Pier 94 Backlands, Pier 94 and 96 staging areas, and project implementation would have no impact on candidate, sensitive, or special-status species directly or through habitat modification.

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194 The term "special-status" species includes species that are listed and receive specific protection defined in federal or state endangered species legislation, as well as species not formally listed as "threatened" or "endangered" but designated as "rare" or "sensitive" on the basis of adopted policies and expertise of state resource agencies or organizations, or local agencies such as counties, cities, and special districts. A principal source for this designation is the California "Special Animals List" (CDFW, 2011).

195 RMC Water and Environment, USFWS, CNDDB, and CNPS Special-Status Species List, May 2016.

196 ESA, Botanical and Wildlife Surveys Conducted on July 30 and September 23, 2015.

197 Ibid.

Impact BI-2: The proposed project would not 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. (No Impact)

The project site and off-site staging areas do not include riparian habitat or other sensitive natural communities as defined by the CDFW and USFWS. The proposed project would not result in any adverse effects on any riparian habitat. As a result, there would be no impact to riparian habitat or other sensitive natural communities as defined by the CDFW and USFWS and no further analysis of this issue is required.

Impact BI-3: The proposed project would not have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means. (Less than Significant)

The SEP, BFS parcel, and off-site staging areas are located in heavily disturbed areas and do not contain any Waters of the U.S., as defined by Section 404 of the Clean Water Act, or Waters of the State, as defined by the SWRCB under the Porter-Cologne Water Quality Control Act. Therefore, no wetland impact at the project site would occur.

There are no wetlands within the off-site staging areas, but two are present in the vicinity: a wetland swale west of the Pier 94 Backlands staging area, and the Pier 94 Wetlands west of the Pier 94 staging area. The SFPUC has proposed the boundaries of the Pier 94 Backlands and Pier 94 staging areas such that they are at least 100 feet away from these wetland features (see Project Description, Section B.4.1, Construction Staging).[198] Therefore, construction activities for the proposed project would not have a direct impact on these wetlands. In addition, as discussed in Impact HY-1, the SFPUC would require the construction contractor to develop and implement a stormwater pollution prevention plan (SWPPP) under the Construction General Permit. During construction, the SFPUC would also conduct routine inspections of all best management practices (BMPs) to document compliance and identify deficiencies to be corrected (see Project Description Section B.4.5, Erosion and Sediment Control Plan). In addition, implementation of construction site BMP requirements developed to comply with the Construction General Permit at the off-site staging areas, as proposed, would ensure that stormwater runoff during construction would not adversely affect nearby wetlands. Therefore, any potential impacts on wetlands would be less than significant.

198 SFPUC, Personal communication from Monika Krupa to Robin Cort et al regarding RFI#4 and responses, February 23, 2016.

Impact BI-4: The proposed project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. (Less than Significant)

As described above, the SEP, BFS parcel, and off-site staging areas are industrial and developed in nature. Given these conditions, the proposed project would not interfere with wildlife movement or impede the use of any nursery sites. No migratory birds are expected to nest in the SEP, BFS parcel, and off-site staging areas.[199] The project would require the removal of trees along Evans Avenue and Phelps Street. This analysis reasonably presumes that birds habituated to urban disturbance are capable of occupying the habitats that these street trees provide, and there is the potential for nesting birds to be present in these trees. Removal of the trees during the nesting season could result in nest abandonment, destruction, injury or mortality of nestlings, and disruption of reproductive behavior during the breeding season. The proposed project would be subject to the requirements of the Migratory Bird Treaty Act (MBTA) which protects migratory bird species. Compliance with the MBTA would ensure that trees would either be removed when birds are not nesting or surveys would be conducted to ensure that birds are not nesting in trees proposed for removal during nesting season. If needed, no disturbance buffers would be used to prevent disruption of nesting. The proposed project would not interfere with the movement of any migratory wildlife and impacts would be less than significant.

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

Approximately 82 trees (34 trees along the frontage of Evans Avenue and 48 trees along Phelps Street) would be removed for project construction. The San Francisco Planning Department, San Francisco Department of Building Inspection, and San Francisco Department of Public Works have established guidelines to ensure that legislation adopted by the Board of Supervisors governing the protection of trees is implemented. Specifically, the Urban Forestry Ordinance (Article 16 of the Public Works Code, Sections 8.02–8.11) requires the disclosure and protection of landmark, significant, and street trees (collectively referred to as "protected trees"). Landmark trees must meet criteria for age, size, shape, species, location, historical association, visual quality, or other contribution to the city's character. Significant trees are trees within 10 feet of the property edge of the sidewalk and greater than 20 feet in height, or that have a canopy greater than 15 feet in diameter or a trunk greater than 12 inches in diameter at breast height. Street trees are trees within the public right-of-way.

There are no landmark trees along Evans Avenue or Phelps Street or at the off-site staging areas.[200] Of the 82 trees to be removed, approximately 42 meet the criteria for a significant tree. The proposed project would comply with the Urban Forestry Ordinance. Removal of street trees or significant trees would require that the SFPUC plant an appropriate replacement tree on the project site or along the street or pay an in-lieu fee. The SFPUC would comply with the Urban Forestry

199 RMC Water and Environment, USFWS, CNDDB, and CNPS Special-Status Species List, May 2016.

200 City and County of San Francisco, *Significant and Landmark Trees.* Available at http://sfdpw.org/significant-and-landmark-trees, accessed on April 8, 2016.

Ordinance by following these requirements. As a result, impacts on protected trees would be less than significant.

Impact C-BI-1: The proposed project, in combination with past, present, and reasonably foreseeable future projects in the vicinity of the site, would not have a significant cumulative impact on biological resources. (Less than Significant)

The geographic scope for cumulative biological resource impacts encompasses the SEP site, BFS parcel, and off-site staging areas. Potential cumulative impacts on biological resources relate to the removal of protected trees; modification or interference with existing habitats, sensitive natural areas, riparian habitats, or federally protected wetlands and migratory wildlife corridors; and conflicts with adopted regulations, plans, or policies intended to protect and preserve rare or endangered species and their habitats. The cumulative projects at the SEP site include project numbers 1 through 13 in Table 7. Other projects in the immediate vicinity of the BFS parcel and off-site staging areas include project numbers 14 (Central Bayside System Improvement Project), 29 (Pier 90-94 Backlands Planning), 32 (Quint Street Lead Track), 31 (Asphalt and Concrete Recycling and Production Plant, and 33 (Pier 96 Bulk Export Terminal. As described above, the SEP, BFS parcel, Pier 94 and Pier 96 are located within a heavily urbanized and industrial area and largely covered by impervious surfaces, and do not contain habitat that could support sensitive species and no impact would occur. The Pier 94 Backlands has been primarily cleared and the ruderal areas provide limited foraging or nesting habitat. As described above, wildlife species occurring in ruderal areas are generally those that tolerate proximity to human activity and disturbance. Once construction is complete, the off-site staging areas would no longer be used. The proposed project has no impact related to modifying habitats, sensitive natural areas, or riparian habitats.

The proposed project, Biosolids Digester Facilities Project, and project numbers 31 through 33 in Table 7 would include activities at Pier 94 and Pier 94 Backlands that could affect the two wetlands areas that are located in the vicinity. Cumulative impacts could be significant if those areas are not protected, and any contribution of the proposed project to this impact could be cumulatively considerable. However, the SFPUC proposes to limit the boundaries of staging areas at this location such that they are at least 100 feet away from these wetland features, and this analysis presumes that projects conducted by the Port would also include features to ensure avoidance of impacts to these wetlands. Therefore, the potential cumulative impact on wetlands is expected to be less than significant.

Construction of the proposed project and cumulative projects would occur in developed, industrial areas, and limited removal of trees could occur. Tree removal could have a significant cumulative impact if the identified projects were to conflict with any local policies or ordinances protecting trees or other biological resources. The removal of 82 trees along Evans Avenue and Phelps Street for construction of the proposed project could be a cumulatively considerable contribution to such impacts. However, as discussed in Impact BI-5, the proposed project would comply with the requirements of the Urban Forestry Ordinance. Thus, the proposed project would include compensation for tree removal, and therefore would not have a cumulatively considerable impact related to conflicts with the City's adopted plans concerning the preservation of trees.

Construction of the cumulative projects would occur in developed, industrial areas, and limited removal of trees could occur. The removal of trees during nesting season could result in a significant cumulative impact on nesting migratory birds. Similar to the proposed project, the cumulative projects would be required to comply with the MBTA. Therefore, the proposed project, in combination with other past, present, and reasonably foreseeable future projects, would not result in cumulative significant impacts on nesting migratory birds.

E.14. GEOLOGY AND SOILS

Topics:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Not Applicable
14. GEOLOGY AND SOILS— Would the project:					
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:					
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.)	☐	☐	☐	☐	☒
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, creating substantial 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 wastewater?	☐	☐	☐	☐	☒
f) Change substantially the topography or any unique geologic or physical features of the site?	☐	☐	☐	☒	☐
g) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐	☐

The project site is not located within an Earthquake Fault Zone as defined by the Alquist-Priolo Earthquake Fault Zoning Act, and no active or potentially active faults exist on or in the immediate vicinity of the site.[201] Therefore, Topic E.14(a)(i) is not applicable and not discussed further. The

[201] California Department of Conservation, California Geological Survey, *Regulatory Maps.* Available at http://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=regulatorymaps.

project does not propose septic tanks or alternative wastewater disposal systems. Therefore, Topic E.14(e) is not applicable.

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, or seismic-related ground failure, including liquefaction. (Less than Significant)

Seismic Ground Shaking

The project site, like the rest of the San Francisco Bay Area, is in a seismically active region. The project site is approximately 7 miles east of the San Andreas Fault, 11 miles west of the northern Hayward Fault, and 21 miles northwest of the Calaveras Fault.[202] The Working Group for California Earthquake Probabilities estimates that there is a 72 percent probability of a magnitude 6.7 or greater earthquake in the San Francisco Bay Area within 30 years.[203] In 2015, the Association of Bay Area Governments (ABAG) prepared a regional shaking hazard map showing that all of San Francisco is susceptible to very strong to violent shaking.[204] Areas subject to very strong shaking include the Bayview District and Hunters Point neighborhoods, where the project site is located.[205] ABAG has classified the Modified Mercalli Intensity[206] Shaking Severity Level of ground shaking of the project area due to an earthquake on the San Andreas Fault System as "VIII-Very Strong."[207] The project site could therefore experience strong ground shaking from an earthquake.

The SFPUC has established an Engineering Practice Standard (Standard) to set forth consistent criteria for the seismic design and retrofit of San Francisco's water and wastewater infrastructures.[208] The Standard requires all new SFPUC facilities, at a minimum, to comply with the applicable provisions of the codes, standards, and guidelines set forth in the *General Seismic Requirements for the Design of New Facilities and Upgrade of Existing Facilities: Revision 3*. The new Headworks Facility would be designated as a Risk Category IV structure, which is a seismic performance expectation that structures be operational following a maximum credible earthquake.[209] Accordingly, the seismic design loads for the new Headworks Facility would be based on SPC III and Risk Category IV performance levels, using the most stringent criteria included in the standards discussed above. Based on the geotechnical analysis, it was determined that the project site can be developed as planned, provided that the recommendations presented

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202 Geotechnical Consultants, Inc. (GTC), *Final Geotechnical Data Report 1800 & 1801 Jerrold Avenue, San Francisco*, March 2014.

203 United States Geologic Service, *UCERF3: A New Earthquake Forecast for California's Complex Fault System*, 2015. Available at http://pubs.usgs.gov/fs/2015/3009/pdf/fs2015-3009.pdf, accessed on March 24, 2016.

204 ABAG, *San Francisco County Earthquake Hazards*, 2016. Available at http://resilience.abag.ca.gov/earthquakes/sanfrancisco/, accessed on March 24, 2016.

205 Ibid.

206 The Modified Mercalli Intensity (MMI) estimates the intensity of shaking from an earthquake at a specific location or over a specific area by considering its effects on people, objects, and buildings. At high intensities (MMI ≥ 6), earthquake shaking damages buildings.

207 Ibid.

208 SFPUC, *General Seismic Requirements for Design of New Facilities and Upgrade of Existing Facilities Revision 3*, June 2014.

209 Ibid.

in the geotechnical investigation are incorporated into the design and contract documents during construction of the proposed project. Recommendations in the geotechnical investigation include criteria for foundation design, together with recommendations for site preparation, shoring, below-grade walls, floor slabs, and seismic design.

Design and construction of the new Headworks Facility would be in accordance with applicable construction standards and other well-established industry design criteria. Incorporation of the appropriate engineering and design features would ensure that the new Headworks Facility would be able to withstand the calculated seismic forces without substantial damage in the event of a major earthquake. The proposed project would also improve the seismic safety of the headworks facility, as it is replacing structures that are seismically deficient and lack structural integrity. Therefore, impacts related to ground shaking would be less than significant.

Seismic-Related Ground Failure

Seismically induced ground failures, including landslides, settlement and liquefaction, can occur in areas underlain by saturated, loose, unconsolidated silts, sands, silty sands, and gravel. The SEP, BFS parcel, and off-site staging areas are not located in an area subject to landslides as identified in Map 4 in the San Francisco General Plan Community Safety Element,[210] but are in an area of mapped liquefaction susceptibility identified by the California Department of Conservation under the Seismic Hazards Mapping Act of 1990.[211] The SEP and BFS parcel are underlain by approximately 15 to 23 feet of artificial fill. Beneath the artificial fill is a layer of Young Bay Mud ranging from 29.5 to 43 feet in thickness, which is mostly soft to medium dense clay or silt.[212] Artificial fill is inherently subject to liquefaction, and Bay Mud amplifies and lengthens its effects.[213] The proposed facilities would be constructed in accordance with applicable building codes and other well-established industry design criteria, such as those described above for ground shaking. These standards require that the proposed structures be designed to withstand the expected seismic forces and the effects of liquefaction.

Due to the compressible nature of the subsurface soils and variations in the subgrade (e.g., fill, Bay Mud, and layered sediments), the new Headworks Facility would require a pile foundation system to support the structures and pipelines.[214] The piles would extend through the Bay Mud into the dense bay sand layer or bedrock. The proposed new structures would be designed to withstand settlement as a result of liquefaction and related effects. Therefore, impacts related to liquefaction, earthquake-induced settlement, and lateral spreading would be less than significant.

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210 City and County of San Francisco, *San Francisco General Plan*, Community Safety, an Element of the General Plan of the General Plan of the City and County of San Francisco, October 2012.

211 California Department of Conservation, Division of Mines and Geology, *State of California Seismic Hazard Zones, City and County of San Francisco, Official Map*, November 17, 2000.

212 Geotechnical Consultants, Inc. (GTC), *Draft Geotechnical Interpretive Report (GIR) New 250 MGD Headworks Facility Project Southeast Water Pollution Control Plant (SEP) San Francisco*, California, June 2016.

213 SFPUC, *Alternatives Analysis Report TO-23 New Headworks Facility Southeast Water Pollution Control Plant*, February 2014.

214 SFPUC, *Conceptual Engineering Report Volume 2, Technical Memorandum No. 16*, January 2016.

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

Construction of the proposed project would require excavation and backfilling operations at the SEP and BFS parcel, as well as shallow excavations at the off-site staging sites for temporary utilities. The Pier 94 Backlands is unpaved and currently used to store large stockpiles of soil and aggregate. The construction activities could create the potential for wind and waterborne soil erosion. However, the SFPUC would require the construction contractor to implement an erosion and sediment control plan for construction activities, in accordance with Article 4.1 of the San Francisco Public Works Code, and a project-specific SWPPP (discussed in Section E.15, Hydrology and Water Quality) to reduce the impact of runoff from the construction sites. The erosion and sediment control plan and the SWPPP would cover the SEP and BFS parcel areas as well as the off-site staging areas. BMPs such as straw wattles, sandbags, and silt fencing would minimize the impacts of erosion during construction. In accordance with the Construction Site Runoff Ordinance, the SFPUC must review and approve the erosion and sediment control plan prior to implementation. As described in Section B.4.5, Erosion and Sediment Control Plan, of the Project Description, the SFPUC would conduct periodic inspections during construction to ensure compliance with the plan. With implementation of the erosion and sediment control plan and project-specific SWPPP, substantial erosion or loss of topsoil would not occur, and construction impacts would be less than significant. Once construction is complete, the off-site staging areas would no longer be used.

The SEP site and BFS parcel are largely covered with impervious surfaces and do not contain areas of topsoil. Once constructed, the new Headworks Facility site would be paved (similar to existing conditions) and therefore no erosion would occur. Impacts related to the operation of the new Headworks Facility would be less than significant.

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)

Trenching would be required for the BFS sewer connection and along Phelps Avenue to install a sewer line from the construction trailers to an adjacent sewer manhole; shallow excavations would also be needed at the off-site staging sites for temporary utilities. Construction of the proposed project would require excavation at the BFS, existing SEP 011 headworks, existing SEP 010 Influent Control Junction/Southeast Lift Station. Ground settlement could result from excavation, shoring, construction dewatering, and construction equipment vibration. Potentially unstable soil conditions would be addressed in the design of the shoring and dewatering systems to withstand the appropriate ground forces and to minimize settlement during construction. As described in Section B.3.11, Compliance with Seismic Safety Requirements, of the Project Description, shoring systems would be monitored to ensure that excessive settlement does not occur.

As described in Section B.4.2, Construction Methods, project excavation would extend up to 50 feet bgs and piles could extend up to 85 feet bgs. The excavations would encounter artificial fill down to depths of approximately 15 to 23 feet bgs, with Bay Mud underneath. During excavation, the artificial fill could become unstable and potentially cause settlement of adjacent structures and utilities. Shoring would be required to support the sides of the excavation areas to prevent collapse.

In accordance with California Occupational Safety and Health Administration regulations pertaining to temporary shoring (Title 8 of the California Code of Regulations), the excavation walls for these construction activities would be supported by conventional shoring methods such as soldier piles and lagging, which would prevent the excavation sidewalls from becoming unstable.

Groundwater levels in the SEP and BFS area are estimated to be approximately 10 feet bgs.[215] Construction excavation would extend up to 50 feet bgs, and thus extend below the water table. The construction contractor would be required to maintain groundwater levels below the bottom of the excavation to facilitate dry working areas. Compliance with the applicable construction standards and implementation of the recommendations of the geotechnical reports for the project and excavation safety requirements specified in Title 8 of the California Code of Regulations would ensure that excavation and construction activities for the proposed project do not result in unstable soils or geologic units. Therefore, this impact would be less than significant.

Impact GE-4: The proposed project would not be located on expansive soil which could create substantial risks to life or property. (Less than Significant)

Excavation for the proposed project would extend to 50 feet bgs. At this depth, the soil types include artificial fill, Young Bay Mud, and layered sediment. Soils with a high clay content, such as the Bay Muds located on the margins of San Francisco Bay, are highly expansive. Expansive soils are typically very fine grained, with a high to very high percentage of clay. Such soils have a greater potential to shrink when dry and swell when wet. The associated changes in the soil due to these shrink-swell characteristics can affect the structural integrity of buildings as well as cause damage to roads, pipelines, and buildings. The presence of Young Bay Mud under the project site indicates the potential for issues related to expansive soils. Design of the proposed project would conform to applicable building code and engineering standards. These engineering design standards would require the project design to address the potential for expansive soils. Therefore, this impact would be less than significant.

Impact GE-5: The project site would not substantially change existing topography or unique geologic features of the site. (No Impact)

The SEP, BFS parcel, and off-site staging areas are located on largely developed sites in a highly industrialized area that are generally flat and have no unique topographic, geologic, or physical features. Construction of the project would replace existing facilities and would not alter the topography of the site. Following excavation and backfill activities, the site would be returned to the existing grade. Therefore, the proposed project would have no impact with respect to changing the site's topography.

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215 Geotechnical Consultants, Inc, *Draft Geotechnical Interpretive Report (GIR) New 250 MGD Headworks Facility Project Southeast Water Pollution Control Plant (SEP) San Francisco*, California, June 2016.

Impact GE-6: The proposed project would not result in damage to, or destruction of, an as-yet unknown unique paleontological resource or site or unique geologic feature. (Less than Significant)

Paleontological resources include fossilized remains or traces of animals, plants, and invertebrates, including their imprints, from a previous geological period. Collecting localities and the geologic formations containing those localities are also considered paleontological resources as they represent a limited, non-renewable resource and once destroyed, cannot be replaced. There are no unique geologic features at the BFS adjacent lot, staging area along Phelps Street, Pier 94 Backlands, Pier 94, or Pier 96 staging areas. Shallow excavation would be required at the off-site staging areas for temporary utilities and trenching for the construction trailer staging area along Phelps Street. However, given that this area is underlain by artificial fill material and the ground disturbance would be shallow, impacts related to damaging unique paleontological resources or unique geologic features in these areas would not occur and are not discussed further.

As discussed in Impact GE-1, the project site is underlain by approximately 15 feet of artificial fill material. The recent artificial fill is considered low sensitivity due to its already disturbed nature. Most fossils are found along the Pacific Coast in the younger (Pliocene, 5.3 to 1.8 million years old) marine units, such as the Purisima Formation, Monterey Formation, Butano Formation, Colma Formation, and Merced Formation, and in locations within the outcropping marine units in the Santa Cruz Mountains. Fossils found along the coast include vertebrates (e.g., extinct camels, horses, and sea mammals) and invertebrates (e.g., clams and corals).[216]

The Colma Formation sediment was encountered in borings at approximately 45 feet bgs. Excavation at the SEP would extend to 50 feet deep and construction of the BFS sewer connection could require installation of piles up to 85 feet deep. The results of a search of the fossil collections database at the University of California Museum of Paleontology did not reveal any fossil localities within the Colma Formation in San Francisco.[217] However, recent documentation suggests that the Colma Formation has the potential to contain significant paleontological resources.[218] Although the Colma Formation underlies the project site, the proposed excavation activities would not extend into this formation. The potential for encountering unique paleontological resources is therefore considered low, and impacts would be less than significant.

Impact C-GE: The proposed project, in combination with past, present, and reasonably foreseeable projects, would not have a significant impact on geology and soils. (Less than Significant)

Although the entire Bay Area is located within a seismically active region with a high risk of seismic hazards and a wide variety of geologic conditions, the geographic scope for potential geology and

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216 City and County of San Francisco, *Final Program Environmental Impact Report for the San Francisco Public Utilities Commission's Water System Improvement Program (Certified October 30, 2008)*, October 2008.

217 University of California Museum of Paleontology, *Collections Database.* Available at http://www.ucmp.berkeley.edu/science/collections.php, accessed on April 15, 2016.

218 City and County of San Francisco, *San Francisco Westside Recycled Water Project Draft EIR*, March 2015. The Cultural and Paleontological Resources section cites a vertebrate fossil discovery in the Colma Formation in San Francisco near the base of Telegraph Hill and a mammoth tooth in the Colma Formation during excavation for the Transbay Transit Center.

soils and paleontological resources impacts is generally localized and site-specific, encompassing the project site and immediate vicinity.

Project numbers 1 through 13 include construction activities within the SEP site; these cumulative projects would involve constructing, rehabilitating, or improving facilities at the SEP. The proposed project and cumulative projects would not construct habitable structures that result in the introduction of new residents at the site. However, the proposed project and cumulative projects would be subject to strong ground shaking and are located in an area of mapped liquefaction susceptibility. As described in Impact GE-1, the project components would be designed and constructed in accordance with current building codes, standards, and engineering practices to protect against seismic and soil-related hazards and would implement recommendations from their respective geotechnical reports. Construction of the cumulative projects would also be subject to these same requirements. Thus, the proposed project, in combination with the cumulative projects, would not have a cumulatively significant impact related to seismic safety and unstable soils.

As discussed in Impact GE-2, ground disturbance and construction activities associated with the proposed project could increase the potential for soil erosion. The construction of other projects at the SEP (project numbers 1 through 13 in Table 7) could also increase the potential for erosion. However, the proposed project and cumulative projects would be subject to the same requirements to implement erosion control measures during construction, in accordance with the Construction Stormwater Permit and Article 4.1 of the San Francisco Public Works Code, to minimize the potential for off-site soil movement. The proposed project, in combination with the cumulative projects, would not result in a significant cumulative impact related to erosion.

E.15. HYDROLOGY AND WATER QUALITY

Topics:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Not Applicable
15. HYDROLOGY AND WATER QUALITY— Would the project:					
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion of siltation on- or off-site?	☐	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?	☐	☐	☐	☒	☐
e) 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?	☐	☐	☒	☐	☐
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other authoritative flood hazard delineation map?	☐	☐	☐	☐	☒
h) Place structures within a 100-year flood hazard area that would impede or redirect flood flows?	☐	☐	☒	☐	☐
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒	☐
j) Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow?	☐	☐	☒	☐	☐

The proposed project would not include the construction of housing. Therefore, Topic E.15(g) is not applicable and not discussed further.

Impact HY-1: The proposed project would not violate water quality standards or waste discharge requirements, substantially degrade water quality, or provide substantial additional sources of polluted runoff. (Less than Significant)

Construction-Related Stormwater Discharge

Construction of the proposed project could result in water quality impacts from earthmoving operations and erosion as well as from the accidental release of chemicals and fuels. Grading, excavation, and backfill activities associated with the demolition of existing buildings, construction of utilities, roadways, other infrastructure, and buildings would expose soil and could cause erosion, leading to excess sediments in the stormwater that could be discharged to the combined sewer system (at the SEP and BFS parcel) and into the separate stormwater system (at off-site staging areas). In addition, the temporary use and storage of construction vehicles, fuels, wastes, and building materials at the site could affect water quality, if stormwater comes into contact with these pollutants and is carried into the combined sewer system (at the SEP and BFS) and into the separate stormwater system (at off-site staging areas). Any stormwater discharge during construction that flows into the combined sewer system would receive treatment at the SEP to standards set forth in the facility's NPDES permit prior to discharge into the Bay.

The Pier 96 area drains directly to the Bay via separate storm drain systems.[219] The easterly, paved portion of Pier 94 drains via a separate storm sewer to Islais Creek. The unpaved area at Pier 94 is largely undeveloped, and drainage is via infiltration and sheet flow to low-lying areas.[220]

Grading and excavation for temporary utilities at the Pier 94 Backlands, Pier 94, and Pier 96 would be subject to both Construction Site Runoff requirements of Article 4.2 of the San Francisco Public Works Code (Section 146) and the State Water Resources Control Board's (SWRCB) Construction General Permit. Construction activities at the SEP and BFS parcel would only be subject to Article 4.2 of the San Francisco Public Works Code (Section 146).

Under the federal Clean Water Act, the discharge of pollutants to Waters of the U.S. is prohibited unless performed in compliance with an NPDES permit. The State Water Resources Control Board (SWRCB) adopted the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (SWRCB Order 2009-0009-DWQ, as amended by 2010-0014-DWQ and Order 2012-0006-DWQ), referred to herein as the Construction General Permit for construction-related stormwater discharges directly to the Bay or via a separate stormwater system, and to avoid and minimize water quality impacts. The Construction General Permit requires the development and implementation of a SWPPP for construction activities that disturb one or more acres of soil. Pursuant to Article 4.2 of the San Francisco Public Works Code, SFPUC or its contractor must obtain a Construction Site Runoff Control Permit. This permit requires the preparation of an erosion and sediment control plan (ESCP) if construction disturbs 5,000 square feet or more of ground surface. The ESCP is required to detail the use, location, and placement of sediment and erosion control measures at the project site. In accordance with Article 4.2, the SFPUC

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219 Treadwell and Rollo and Watershed Resources Collaboration Group, *Revised Draft Storm Water Management Study for Port of San Francisco Southern Waterfront Pier 70 to Pier 96*, September 2002.

220 Ibid.

would be required to develop and implement such a plan to reduce the impact of runoff from construction sites. The ESCP must include the following information: location and perimeter of the site; location of nearby storm drains and/or catch basins; existing and proposed roadways and drainage patterns within the site; and a drawing or diagram of the sediment and erosion control devices to be used on site. At a minimum, the plan would also contain a visual monitoring program and a chemical monitoring program for nonvisible pollutants that could result from use and storage of hazardous materials. The ESCP would also specify minimum BMPs related to housekeeping (storage of construction materials, waste management, vehicle storage and maintenance, landscape materials, pollutant control); non-stormwater management; erosion control; sediment control; and runon and runoff control. Article 4.2 provides that for projects subject to both the Construction General Permit and Article 4.2, a SWPPP may be prepared in lieu of an ESCP.[221, 222]

Under the Construction Site Runoff Control Permit requirements of Article 4.2, the construction contractor would be required to conduct daily inspections and maintenance of all erosion and sediment controls and must provide inspection and maintenance information to the SFPUC as the administering agency. Compliance with the Construction General Stormwater Permit (at off-site staging areas only) and Article 4.2 Construction Site Runoff Control Permit requirements (off-site staging areas, the SEP, and BFS parcel areas) would ensure that water quality impacts related to violation of water quality standards or degradation of water quality due to discharge of construction-related stormwater runoff would be less than significant. As noted in the Project Description, Section B.4.5, Erosion and Sediment Control Plan, the SFPUC would conduct routine inspections to document compliance.

Construction-Related Groundwater Dewatering

Excavation for the proposed project at the SEP and BFS parcel would extend to 30 feet bgs. Groundwater levels in the SEP and BFS area are estimated to be approximately 10 feet bgs.[223] Therefore, the proposed project's excavation activities could encounter groundwater, resulting in a potential water quality impact if groundwater were to contain contaminants related to past site activities. However, shallow excavation at the off-site construction staging areas would not extend to the depths of groundwater, therefore no groundwater dewatering would be required at the off-site construction staging areas. Construction dewatering discharges to the combined sewer system at the SEP and BFS parcel would be subject to the requirements of Article 4.1 of the San Francisco Public Works Code[224] (supplemented by Department of Public Works Order No. 158170), which incorporates and implements San Francisco's NPDES permit, and the Combined Sewer Overflow Control Policy. Article 4.1 contains construction requirements to protect water quality. Any groundwater encountered during construction of the proposed project would also be subject to

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221 Ibid.

222 SFPUC, *Construction Site Runoff Control Program*, 2016. Available at: http://www.sfwater.org/index.aspx?page=235, accessed on March 28, 2016.

223 Geotechnical Consultants, Inc, *Draft Geotechnical Interpretive Report (GIR) New 250 MGD Headworks Facility Project Southeast Water Pollution Control Plant (SEP) San Francisco, California*, June 2016.

224 City and County of San Francisco, Ordinance No. 260-13 Control of Construction Site Runoff Ordinance, Public Works Code Article 4.2, Sections 146-146.11, October 17, 2013.

requirements of the Sewer Use Ordinance (Ordinance Number 19-92, amended 116-97), as supplemented by Department of Public Works Order No. 158170, requiring a permit from the Wastewater Enterprise Collection System Division of the SFPUC, which may issue a permit only if an effective pretreatment system is maintained and operated. Each permit for such discharge must 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 dewatering is not proposed at the off-site staging areas. With discharge to the combined sewer system in accordance with regulatory requirements, potential water quality impacts related to a violation of water quality standards or degradation of water quality due to discharge of groundwater produced during construction-related dewatering would be less than significant.

Operations-Related Combined Sewer Discharge during Construction

To be in compliance with its NPDES permit during construction, the SEP must maintain the ability to treat 250 mgd of combined stormwater and wastewater flows during wet weather. The NPDES permit requires that the SEP treat all dry-weather wastewater flows. The existing SEP 012 headworks has a capacity of 150 mgd and can treat all flows to the SEP during dry weather. The existing SEP 011 headworks operates in conjunction with the SEP 012 headworks during wet-weather events to handle total flows up to 250 mgd. Flows up to 150 mgd receive both primary and secondary treatment and disinfection. Additional wet-weather flow above 150 mgd and below 250 mgd receives primary treatment and disinfection.[225] When peak wet-weather flows exceed 250 mgd, the excess flow is stored in large transport/storage (T/S) structures that surround the north and east perimeter of the city. These Bayside storage structures have the capacity to store approximately 126 million gallons of combined flows. When stormwater flows exceed the SEP treatment capacity *and* the system storage capacity, combined stormwater and wastewater is discharged to San Francisco Bay through one of 29 permitted combined sewer discharge (CSD) outfalls.[226]

Construction of the proposed project would require facilities to be in place to reroute wet-weather flow in excess of the SEP 012 capacity of 150 mgd prior to demolition of SEP 011. As described in Section B, Project Description, this would require the construction of a temporary SEP 011 reroute pipe to carry wet-weather excess flow to the SEP 040/041 primary sedimentation tanks. Once these temporary facilities are in place, SEP 011 could be demolished and the new Headworks Facility constructed.

During construction, there would be a short period of time (3 to 4 months) in which the SEP's treatment capacity would be reduced from 250 to 150 mgd while the reroute pipe is constructed. Construction of the reroute pipe would occur during the summer (dry-weather season). However, rainfall during the dry season that (1) results in flows above 150 mgd at the SEP, (2) fills the Bayside T/S structures, and (3) causes a CSD could result in noncompliance with the NPDES permit. To

225 SFPUC, *Conceptual Engineering Report Volume 2*, January 2016.
226 SFPUC, *Headworks Project Potential Water Quality Impact Analysis Summary*, April 1, 2016.

determine the likelihood of such noncompliance, hydraulic modeling and rainfall analysis were conducted to estimate the amount of rainfall needed to trigger this scenario.[227]

Hydraulic modeling simulations determined that approximately 0.65 inches of rainfall would be needed to fill the Bayside T/S structures and cause a CSD if the flow to the SEP were reduced to 150 mgd.[228] The modeling conservatively assumed that a storm producing more than 0.5 inches of rain over 24 hours (rather than 0.65 inches) would result in a CSD during the period when the SEP influent flow would be limited to 150 mgd. The likelihood of more than 0.5 inch of daily rainfall occurring during the dry-weather period was based on historical rain gauge data. The analysis concluded that even with conservative assumptions, the likelihood of a CSD occurring during the months of May through September is less than 1 percent. A review of hourly influent flow data to the SEP provided additional information that the likelihood of rainfall resulting in flows greater than 150 mgd during the months of May through September is less than 1 percent.[229] Additionally, even if a storm were to cause a CSD during the summer construction months, the increase in the total volume of CSDs discharged over the entire year is likely to be very small. Modeling estimates that this increase would be less than 1 percent of the total CSD volume discharged in a typical year when influent flow capacity is 250 mgd.[230]

In the unlikely event that significant rainfall occurs during the summer construction period, the water quality effects of a CSD are expected to be the same as those caused by CSDs currently authorized by the SEP NPDES permit. The permit acknowledges that "given the relatively short duration of combined sewer discharges (i.e., just a few hours each time), and accounting for the inevitable dilution within the receiving waters during wet weather, water quality standards appear to be maintained."[231] The permit also notes that, on an annual basis, a combined sewer system provides a net environmental benefit because it removes many pollutants in urban runoff that, if San Francisco had a separate sewer system like most other cities in California, would otherwise be discharged with little or no treatment. Even if a CSD occurred during construction of the reroute conduit, the CSD would be composed almost entirely of stormwater that, without the combined sewer system, would not receive any pollutant removal. Therefore, even with a temporary influent capacity constraint of 150 mgd at the SEP during construction of the reroute pipeline, there is a very low probability of a CSD occurring during the months of May through September, and impacts on water quality from a combined sewer discharge during these months would be less than significant due to the likely low volume of rainfall, and because water quality effects are expected to be similar to CSDs that already occur and are authorized by the SEP NPDES permit.

Operations-Related Stormwater Discharge

Because the proposed project would disturb more than 5,000 square feet of ground surface and the site has more than 50 percent impervious surface, the Headworks Facility would be required to

227 Ibid.
228 Ibid.
229 Ibid.
230 Ibid.
231 NPDES Permit No. CA0037664 (Order R2-2013-0029), at page F-42.

comply with San Francisco's Stormwater Management Ordinance (Article 4.2 of the San Francisco Public Works Code).[232] This would require the preparation and implementation of a stormwater control plan that demonstrates how the project would meet the CCSF's Stormwater Control Design Guidelines. The project site would be covered with substantially the same amount of impervious surfaces as under existing conditions. The new Headworks Facility would be required to implement stormwater BMPs that would result in a 25 percent decrease in the peak rate and total volume of stormwater runoff from the 2-year 24-hour design storm (compared to existing conditions) using low-impact design techniques. The SFPUC would apply for modified compliance with the Stormwater Management Ordinance and Stormwater Design Guidelines to adjust the amount by which the project must reduce the stormwater runoff volume and flow rate relative to existing conditions. As noted in the Project Description, Section B.3.10, compliance with the Stormwater Management Ordinance would be achieved through an SEP site-wide Stormwater Control Plan.[233] Implementation of these stormwater controls at the new Headworks Facility in compliance with the Stormwater Control Design Guidelines would reduce the rate and flow of stormwater entering the combined sewer system.

Therefore, the proposed project would not result in additional runoff, and this impact would be less than significant.

Operations-Related Combined Sewer Discharge

The Bayside NPDES permit (which includes the SEP) issued by the RWQCB (Order No. R2-2015-0029, NPDES No. CA0037664) specifically requires the SEP to operate at 250 mgd before any overflow discharge at a CSD outfall.[234] Project-related wastewater and stormwater would continue to flow to the city's combined sewer system and would be treated to the standards specified in the NPDES permit prior to discharge into San Francisco Bay. There would be no increase in the discharge from the project site to the combined sewer system. The proposed project would not increase the capacity of the headworks treatment system and would not require additional employees. Thus, additional wastewater would not be generated as a result of the project. In addition, as described above, stormwater flow would be reduced through modified compliance with the Stormwater Management Ordinance and Stormwater Design Guidelines. The new Headworks Facility would not generate additional stormwater runoff or sewage. Therefore, the proposed project would not result in an increase of long-term flows to the combined sewer system. The project operations would meet RWQCB's wastewater treatment requirements, and impacts on water quality would be less than significant, as a result.

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232 City and County of San Francisco, Ordinance No. 83-10, Requiring the Development and Maintenance of Stormwater Management Controls, Public Works Code Article 4.2, Sections 147-147.6, April 22, 2010.

233 SFPUC, Urban Watershed Management Program Wastewater Enterprise Draft Memorandum of Understanding to Jignesh Desai-SEP 020 Headworks Project, RE: Stormwater Management Ordinance compliance strategy for WW-628, Southeast Water Pollution Control Plant SEP 020 Headworks Project (CS-389), July 26, 2016.

234 SFPUC, *Alternatives Analysis Report TO-23 New Headworks Facility Southeast Water Pollution Control Plant*, February 2015.

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)

Groundwater levels at the SEP and BFS parcel area are estimated to be approximately 10 feet bgs.[235] Excavation during construction has the potential to encounter groundwater, which would require dewatering. The depth of groundwater could fluctuate based on weather and time of year. Although dewatering may be required during construction, any effects related to lowering the water table would be temporary and localized, and would not be expected to substantially deplete groundwater resources. In addition, the proposed project would not require long-term, continuous dewatering following construction.

The project site is located in the Islais Valley Groundwater Basin. The Water Quality Control Plan for the San Francisco Basin identifies industrial process supply and industrial service supply as an existing beneficial use for the groundwater basin; municipal and domestic supply as well as agricultural supply are potential beneficial uses.[236] Based on well records provided by the California Department of Water Resources, there is one well used for industrial purposes near the SEP; this well is on Davidson Avenue north of the project site.[237] The proposed project would not interfere with groundwater recharge because no new impervious surfaces would be created. The project site would be covered with substantially the same amount of impervious surfaces as under existing conditions. For these reasons, impacts related to the depletion of groundwater resources and interference with groundwater recharge would be less than significant.

Impact HY-3: The proposed project would not result in altered drainage patterns that would cause substantial erosion and siltation or flooding on- or off-site, or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems. (No Impact)

The project site (SEP and BFS parcel) is currently covered with impervious surfaces and does not contain any streams or water courses. Construction activities would require excavation below ground; however, after construction, the ground surface would remain substantially unchanged from existing conditions. Following construction, the site would be restored to consist of impervious surfaces, as it does currently, and drainage patterns would remain the same. Incorporation of stormwater management features at the project site in accordance with the City's Stormwater Management Ordinance and Stormwater Design Guidelines would ensure that drainage from the project site would not cause on- or off-site erosion, siltation, or flooding. Grading and excavation for temporary utilities at the Pier 94 Backlands, Pier 94, and Pier 96 would be minor and would not substantially alter the existing drainage pattern. As a result, the proposed project would not affect surface drainage patterns, and no impacts relative to erosion and siltation, or to

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235 Geotechnical Consultants, Inc, *Draft Geotechnical Interpretive Report (GIR) New 250 MGD Headworks Facility Project Southeast Water Pollution Control Plant (SEP) San Francisco, California*, June 2016.

236 RWQCB, *Water Quality Control Plan for the San Francisco Bay Basin, Approved March 20, 2015*. Available at: http://www.waterboards.ca.gov/sanfranciscobay/basin_planning.shtml.

237 California Department of Water Resources, Well Completion Reports, Biosolids Digester Facilities, ½ Mile Radius of 1800-1801 Jerrold Avenue, San Francisco, CA, San Francisco County, Township 02S, Range 05W, Sections 22, 23, 26, 27, December 16, 2015.

flooding on- or off-site, or to contributions to exceedances of stormwater drainage systems would occur.

Impact HY-4: The proposed project would not place within a 100-year flood hazard area structures that would impede or redirect flood flows. (Less than Significant)

The Federal Emergency Management Agency (FEMA) manages the National Flood Insurance Program. To support this program, FEMA prepares Flood Insurance Rate Maps (FIRMs) that identify areas subject to inundation during a flood event having a 1 percent chance of occurrence in a given year (also known as a "base flood" or "100-year flood"). FEMA refers to the floodplain that is at risk from a flood of this magnitude as a "special flood hazard area." FEMA released a preliminary FIRM for San Francisco in September 2007 that tentatively identified special flood hazard areas along the city's shoreline in and along San Francisco Bay consisting of Zone A (areas subject to coastal flooding with no wave hazard) and Zone V (areas of coastal flooding subject to additional hazards associated with waves that exceed 3 feet in height).[238, 239] As a condition of participating in the National Flood Insurance Program, the CCSF adopted a Floodplain Management Ordinance in 2010.[240] The Floodplain Management Ordinance stipulates that new construction and substantial improvements in designated flood hazard areas must be protected against flood damage. Because the FIRM is not yet finalized, the City Administrator's Office uses an interim floodplain map created in 2008 that is based on the preliminary FIRM for the city. The SEP and BFS parcel are not located in an existing 100-year flood hazard area.[241] The Pier 94 Backlands is not within an existing 100-year flood hazard area.[242] The near-shore areas of the Pier 94 and 96 staging areas are located within an existing 100-year flood hazards zone.[243] The preliminary FIRM maps do not show flood hazards that may be caused by increased flood risk due to future conditions, such as sea level rise.[244] A project that places development in an existing or future flood hazard area is not considered under CEQA to have a significant impact on the environment, unless the project would significantly exacerbate the flood hazard. Thus, the analysis below evaluates whether the proposed project would exacerbate existing or future flood hazards

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238 City and County of San Francisco Office of the City Administrator, *San Francisco Floodplain Management Program Fact Sheet*, Revised January 25, 2011. Available at http://sfgov.org/sfc/riskmanagement/Modules/FloodplainManagementProgramFactsheetExtended__1d3f.pdf?documentid=7520, accessed on September 13, 2016.

239 City and County of San Francisco Risk Management, *San Francisco Floodplain Management Program*. Available at http://sfgov.org/sfc/riskmanagement/index_828_8a9d.html, accessed on September 13, 2016.

240 Ordinance number 188-08 establishes the floodplain management program by adding Article XX, Sections 2A.280 through 2A.285 to the San Francisco Administrative Code. The Board of Supervisors approved ordinance number 56-10 to amend the floodplain management program.

241 City and County of San Francisco Office of the City Administrator, *San Francisco's Preliminary Floodplain Maps*, Final Draft July 2008. Available at http://sfgov.org/sfc/riskmanagement/Modules/Citywide__3d9c.pdf?documentid=1761, accessed on September 13, 2016.

242 Ibid.

243 Ibid.

244 Port of San Francisco, Memorandum from Monique Moyer, Executive Director to Members of the Port Commission, Subject: Informational Presentation Regarding the National Flood Insurance Program, October 17, 20017. Available at: http://sfgov.org/sfc/riskmanagement/Modules/po101707__9480.pdf?documentid=1799, accessed on September 13, 2016.

in the project area, resulting in a substantial risk of loss, injury, or death. Under existing conditions and through 2050, the proposed project at the SEP and BFS parcel would have no impact related to flood hazards, as it is located outside of the 100-year flood hazard area. Although Pier 94 and 96 are within an existing flood hazard zone, with Pier 96 projected to be permanently inundated by 2050, there would be no construction of any structures in the flood zone that could impede or redirect flood flows. Thus, construction activities at the off-site staging areas would avoid adverse effects related to flooding, and are not discussed further.

The new Headworks Facility could exacerbate future flood hazards in the project area if it were to increase the frequency or severity of flooding or cause flooding to occur in an area that would not be subject to flooding without the project. The proposed project is a capital project with a budget in excess of $5 million and as such is required to follow San Francisco's *Guidance for Incorporating Sea Level Rise into Capital Planning in San Francisco: Assessing Vulnerability and Risk to Support Adaptation*. This guidance requires the SFPUC to perform a sea level rise vulnerability assessment under scenarios that employ: (1) the most likely sea level rise projection, and (2) worst-case sea level rise projection, each in combination with a 100-year storm, for the functional lifespan of the facility.[245]

The SFPUC evaluated sea level rise and potential future flooding impacts on its facilities and developed two guidance documents.[246, 247] The analysis took into account overland flow from the Bay, assuming a pathway to the facility, and from backups in sewers due to higher downstream discharge elevations, which could lead to flooding-out of manholes and catch basins.[248] The existing grade at the SEP and BFS parcel is approximately 0.5 feet San Francisco City Datum and would remain outside of the 100-year flood zone in 2050, assuming 12 inches of sea level rise. However, the SEP and BFS parcel would be within the 100-year flood zone in 2100 with the projected 36 inches of sea level rise, unless adequate flood protection measures are implemented during the interim period. Based on the existing grade at the SEP site, the new Headworks Facility is expected to maintain a half foot of freeboard until 2050, but the facility would be approximately 1 foot below the tide level in 2100.[249] The new Headworks Facility would have a functional life of approximately 50 years, but the project design would accommodate projected sea level rise through the year 2100 by finishing the floor elevation of the screenings room and motor room at +2 feet City Datum.[250]

The new Headworks Facility would not exacerbate future flooding conditions because the project would not include any topographic changes or the construction of new structures that would increase the extent of storm-surge related flooding relative to existing conditions. The new Headworks Facility would not result in an increase in impervious surfaces that would restrict

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245 City and County of San Francisco, *Guidance for Incorporating Sea Level Rise into Capital Planning in San Francisco: Assessing Vulnerability and Risk to Support Adaptation*, December 14, 2015. Available at http://onesanfrancisco.org/wp-content/uploads/Guidance-for-Incorporating-Sea-Level-Rise-into-Capital-Planning.pdf, accessed on April 5, 2016.

246 SFPUC, *Guidance to Protect the Three Water Pollution Control Facilities from Sea Level Rise*, March 23, 2015.

247 SFPUC, *San Francisco Design Tides and Sea Level Rise Recommendations*, March 12, 2015.

248 Ibid.

249 SFPUC, *Guidance to Protect the Three Water Pollution Control Facilities from Sea Level Rise*, March 23, 2015.

250 SFPUC, *Conceptual Engineering Report Southeast Treatment Plant Lift Station*, October 2015.

infiltration of floodwaters, nor would it create any topographic changes that would redirect flood flows or alter their flow rate. No changes to the exterior of the BFS facility would occur. The SEP and BFS parcel are already developed, and construction of the new Headworks Facility would not redirect flood flows relative to existing conditions. The new Headworks Facility does not include features that would result in additional stormwater discharges that could contribute to the frequency or severity of flooding. Therefore, impacts related to future flooding would be less than significant.

Impact HY-5: The proposed project would not expose people or structures to a significant risk of loss, injury, or death involving inundation by failure of a levee or dam, or by seiche, tsunami, or mudflow. (Less than Significant)

The SEP, BFS parcel, and the Pier 94 Backlands are not in an area where there are levees and dams, are not located in a dam inundation zone, and are not located near geologic formations that would generate mudflow, as identified in Maps 4, 5, and 6 in the San Francisco General Plan Community Safety Element.[251] Therefore, no impacts related to these levees, dams, seiche, and mudflow would occur.

Large parts of the Pier 94 and 96 staging areas would be located within a potential tsunami inundation zone as shown in Map 5 of the San Francisco General Plan Community Safety Element.[252] While the Pier 94 and 96 staging areas are located within a potential tsunami inundation zone, use of this area would be temporary and would not include the construction of any structures in this area that could be damaged in the event of a tsunami. Workers would only intermittently occupy the area before and after their work shifts. In the event that the National Warning System issues a tsunami warning, the CCSF would initiate its outdoor warning system and issue emergency instructions should the San Francisco waterfront be threatened. Use of this system would allow adequate warning time to avoid the area in the event of a tsunami and for evacuation of the area should workers be present when the warning is issued. The proposed project would not expose people or structures to a substantial risk of loss, injury or death involving inundation by seiche or tsunami. The impact would be less than significant for the Pier 94 and 96 construction staging areas.

Impact C-HY: The proposed project, in combination with the past, present, and reasonably foreseeable future projects in the site vicinity, would not have a significant cumulative impact on hydrology and water quality. (Less than Significant)

The geographic scope for potential cumulative impacts on hydrology and water quality encompasses the project area and water bodies that could be affected by activities in the project area (i.e., the combined sewer system service area and San Francisco Bay). Specifically, the geographic scopes include (1) the Islais Valley Groundwater Basin for impacts related to groundwater, (2) the Bayside Drainage Basin of the City's combined sewer system for impacts

251 City and County of San Francisco, *San Francisco General Plan*, Community Safety, an Element of the General Plan of the General Plan of the City and County of San Francisco, October 2012.

252 Ibid.

related to wastewater and stormwater flows, (3) and the waterfront between Islais Creek and India Basin.

Construction activities associated with the cumulative projects could result in significant cumulative impacts from erosion and the transport of soil into the combined sewer system; additional sources of pollution include accidental releases of chemicals and fuels and discharges of groundwater from dewatering activities associated with excavation during construction. However, the cumulative projects would be subject to the same water quality regulatory requirements as the proposed project and would be required to implement stormwater BMPs. As a result, cumulative impacts on stormwater quality during construction would be less than significant. Groundwater dewatering would be required to various extents for the proposed project and the cumulative projects. However, dewatering activities from construction trenches would not likely involve sufficient volumes or be at sufficient depths to deplete groundwater resources in the project vicinity. In addition, the cumulative projects would be subject to the same groundwater dewatering requirements as the proposed project, and dewatering would only occur during construction. As a result, it is unlikely that development of the identified cumulative projects could cause a significant cumulative impact relative to the depletion of groundwater resources.

In the long term, cumulative development in the project area could increase the amount of impervious surfaces in the project vicinity (which is largely developed with impervious surfaces already) and an intensification of various types of land uses, leading to a cumulative increase in stormwater and wastewater generation, and an increase in polluted runoff and stormwater discharges. However, as with the proposed project, the cumulative projects would be required to comply with the San Francisco Stormwater Design Guidelines and implement BMPs and low-impact development measures to reduce the flow rate and volume of stormwater entering the combined sewer system, thereby reducing the frequency of combined sewer overflows, minimizing flooding effects, and protecting water quality. The wastewater and stormwater from the cumulative projects would be served by the existing combined sewer system and would be treated to the standards specified in the SEP's NPDES permit prior to discharge into San Francisco Bay. Therefore, the proposed project, in combination with other past, present, and reasonably foreseeable future projects, would not result in a cumulative impact related to exceeding the capacity of existing or planned stormwater and wastewater systems.

E.16. HAZARDS AND HAZARDOUS MATERIALS

Topics:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Not Applicable
16. HAZARDS AND HAZARDOUS MATERIALS— Would the project:					
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☒	☐	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐	☐
h) Expose people or structures to a significant risk of loss, injury or death involving fires?	☐	☐	☒	☐	☐

The nearest public airport to the project site is San Francisco International Airport, which is approximately 8 miles to the south. The project site is not located within one-quarter mile of an existing or proposed school, in an airport land use plan area, in the vicinity of a private airstrip; therefore, Topics E.16(c), E.16(e), and E.16(f) are not applicable.

Impact HZ-1: The proposed project would not: create a significant hazard to the public or environment through the routine transport, use, or disposal of hazardous materials; or 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)

Construction

Project construction would require the routine use of hazardous materials such as fuels, lubricants, paints, and solvents for construction vehicles and equipment. The proposed project would be required to comply with a number of federal, state, and local laws and regulations regarding the storage, use, transport, and disposal of hazardous materials. The construction contractor would be required to comply with the federal Occupational Safety and Health Administration (OSHA), Title 29 of the Code of Federal Regulations (CFR), Section 1910. The contractor would also be required to comply with the California Occupational Safety and Health Administration (Cal/OSHA) under CCR Title 8, which specifies requirements for employee training, availability of safety equipment, accident prevention programs, and hazardous substance exposure warnings. Cal/OSHA requirements include safety training, availability of safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation. CCR Title 8 also includes hazard communication program regulations that contain worker safety training and hazard information requirements, procedures for identifying and labeling hazardous substances, communicating hazard information related to hazardous substances and their handling, and preparing health and safety plans to protect workers.

Hazardous wastes that may be generated during project construction could include but are not limited to: (1) excavated soil that is considered hazardous under federal and state regulations, (2) spent and unspent hazardous materials use from construction. (Note: Handling, and disposal of potential contaminated groundwater generated from dewatering operation are addressed in Section E.15, Hydrology and Water Quality). The management, transport, and disposal of these hazardous wastes would be conducted in compliance with all applicable federal, state, and local regulations to ensure: (1) proper excavation and dust control procedures, (2) compliance with air emissions, as described in Section E.7, Air Quality, (3) compliance with worker protection and safety, and (4) proper waste storage, management, transportation, and disposal of hazardous wastes. With implementation of the protocols on the proper use, transport, and disposal of the hazardous materials in accordance with above-mentioned regulatory requirements, the use, transport, and disposal of the hazardous materials during construction would be less than significant.

Operation

Operation of the new Headworks Facility would likely use similar hazardous materials as existing conditions. Based on information described in the Hazardous Materials Business Plan (HMBP) for the SEP,[253] hydrogen peroxide, acetylene, and quaternary ammonium chloride solution are the

[253] AEW Engineering, Inc., *Draft Hazardous Materials Business Plan, Southeast Treatment Plant, San Francisco, California*, July 2015.

major chemicals used at the headworks facility that are subject to compliance with San Francisco Department of Public Health (SFDPH).[254] Other chemicals used at the facility include cleaners and disinfectants, coolant, paints, epoxy, hydraulic fluid/oil, motor oil, and turbine oil.

The use, transport, and disposal of these hazardous materials and other new hazardous materials would be conducted and handled (1) in compliance with all applicable federal, state, and local (such as SFDPH and San Francisco Fire Department) regulations for safety and protection of humans and environment, (2) in accordance with SFPUC's standard operation procedures, compliance plans such as HMBP, spill prevention and countermeasures plan, underground storage tank management plan for any underground storage tanks in the new facilities, and emergency responses plans, and (3) in accordance with the SFPUC's safety procedures. These compliance plans include emergency responses protocols to be implemented in the event of release of hazardous materials into the environment due to accident or operation upset to ensure that a significant hazard to the public and the environment would not be created. To ensure the safe handling of these hazardous materials, the SFPUC would continue to comply with the City's hazardous materials handling requirements specified in Article 21 of the San Francisco Health Code. In accordance with this article, the SFPUC's Southeast Plant HMBP on file with the SFDPH would be revised to reflect the changes in the quantities of hazardous materials used. Therefore, impacts related to use, transport, and disposal of hazardous materials for the operation of the facilities would be less than significant.

In summary, the overall impact of the proposed project on the potential hazard to the public or environment through the routine transport, use, or disposal of hazardous materials and potential hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials 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 conditions involving the release of naturally occurring asbestos. (Less than Significant)

Results of a 2015 Site Investigation in the northwest portion of SEP (SEP 011 headworks, SEP 012 headworks, SEP 010 Influent Control Junction/Southeast Lift Station) indicated that 0.5 percent of naturally occurring asbestos (NOA) was found in soil samples collected at 2.5 and 5.5 feet bgs at the project site.[255] The proposed project would involve construction throughout the project site, potentially releasing serpentinite into the atmosphere.

Health Effects of Serpentinite

Serpentinite commonly contains naturally occurring chrysotile asbestos (NOA) or tremolite-actinolite, a fibrous mineral that can be hazardous to human health if airborne emissions are

[254] A Hazardous Materials Business Plan addresses the management, use, storage, transport, disposal, and emergency responses requirements for accidental releases of hazardous materials in accordance with all applicable federal, state, and local regulations.

[255] AEW Engineering, Inc., *Draft Article 22A Environmental Site Investigation Report, Headworks Facility, New 250 mgd Headworks Facility Project, Southeast Water Pollution Control Plant (SEP), San Francisco, California*, March 24, 2016.

inhaled. 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).[256] The risk of disease depends upon the intensity and duration of exposure;[257] health risk from NOA 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 (ARB) 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.[258]

Regulation Applicable to Serpentinite

To address health concerns from exposure to NOA, ARB enacted an Asbestos Airborne Toxic Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations, which became effective for projects located within the San Francisco Bay Area Air Basin (SFBAAB) in 2002. The requirements established by the Asbestos ATCM are contained in CCR Title 17, Section 93105,[259] and are enforced by the BAAQMD.

On-site workers and the public could be exposed to airborne NOA during ground disturbing and excavation activities of the proposed project 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).[260]

The Asbestos ATCM requires construction activities in areas where NOA is likely to be found to employ best available dust control measures. Before the start of construction activities, SFPUC would be required to submit the necessary documentation to BAAQMD to ensure compliance with the Asbestos ATCM. Because results of the 2015 Site Investigation indicate that the project area contains NOA, and the project site is over 1 acre, the Asbestos ATCM would require SFPUC to prepare and obtain BAAQMD approval of an asbestos dust mitigation plan. SFPUC 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:

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256 California Air Resources Board, *Fact Sheet #1 Health Information on Asbestos*, 2002. Available online at: http://www.arb.ca.gov/toxics/Asbestos/1health.pdf. Accessed April 15, 2013.

257 California Air Resources Board, *Naturally Occurring Asbestos, General Information*, 2002. Available online at: http://www.arb.ca.gov/toxics/Asbestos/general.htm. Accessed April 15, 2013.

258 California Air Resources Board, *Fact Sheet #1 Health Information on Asbestos*, 2002. Available online at: http://www.arb.ca.gov/toxics/Asbestos/1health.pdf. Accessed April 15, 2013.

259 California Air Resources Board, *Regulatory Advisory, Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations*, July 29, 2002.

260 California Air Resources Board, *Fact Sheet #1 Health Information on Asbestos, 2002*. Available online at: http://www.arb.ca.gov/toxics/Asbestos/1health.pdf. Accessed April 15, 2013.

- 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;
- Equipment must be washed down before moving from the property onto a paved public road; and
- Visible track-out on the paved public road must be cleaned using wet sweep or a HEPA filter equipped vacuum device within twenty-four (24) hours.

In addition, BAAQMD may require SFPUC or a qualified third party consultant to conduct air monitoring for offsite and onsite 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 Article 22B, Construction Dust Control Ordinance, of the San Francisco Health Code, as described in Section E.7, Air Quality. 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 Article 21, Section 1100 et seq. of the San Francisco Public Works Code. If not required, reclaimed water should be used whenever possible. Contractors shall provide as much water as necessary to control dust (without creating run-off in any area of land clearing, and/or earth movement). During excavation and dirt-moving activities, contractors shall 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 shall be covered with a 10 mil (0.01 inch) polyethylene plastic (or equivalent) tarp, braced down, or use other equivalent soil stabilization techniques. Therefore, compliance with the CCR Title 17, Section 93105 and Article 22B would ensure that the proposed project does not result in a significant hazard to the public or environment from exposure to NOA and the proposed project would result in a less than significant impact.

Impact HZ-3: The proposed project site is included on a list of hazardous materials sites compiled pursuant to California Government Code Section 65962.5, and could encounter contaminated soil and groundwater during construction but would not create a significant hazard to the public or the environment. (Less than Significant)

Construction

Sites on Lists Compiled Pursuant to California Government Code Section 65962.5

Database searches for the project included: Environmental Data Resources[261] as well as searches using the California SWRCB GeoTracker database,[262] the California Department of Toxic Substances Control (DTSC) EnviroStor database,[263] and San Francisco Department of Public Health (SFDPH) Local Oversight Program and Hazardous Materials Program records for the Biosolids Digester Facilities Project.[264] Although the project site is included on a list of hazardous materials sites at the RWQCB's Geotracker database as Leaking Underground Storage Tank cases with case closed status compiled pursuant to California Government Code Section 65962.5, this analysis assumes that, with proper handling of materials during construction, the potential for impacts would be less than significant. There are no open cases on the list in the vicinity of the project area. With implementation of proper controls in compliance with all applicable federal, state, and local regulations and in accordance with contract specification requirement as described for Impact HZ-1 for site investigation and cleanup, dust mitigation and monitoring, hazardous waste operations, handling, management and transportation and disposal of hazardous wastes, construction activities would pose a less-than-significant hazard to the public or the environment.

Hazardous Soil and Groundwater

In 2015, a subsurface site investigation was conducted in the northwest portion of SEP (SEP 011 headworks, SEP 012 headworks, SEP 010 Influent Control Junction/Southeast Lift Station) to evaluate the chemical conditions in soil and groundwater at the site to meet the compliance requirement of the SFDPH's Article 22A Ordinance.[265] The soil or groundwater samples reported concentrations of analytes exceeding one or more of the respective regulatory criteria for RSLs,[266] ESLs,[267] CHHSLs,[268] and/or DTSC-SLs[269] for human health and environmental risk considerations. The levels of these analytes in soil and groundwater are not expected to pose

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261 EDR, Summary Radius Map Report, Biosolids Digester Facilities Project, 1800 and 1801 Jerrold Avenue, San Francisco CA 94124, August 20, 2015.

262 SWRCB, *GeoTracker Database.* Available at http://geotracker.waterboards.ca.gov/, accessed on October 26, 2015.

263 DTSC, *Envirostor Database.* Available at http://www.envirostor.dtsc.ca.gov/public/, accessed on October 26, 2015.

264 The Biosolids project is a neighboring sewer system improvement project at the SEP.

265 AEW Engineering, Inc., *Draft Article 22A Environmental Site Investigation Report, Headworks Facility, New 250 mgd Headworks Facility Project, Southeast Water Pollution Control Plant (SEP), San Francisco, California*, March 24, 2016.

266 RSL = U.S. Environmental Protection Agency Regional Screening Levels for Chemical Contaminants at Superfund Sites, November 2015.

267 ESLs = California RWQCB – San Francisco Bay Region's Environmental Screening Levels

268 CHHSLs = Integrated Risk Assessment Branch, Office of Environmental Health Hazard Assessment, California Environmental Protection Agency – California Human Health Screening Levels.

269 DTSC-SLs = California Environmental Protection Agency, Department of Toxic Substances Control's modified screen levels.

significant adverse risks to human health and the environment because on-site paving protects workers and the public from exposure to soils, and groundwater under the site is not used as a potable water supply.

A subsurface investigation is currently planned for the BFS, but in the absence of site-specific data, it is assumed that the subsurface environment is likely to be similar to that in the proposed new Headworks facility area. In February 2016, the SFDPH conducted an inspection of the 398 Quint Street building and found evidence of contamination both inside and outside of the structure, suggesting a potential release of one or more hazardous materials.[270]

The proposed project would involve excavation and other construction activities in areas with known soil contamination, described above. Therefore, the proposed project is subject to Article 22A of the Health Code, also known as the Maher Ordinance, which is administered and overseen by the Department of Public Health (DPH). The Maher Ordinance requires the project sponsor to retain the services of a qualified professional to prepare a Phase I Environmental Site Assessment (ESA) that meets the requirements of Health Code Section 22.A.6. The Phase I would determine the potential for site contamination and level of exposure risk associated with the project. Based on that information, SFPUC may be required to conduct soil and/or groundwater sampling and analysis. Where such analysis reveals the presence of hazardous substances in excess of state or federal standards, the project sponsor is required to submit a site mitigation plan (SMP) to DPH or other appropriate state or federal agency(ies), and to remediate any site contamination in accordance with an approved SMP prior to the issuance of any building permit.

For departments, boards, commissions and agencies of the CCSF that authorize construction or improvements on land under their jurisdiction where no building or grading permit is required, the ordinance requires protocols be developed between that entity and SFDPH that will achieve the environmental and public health and safety goals of Article 22A. In accordance with these requirements, the SFPUC has conducted soil and groundwater sampling to characterize the contaminants at the project site and will prepare a site mitigation plan for SFDPH review.[271] In a 2015 Site Investigation, elevated lead levels that would be considered hazardous if disposed to an offsite facility were found in soil samples collected in the footprint of the new Headworks Facility.[272] The SFPUC would be required to remediate soil and groundwater contamination in accordance with all laws for hazardous waste operations and demonstrate to SFDPH that remediation achieves the approved cleanup goals.

The proposed project would be required to remediate potential soil contamination described above in accordance with Article 22A of the Health Code. Thus, the proposed project would not result in a significant hazard to the public or environment from contaminated soil and the proposed project would result in a less than significant impact.

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270 City and County of San Francisco Department of Public Health, Letter from Joshua Alexander, Senior Environmental Health Inspector to Robert Kennedy, All Auto Dismantlers Inc., February 24, 2016.

271 AEW Engineering, Inc., *Draft Article 22A Environmental Site Investigation Report, Headworks Facility, New 250 mgd Headworks Facility Project, Southeast Water Pollution Control Plant (SEP), San Francisco, California*, March 24, 2016.

272 Ibid.

Possible Siting of Construction Offices on a Regulated Landfill

The Pier 94 Backlands was created during the 1960s and 1970s by filling the area with dredge spoil and construction debris. Unauthorized municipal refuse may also have been used as fill material in some areas of the Pier 94 Backlands and Pier 94. Since 1987, this area has been regulated as a Class III[273] solid waste disposal site[274] under RWQCB Waste Discharge Requirements. The fill material is covered by a soil cap. No other information is available regarding the subsurface conditions beneath this area. During construction, temporary utilities, trailers, and restroom facilities may be located at the Pier 94 Backlands, Pier 94 and/or Pier 96 for approximately five years. Because the precise configuration of staging areas at these properties are not currently known, it is possible that construction offices would be located on top of the regulated landfill area, potentially exposing building occupants to harmful landfill gases such as methane and VOCs. Compliance with WDR Order R2-2003-0055 would require RWQCB approval of any changes to site development, including these proposed uses. The RWQCB would require additional studies to confirm the potential presence of landfill gases and any landfill gas controls needed to ensure the safe occupancy of proposed structures. With compliance with the WDR requirements, the potential adverse effects of landfill gases on construction workers at the staging area would be less than significant.

Hazardous Building Materials

Project construction would include demolition of the SEP 010 Influent Control Structure/Southeast Lift Station, SEP 011 headworks, SEP 012 headworks, and the building at 398 Quint Street. The Pier 94 Backlands, Pier 94, and Pier 96 areas would only be used for staging, and no building demolition would occur.

Asbestos-containing material (ACM) and lead are present in building materials at SEP 011 headworks.[275] Lead is present in building materials at SEP 010 Influent Control Structure/Southeast Lift Station and SEP 012 headworks.[276] The building at 398 Quint Street is anticipated to contain ACM and lead due to the age of the building. The SEP 010 Influent Control Structure/Southeast Lift Station, SEP 011 headworks, SEP 012 headworks, and the building at 398 Quint Street, may also contain other hazardous building materials such as polychlorinated biphenyls (PCBs), di(2-ethylhexyl)phthalates, and mercury. The BFS is unlikely to contain hazardous building materials because it was constructed in 1997.

The demolition of these buildings could result in airborne particles of the hazardous building materials.

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273 Class III solid waste disposal site is defined in 27 CCR 20260.

274 T&R/RYCG, *Site Investigation Report, Pier 94 Backland Improvements and Amador Street Sanitary Pump Station, San Francisco, California*, June 15, 2012.

275 IHI Environmental, *Hazardous Materials Survey San Francisco Public Utilities Commission, San Francisco, California, San Francisco Southeast Water Pollution Control Plant*, October 24, 2013.

276 Ibid.

Asbestos Containing Materials. The California DTSC considers asbestos hazardous, and removal of ACMs is required prior to demolition or construction activities that could result in disturbance of these materials. Asbestos-containing materials must be removed in accordance with local and state regulations, BAAQMD, the California Occupational Safety and Health Administration (Cal OSHA), and California Department of Health Services requirements.

Specifically, Section 19827.5 of the California Health and Safety Code requires that local agencies not issue demolition or alteration permits until an applicant has demonstrated compliance with notification requirements under applicable federal regulations regarding hazardous air pollutants, including asbestos. The California legislature vests the BAAQMD with the authority to regulate airborne pollutants, including asbestos, through both inspection and law enforcement, and the BAAQMD is to be notified 10 days in advance of any proposed demolition or abatement work. Any asbestos-containing material disturbance at the project site would be subject to the requirements of BAAQMD Regulation 11, Rule 2: Hazardous Materials—Asbestos Demolition, Renovation, and Manufacturing. The local office of Cal OSHA must also be notified of asbestos abatement to be carried out. Asbestos abatement contractors must follow state regulations contained in Title 8 of California Code of Regulations Section 1529 and Sections 341.6 through 341.14, where there is asbestos related work involving 100 gross square feet or more of ACM. The owner of the property where abatement is to occur must have a Hazardous Waste Generator Number assigned by and registered with the Office of the California Department of Health Services. The contractor and hauler of the material are required to file a Hazardous Waste Manifest that details the hauling of the material from the site and the disposal of it. These established regulations and procedures would ensure that any potential impacts due to asbestos would be reduced to a less-than-significant level. Therefore, no mitigation measures are necessary.

Lead-Based Paint. Similar to ACMs, lead-based paint was identified at the SEP 010 Influent Control Structure/Southeast Lift Station, SEP 011 headworks, SEP 012 headworks, and is likely present at 398 Quint Street. Work that could result in disturbance of lead paint must comply with Section 3426 of the San Francisco Building Code, Work Practices for Lead-Based Paint on Pre-1979 Buildings and Steel Structures. Where there is any work that may disturb or remove lead paint on the exterior of any building built prior to 1979, Section 3426 requires specific notification and work standards, and identifies prohibited work methods and penalties. (The reader may be familiar with notices commonly placed on residential and other buildings in San Francisco that are undergoing re-painting. These notices are generally affixed to a drape that covers all or portions of a building and are a required part of the Section 3426 notification procedure.)

Section 3426 applies to the exterior of all buildings or steel structures on which original construction was completed prior to 1979 (which are assumed to have lead-based paint on their surfaces, unless demonstrated otherwise through laboratory analysis), and to the interior of residential buildings, hotels, and child care centers. The ordinance contains performance standards, including establishment of containment barriers, at least as effective at protecting human health and the environment as those in the U.S. Department of Housing and Urban Development Guidelines (the most recent Guidelines for Evaluation and Control of Lead-Based Paint Hazards) and identifies prohibited practices that may not be used in disturbances or removal

of lead-based paint. Any person performing work subject to the ordinance shall, to the maximum extent possible, protect the ground from contamination during exterior work; protect floors and other horizontal surfaces from work debris during interior work; and make all reasonable efforts to prevent migration of lead paint contaminants beyond containment barriers during the course of the work. Clean-up standards require the removal of visible work debris, including the use of a High Efficiency Particulate Air Filter (HEPA) vacuum following interior work.

The ordinance also includes notification requirements and requirements for signs. Prior to the commencement of work, the responsible party must provide written notice to the Director of DBI, of the address and location of the project; the scope of work, including specific location within the site; methods and tools to be used; the approximate age of the structure; anticipated job start and completion dates for the work; whether the building is residential or nonresidential, owner-occupied or rental property; the dates by which the responsible party has fulfilled or will fulfill any tenant or adjacent property notification requirements; and the name, address, telephone number, and pager number of the party who will perform the work. Further notice requirements include a Posted Sign notifying the public of restricted access to the work area, a Notice to Residential Occupants, Availability of Pamphlet related to protection from lead in the home, and Notice of Early Commencement of Work (by Owner, Requested by Tenant), and Notice of Lead Contaminated Dust or Soil, if applicable.

Demolition would also be subject to the Cal OSHA Lead in Construction Standard (8 CCR Section 1532.1). This standard requires development and implementation of a lead compliance plan when materials containing lead would be disturbed during construction. The plan must describe activities that could emit lead, methods that will be used to comply with the standard, safe work practices, and a plan to protect workers from exposure to lead during construction activities. Cal/OSHA would require 24-hour notification if more than 100 square feet of materials containing lead would be disturbed.

Implementation of procedures required by Section 3426 of the San Francisco Building Code and the Lead in Construction Standard would ensure that potential impacts of demolition or renovation of structures with lead-based paint would be less than significant. Therefore, no mitigation measures are necessary.

Polychlorinated Biphenyls (PCB's) Light Ballasts. All light ballasts manufactured through 1978 contain PCBs. Installation of ballasts manufactured prior to 1978 continued for several more years. As a result it can be expected that any building constructed before 1980 that has not had a complete lighting retrofit is likely to have PCB containing ballasts. Therefore, unless the ballast is electronic (this type is PCB free), determined by testing not to contain PCBs, or the manufacturers label on the ballast states "No PCBs", it is assumed all light ballasts on this site contain PCB's, and must be handled as a hazardous waste. Any ballast containing PCBs is required to be removed by personnel trained in PCB-related work (inspection, removal, clean-up). All workers must also follow OSHA regulations governing the removal and handling of PCB products including Code of Federal Regulations (CFR) Title 29 Section 1910.120 – Hazardous Waste Operations and Emergency Response and 8 CCR Title 8 Section 5192 - Hazardous Waste Operations and Emergency Response

as well as other applicable federal, state and local laws and regulations. These existing regulations and abatement procedures would reduce potential impacts of light ballasts with PCBs to a less-than-significant level.

Mercury Lamps and Switches. Fluorescent tubes and several other types of lamps (not incandescent light bulbs) contain a small amount of mercury that is necessary for their operation. Currently, most fluorescent lamps contain enough mercury to be a hazardous waste. Spent lamps typically contain concentrations of mercury exceeding the established Total Threshold Limit Concentration and/or the Soluble Threshold Limit Concentration values. Therefore, these lamps must be sent to an authorized recycling facility or to a universal waste consolidator for shipment to an authorized recycling facility. Any lamp that is not designated for recycling or continued use in a different fixture for which the lamp is manufactured for use must be handled, managed, and disposed of as a hazardous waste in accordance with Cal/EPA Title 22. Thermostat switches that contain mercury are considered a hazardous waste if removed and must also be disposed of in accordance with Cal/EPA Title 22. These existing regulations and abatement procedures would reduce potential impacts of mercury to a less-than-significant level.

Operation

Operation of the new Headworks Facility would not require direct contact with subsurface soil or groundwater and would thus not encounter contaminated soil or groundwater. Therefore, the overall potential impact relative to the creation of a significant hazard to the public or environment from the proposed project 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. (Less than Significant)

Construction

Construction of the proposed project is not anticipated to interfere with the San Francisco Emergency Response Plan, because the plan does not designate emergency response or evacuation routes and the project would not otherwise impair implementation of this plan. However, the project would be considered to have a significant impact on implementation of emergency response or emergency evacuation if construction activities were to interfere with emergency response vehicle travel or if they were to restrict access to critical facilities such as hospitals or fire stations.

Project construction would temporarily close the south parking lane and a lane of traffic on Evans Avenue between Rankin Street and Phelps Street to through traffic. However, as described in Section B.4.1, Construction Staging, in the Project Description, two lanes of traffic in each direction would be open along Evans Avenue during construction, with the exception of a 5 month period when this would decrease to one lane of traffic in each direction during the BFS sewer connection work. Both travel lanes on Rankin Street between Evans Avenue and Davidson Avenue would also be closed during the BFS sewer connection work. As part of this project, the SFPUC or its contractor(s) would also prepare and implement a traffic control plan (refer to Section B.4.7, Traffic Control Plan, in the Project Description), specifying the circulation and detour plans during

construction and requiring the contractor to notify the police and emergency responders of any lane closure and traffic control measures to be implemented.

Implementation of the traffic control plan measures, compliance with the requirements of SFMTA and DPW permits, and development and implementation of an emergency response plan for construction, would provide adequate access such that project construction would not interfere with emergency response or evacuation activities. As a result, this impact would be less-than-significant.

Operation

Upon completion of construction all lanes of Evans Avenue and Rankin Street would be open to through traffic. The SEP operations, including the new Headworks Facility, would continue to conform to the SFPUC Wastewater Enterprise Emergency Operations Plan.[277] The Emergency Operations Plan outlines the Wastewater Enterprise's overall emergency preparedness measures, emergency management organization, emergency operations, roles, and responsibilities. Contingency plans supplement the Emergency Operations Plan and are incorporated by reference; these include the Operations and Maintenance Manual, which outlines detailed procedures for the operation of equipment or facilities during or in response to an emergency. The SEP Contingency Plan was developed to ensure that wastewater facilities remain in operation, or are rapidly returned to operation, in the event of an emergency. The plan includes emergency response operating procedures for power failures, equipment failures, treatment plant security, spills, and discharges of chemicals or sewage.[278] In addition, the SEP Hazardous Material Business Plan (SEP HMBP) contains procedures for emergency response to hazardous materials incidents.[279] The SEP Contingency Plan and HMBP would be updated, as required by law, to include the new Headworks Facility operations and to ensure that the new facility and operations would not impair implementation of the SEP emergency response plans. Therefore, this impact would be less than significant.

Impact HZ-5: The proposed project would not expose people or structures to a significant risk of loss, injury, or death involving fires. (Less than Significant)

Construction

As discussed in Impact HZ-1, construction activities would involve the use of flammable materials such as fuels, oils, solvents, and compressed gases for welding. Compliance with Cal/OSHA worker safety regulations and hazardous materials storage and handling regulations would reduce the potential for improper storage and handling of flammable materials to result in fires. Further, as described in Section E.5, Transportation and Circulation, emergency vehicles would continue to have local access during construction for fire response. Through compliance with these regulations, impacts related to the risk of fires during construction would be less than significant.

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277 Metcalf&Eddy/AECOM, *SFPUC Wastewater Enterprise Emergency Operations Plan*, May 2008.

278 SFPUC, Program Management Consultant, Contingency Plan, Southeast Water Pollution Control Plant as required by NPDES Permit No. CA0037664, Regional Water Board Resolution 74-10, August 2013.

279 AEW Engineering, Inc., *Draft Hazardous Materials Business Plan, Southeast Treatment Plant, San Francisco, California*, July 2015.

Operation

San Francisco ensures fire safety through provisions of its Building and Fire Codes. These provisions would require the development of an emergency procedure manual and an exit drill plan for the new Headworks Facility. Potential fire hazards (including those associated with emergency diesel backup generators and emergency access points) would be addressed by the SFPUC's compliance with San Francisco Building and Fire Codes. Conformance with the San Francisco Fire Code would ensure appropriate life safety protections are included in the project and impacts would be less than significant.

In summary, the overall impact of the proposed project related to risk of fires would be less than significant.

Impact C-HZ-1: The proposed project, in combination with past, present, and reasonably foreseeable future projects in the site vicinity, would result in less than significant impacts related to hazards and hazardous materials. (Less than Significant)

Hazardous materials impacts related to the project could result from using hazardous materials, from constructing and operating the project within contaminated soil and groundwater, and from demolishing structures that contain hazardous building materials. In addition, the project could result in hazards related to impairment of emergency response and fires. However these impacts would be primarily restricted to the project area and immediate vicinity; therefore, the geographic scope for cumulative impacts related to hazards encompasses the SEP site, BFS parcel, Pier 94 Backlands, Pier 94 and 96, and immediate vicinities. The cumulative projects at the SEP site include project numbers 1 through 13 in Table 7. Other projects in the immediate vicinity of the BFS parcel and off-site staging areas include project numbers 14 (Central Bayside System Improvement Project), 16 (1801 Jerrold Avenue), 22 (Quint Street Bridge Replacement), and 32 (Quint Street Lead Track).

As noted above, hazardous materials impacts related to the project could result from using hazardous materials, from constructing and operating the project within contaminated soil and groundwater, and from demolishing structures that contain hazardous building materials. In addition, the project could result in hazards related to impairment of emergency response and fires. These impacts would be primarily restricted to the project area and immediate vicinity; therefore, the geographic scope for cumulative impacts related to hazards encompasses the SEP site, BFS parcel, Pier 94 Backlands, Pier 94 and 96, and immediate vicinities. The cumulative projects at the SEP site include project numbers 1 through 13 in Table 7. Other projects in the immediate vicinity of the BFS parcel and off-site staging areas include project numbers 14 (Central Bayside System Improvement Project), 16 (1801 Jerrold Avenue), 22 (Quint Street Bridge Replacement), and 32 (Quint Street Lead Track).

Any potential hazards occurring at these sites would be subject to the safety and/or remediation requirements discussed for the proposed project, which would reduce any potential cumulative hazards to less-than-significant levels. As such, no significant cumulative impacts would occur, and the proposed project's impacts related to hazards and hazardous materials, both individually and cumulatively, would be less than significant.

E.17. MINERAL AND ENERGY RESOURCES

Topics:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Not Applicable
17. MINERAL AND ENERGY RESOURCES— Would the project:					
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☐	☒
c) Encourage activities which result in the use of large amounts of fuel, water, or energy, or use these in a wasteful manner?	☐	☐	☐	☒	☐

Pursuant to the Surface Mining and Reclamation Act of 1975, the California Division of Mines and Geology has designated all land in San Francisco, including the project site, as Mineral Resource Zone 4 (MRZ-4).[280] This designation indicates that inadequate information is available to assign the site to any other MRZ, and thus the project site is not a designated area of significant mineral deposits. No sites in San Francisco, including the project site, are designated areas of significant mineral deposits. Therefore, Topics E.17a and E.17b are not applicable to the proposed project.

Impact ME-1: The proposed project would not encourage activities which would result in the use of large amounts of fuel, water, or energy, or use these in a wasteful manner. (Less than Significant)

Construction of the proposed project would require the use of fuels (primarily gas and diesel) for a variety of construction activities, including excavation, backfill, demolition, construction, and vehicle travel. The precise amount of fuel required for project construction is uncertain; however, it is expected that gasoline and diesel for construction equipment and worker and haul vehicles would be comparable to quantities used for similar construction projects, and that this consumption would not have a measurable effect on local and regional energy supplies. Fuel use for construction workers commute trips would be minor in comparison to the fuel used by construction equipment and for hauling. Fuels would not be used wastefully during construction because doing so would not be economically sustainable for contractors.

The proposed project would result in the short-term use of fuel, water, and electricity during construction. Construction activities would require water use for dust control; however, recycled

280 California Department of Conservation, Division of Mines and Geology, *Update on Mineral Land Classification: Aggregate Materials in the South San Francisco Bay Production-Consumption Region*. DMG Open-File Report 96-03, 1996.

water would be used for this activity, as required by Article 21 of the Public Works Code. Therefore, project construction would not use water in a wasteful manner.

Additional electricity required to operate the new odor control facility scrubber fans could cause an overall increase in power use compared to existing conditions.[281] The new Headworks Facility would also require more energy than under existing conditions, however as described in Impact C-GG-1, above, the new Headworks Facility would include energy efficiency designs and/or features that include variable frequency drives for the bioscrubber fans, automation of the Headworks such that the number of on-line equipment matches the actual flow and process demands, no redundant HVAC units, and lighting that conforms to Title 24 of the California Energy Code.[282] Please also refer to Impact C-GG-1 regarding CCSF's overall GHG reduction strategies. As a result, this analysis concludes that project operations would not use fuel, water, or electricity in a wasteful manner, and impacts would be less than significant.

Impact C-ME: The proposed project, in combination with the past, present, and reasonably foreseeable future project in the site vicinity, would result in less than significant cumulative impacts to energy and minerals (Less than Significant)

As described above, the project site is not designated at the state, regional, or local level as an important mineral resource recovery site, and the project would have no impact on mineral resources. Therefore, the project would not contribute to any cumulative impact on mineral resources, nor would any of the other identified cumulative projects do so.

The geographic scope for potential cumulative impacts on energy and water resources consists of the project vicinity and broader region. All of the cumulative projects listed in Table 7 would require the use of fuel, water, and energy for construction and operation, which could result in a significant cumulative impact on energy and water resources. However, all of these projects would be required to promote energy efficiency to the extent possible, consistent with applicable building codes, standards, and regulations. In addition, and as described in Impact ME-1, the proposed project would require energy for construction; however, this analysis presumes that the wasteful use of fuels, energy, and water would not be economical for contractors. In addition, measures to reduce GHGs would prevent the wasteful use of fuel and energy. Project operations would require more energy than existing conditions, however the facility would use clean energy from the SFPUC Power Enterprise. The City also has an overall GHG reduction strategy that targets reducing GHG emissions to 80 percent below 1990 levels by 2050, with energy efficiency as one of the primary strategies to achieve this. Thus the energy demand that would be created by the proposed project would not contribute to a cumulative impact. Therefore, the proposed project, in combination with past, present, and reasonably foreseeable projects, would result in less than significant cumulative impacts on fuel, energy and water resources.

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281 SFPUC, *Conceptual Engineering Report Volume 2, Technical Memorandum No. 16*, January 2016.
282 Carollo Engineers, E-mail from Pavitra Prabhakar to Victor Shih, SFPUC. July 13, 2016.

E.18. AGRICULTURAL RESOURCES

Topics:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Not Applicable
18. AGRICULTURE AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. 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]) or timberland (as defined by Public Resources Code Section 4526)?	☐	☐	☐	☐	☒
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 located in an urban area in San Francisco. The California Department of Conservation's Farmland Mapping and Monitoring Program identifies the site as Urban and Built-Up Land, which is defined as "…land [that] is used for residential, industrial, commercial, institutional, public administrative purposes, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes." In addition, no land within the City is zoned for forest uses. Because the project site does not contain agricultural or forest uses and is not zoned for such uses, the proposed project would not: convert any Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural uses; conflict with existing zoning for agricultural land or a Williamson Act contract; or involve any changes to the environment that could result in the conversion of farmland to non-agricultural use or forest land to non-forest use. Therefore, Topics E.18(a), E.18(b), E.18(c), E.18(d), and E.18(e) are not applicable to the proposed project.

E.19. MANDATORY FINDINGS OF SIGNIFICANCE

Topics:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Not Applicable
19. MANDATORY FINDINGS OF SIGNIFICANCE— Would the project:					
a) Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, 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 would be 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 that would cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐	☐

Impact MF-1: The proposed project has the potential to degrade the quality of the environment, reduce the habitat of a fish or wildlife species, or otherwise adversely affect a rare or endangered plant or animal species. (Less than Significant with Mitigation)

As discussed in Section E under each of the resource topics in this Initial Study, the proposed project could result in potentially significant impacts on the environment with respect to air quality, cultural resources, hazards and hazardous materials, transportation and circulation, and noise, but all of these potential impacts would be reduced to a less-than-significant level with mitigation.

Construction activities associated with the proposed project would result in emissions exceeding the NOx threshold. As discussed in Impact AQ-1, implementation of **Mitigation Measure M-AQ-1: Construction Emissions Minimization** would reduce NOx emissions to a less-than-significant level.

As discussed in Impact CR-2 and CR-3, ground-disturbing activities at the project site could result in potential impacts on unknown archaeological resources, human remains, and tribal cultural resources. These impacts would be reduced to a less-than-significant level with the implementation of **Mitigation Measures M-CR-2: Archaeological Resources Data Recovery**, **M-CR-2b: Archaeological Monitoring**, and **M-CR-3: Tribal Cultural Resources Interpretive Program**.

Impact MF-2: The proposed project would have impacts that would be individually limited but cumulatively considerable. (Less than Significant with Mitigation)

Table 7 provides a cumulative projects list of past, present, and reasonably foreseeable actions. The geographic context for the proposed project's cumulative impact analyses is generally the SEP and immediate vicinity, with an expanded geographic scope (e.g., utilities service area) applied to some resource topics.

Cumulative impacts for each environmental topic are provided in the relevant subsections of Section E, Evaluation of Environmental Effects, of this Initial Study. For the reasons described in Topics E.1 through E.18, either there would be no potentially significant cumulative impacts or, with implementation of mitigation measures to address potentially significant project-level impacts, the proposed project's contribution to the cumulative impacts on the environment would be less than cumulatively considerable.

Impact MF-3: The proposed project would have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly. (Less than Significant with Mitigation).

The discussion in Section E, Evaluation of Environmental Effects, identifies potentially significant impacts related to air quality, cultural resources, hazards and hazardous materials, transportation and circulation, and noise. Mitigation measures have been identified in this Initial Study to reduce all potentially significant impacts to a less-than-significant level. Impact determinations of "no impact" or "less-than-significant impact" were made for the following environmental issues: land use, aesthetics, population and housing, greenhouse gas emissions, wind and shadow, recreation, utilities and service systems, public services, geology and soils, hydrology and water quality, mineral and energy resources, and agricultural and forest resources. Therefore, with implementation of the mitigation measures specified in Sections E.1 through E.18, the proposed project would not result in substantial adverse effects, direct or indirect, on human beings.

F. MITIGATION MEASURES

The following mitigation measures have been adopted by the SFPUC and are necessary to avoid potentially significant impacts of the proposed project.

Mitigation Measure M-CR-2a: Archaeological Resources Data Recovery.

Because buried prehistoric archeological resources may be present within the archeological C-APE that could be disturbed during project implementation, the following measures shall be undertaken to avoid any potentially significant adverse effect from the project on buried historical resources. The San Francisco Public Utilities Commission (SFPUC) shall retain the services of an archeological consultant selected in consultation with the City and County of San Francisco Environmental Review Officer (ERO) or designee. The archeological consultant shall design an archeological data recovery program as specified herein, to be implemented based on the results of consultation on initial coring as described above. The archeological consultant's work shall be conducted in accordance with this measure at the direction of ERO or designee. All plans and reports prepared by the consultant as specified herein shall be submitted first and directly to the ERO or designee for review and comment, and shall be considered draft reports subject to revision until final approval by the ERO or designee. Archeological data recovery programs required by this measure could suspend construction of the project for up to a maximum of four weeks. At the direction of the ERO or designee, 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 Section 15064.5 (a)(c).

***Consultation with Descendant Communities*:** On discovery of an archeological site[283] associated with descendant Native Americans, the Overseas Chinese, or other descendant group an appropriate representative[284] of the descendant group and the ERO or designee shall be contacted. The representative of the descendant group shall be given the opportunity to monitor archeological field investigations of the site and to consult with the ERO or designee regarding appropriate archeological treatment of the site, of recovered data from the site, and, if applicable, any interpretative treatment of the associated archeological site. A copy of the Final Archeological Resources Report shall be provided to the representative of the descendant group.

Archeological Data Recovery Program. The archeological consultant shall prepare and submit to the ERO or designee for review and approval an archeological data recovery plan (ADRP).

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283 The term "archeological site" is intended here to minimally include any archeological deposit, feature, burial, or evidence of burial.

284 An "appropriate representative" of the descendant group is here defined to mean, in the case of Native Americans, any individual listed in the current Native American Contact List for the City and County of San Francisco maintained by the California Native American Heritage Commission and in the case of the Overseas Chinese, the Chinese Historical Society of America. An appropriate representative of other descendant groups shall be determined in consultation with the Planning Department archeologist.

Data recovery shall be conducted in accord with the ADRP. The archeological consultant, SFPUC, and the ERO or designee 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 or designee. 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 shall 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 project. Destructive data recovery methods shall not be applied to portions of the archeological resources if nondestructive methods are practical.

In the instance of a deeply buried prehistoric archeological deposit potentially affected by project activities for which conventional data recovery methods are not feasible, the ADRP shall identify data recovery approaches that will result in the maximally significant data that is feasible.

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.
- *Interpretive Program*. Consideration of an on-site/off-site public interpretive program during the course of the archeological data recovery program.
- *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 Associated or Unassociated Funerary Objects. The treatment of human remains and of associated or unassociated funerary objects discovered during any soils disturbing activity shall comply with applicable State and federal laws. This shall include immediate notification of the Coroner of the City and County of San Francisco and in the event of the Coroner's determination that the human remains are Native American remains, notification of the California State Native American Heritage Commission (NAHC) who shall appoint a Most Likely Descendant (MLD) (Public Resources Code Section 5097.98). The archeological consultant, project sponsor, ERO, and MLD shall have up to but not beyond

six days of discovery to make all reasonable efforts to develop an agreement for the treatment of human remains and associated or unassociated funerary objects with appropriate dignity (CEQA Guidelines. Sec. 15064.5(d)). The agreement should take into consideration the appropriate excavation, removal, recordation, analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects. The agreement should take into consideration the appropriate excavation, removal, recordation, analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects. Nothing in existing State regulations or in this mitigation measure compels the project sponsor and the ERO to accept recommendations of an MLD. The archeological consultant shall retain possession of any Native American human remains and associated or unassociated burial objects until completion of any scientific analyses of the human remains or objects as specified in the treatment agreement if such as agreement has been made or, otherwise, as determined by the archeological consultant and the ERO.

Final Archeological Resources Report. The archeological consultant shall submit a Draft Final Archeological Resources Report (FARR) to the ERO or designee that evaluates the historical significance of any discovered archeological resource and describes the archeological and historical research methods employed in the archeological testing/monitoring/data recovery program(s) undertaken. Information that may put at risk any archeological resource shall be provided in a separate removable insert within the final report.

Once approved by the ERO or designee, copies of the FARR shall be distributed as follows: California Archeological Site Survey Northwest Information Center (NWIC) shall receive one (1) copy and the ERO or designee shall receive a copy of the transmittal of the FARR to the NWIC. As requested by the ERO, the Environmental Planning division of the San Francisco Planning Department shall receive one bound, one unbound and one unlocked, searchable PDF copy on CD of the FARR along with copies of 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. In instances of high public interest in or the high interpretive value of the resource, the ERO or designee may require a different final report content, format, and distribution than that presented above.

Mitigation Measure M-CR-2b: Archaeological Monitoring.

Based on the reasonable potential that archeological resources may be present within the project site, the following measures shall be undertaken to avoid any potentially significant adverse effect from the proposed project on buried or submerged historical resources. The project sponsor shall retain the services of an archeological consultant selected in consultation with the City and County of San Francisco Environmental Review Officer (ERO) or designee. The archeological consultant shall undertake an archeological monitoring program.

Archeological monitoring program (AMP). The archeological monitoring program shall minimally include the following provisions:

- The archeological consultant, project sponsor, and ERO shall meet and consult on the scope of the AMP reasonably prior to any project-related soils disturbing activities commencing. The ERO in consultation with the project archeologist shall determine what project activities shall be archeologically monitored. In most cases, any soils disturbing activities, such as demolition, foundation removal, excavation, grading, utilities installation, foundation work, driving of piles (foundation, shoring, etc.), site remediation, etc., shall require archeological monitoring because of the potential risk these activities pose to archaeological resources and to their depositional context;

- The archeological consultant shall advise all project contractors to be on the alert for evidence of the presence of the expected resource(s), of how to identify the evidence of the expected resource(s), and of the appropriate protocol in the event of apparent discovery of an archeological resource;

- The archaeological monitor(s) shall be present on the project site according to a schedule agreed upon by the archeological consultant and the ERO until the ERO has, in consultation with the archeological consultant, determined that project construction activities could have no effects on significant archeological deposits;

- The archeological monitor shall record and be authorized to collect soil samples and artifactual/ecofactual material as warranted for analysis;

- If an intact archeological deposit is encountered, all soils disturbing activities in the vicinity of the deposit shall cease. The archeological monitor shall be empowered to temporarily redirect demolition/excavation/pile driving/construction crews and heavy equipment until the deposit is evaluated. If in the case of pile driving activity (foundation, shoring, etc.), the archeological monitor has cause to believe that the pile driving activity may affect an archeological resource, the pile driving activity shall be terminated until an appropriate evaluation of the resource has been made in consultation with the ERO. The archeological consultant shall immediately notify the ERO of the encountered archeological deposit. The archeological consultant shall, after making a reasonable effort to assess the identity, integrity, and significance of the encountered archeological deposit, present the findings of this assessment to the ERO.

- On the finding of the ERO that a potentially significant archeological resource may be affected by the project, the archeological consultant shall undertake a data recovery program in conformance with the archeological data recovery plan required by Mitigation Measure M-CR-2a.

- The results of the archeological monitoring program will be reported in the project FARR as required by Mitigation Measure M-CR-2a.

Mitigation Measure M-CR-3: Tribal Cultural Resources Interpretive Program.

If the Environmental Review Officer (ERO) determines that preservation-in-place of previously unidentified archaeological resources (as outlined in **Mitigation Measure M-CR-2, Archaeological Resources Data Recovery**) is not a sufficient or feasible option, and if in consultation with the affiliated Native American tribal representatives the ERO determines that the resource constitutes a TCR, the SFPUC shall implement an interpretive program for the TCR in consultation with the tribal representatives. An interpretive plan produced in consultation with the ERO and affiliated tribal representatives, at a minimum, and approved by the ERO would be required to guide the interpretive program. The plan shall identify, as appropriate, proposed locations for displays or installations, the proposed content and materials of those displays or installations, the producers or artists of the displays or installations, 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, artifact displays and interpretation, educational panels, or other informational displays.

Mitigation Measure M-AQ-1: NO_x Construction Emissions Minimization.

All equipment requirements, construction emissions minimization plan, monitoring and reporting are subject to the San Francisco Clean Construction Ordinance. The SFPUC's contractors shall implement the following in addition to the requirements of the Clean Construction Ordinance:

A. Engine Requirements

1. All off-road construction equipment equal to or greater than 140 horsepower shall be consistent with the United States Environmental Protection Agency (USEPA) Tier 4 Final off-road emission standards.
2. Renewable diesel shall be used in all diesel on-road trucks and vehicles in Year 5 (only) of construction.

Should any deviations from the requirements or the equipment above be proposed prior to or during construction, the project sponsor shall demonstrate, to the satisfaction of the San Francisco Planning Department Environmental Review Officer (ERO), that an equivalent amount of emissions reduction would be achieved.

B. Waivers

1. The ERO or designee may waive the alternative source of power requirement of Chapter 25 of the Environment Code, Section 2.5.5, Subsection (A)(2) if an alternative source of power is limited or infeasible at the project site. If the ERO or designee grants the waiver, the contractor must submit documentation that the equipment used for on-site power generation meets the requirements of Subsection (A)(1).
2. The ERO or designee may waive the equipment requirements of Subsection (A)(1) if a particular piece of off-road equipment with Tier 4 Final standards or CARB Level

3 VDECS is technically or commercially[285] not feasible, the equipment would not produce desired emissions reduction due to expected operating modes, installation of the equipment would create a safety hazard or impaired visibility for the operator, or there is a compelling emergency need to use off-road equipment that is not retrofitted with a CARB Level 3 VDECS. If the ERO or designee grants the waiver, the contractor must use the next cleanest piece of off-road equipment, according to the following table:

Compliance Alternative	Engine Emission Standard
1	Tier 4 Interim
2	Tier 3
3	Tier 2

NOTES: How to use the table: If the Environmental Review Officer (ERO) or designee determines that the equipment requirements cannot be met, then the contractor would need to meet Compliance Alternative 1. If the ERO or designee determines that the contractor cannot supply off-road equipment meeting Compliance Alternative 1, then the contractor must meet Compliance Alternative 2. If the ERO or designee determines that the contractor cannot supply off-road equipment meeting Compliance Alternative 2, then the contractor must meet Compliance Alternative 3.

G. PUBLIC NOTICE AND COMMENT

A "Notification of Project Receiving Environmental Review" was emailed and mailed on April 7, 2016 to responsible and trustee agencies, local jurisdictions, property owners and occupants of property within 300 feet of the project sites, and other interested parties. Due to an incorrect end date to receive public comments on the April 7, 2016 notice, a correction was sent out on April 13, 2016 extending the comment period to April 28, 2016. A total of two comments were received. One commenter asked to continue receiving notices and environmental documents on this project. The second commenter expressed concern regarding sea level rise, indicating that current building codes do not take into account sea level rise past year 2100. Project features to address sea level rise are described in Section B, Project Description, and sea level rise and flood hazards are addressed in Section E.15, Hydrology and Water Quality.

285 For purposes of this mitigation measure, "commercially available" shall mean the availability of Tier 4 equipment taking into consideration factors such as: (1) critical path timing of construction; (ii) geographic proximity to the project site of equipment; and (iii) geographic proximity of access to off-haul deposit sites.

H. DETERMINATION

On the basis of this Initial Study:

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

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

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

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

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

DATE 10/24/16

Lisa M. Gibson

Lisa M. Gibson
Acting Environmental Review Officer
for
John Rahaim, Director of Planning

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