CITY OF HAYWARD WATER POLLUTION CONTROL FACILITY IMPROVEMENTS – PHASE II PROJECT

Initial Study/Mitigated Negative Declaration

Prepared by
City of Hayward
Public Works and
Utilities
777 B Street
Hayward, CA 94545 in consultation with
Environmental Science Associates

July 2024

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Environmental Science Associates
575 Market Street, Suite 3700
San Francisco, CA 94105
415.896.5900
esassoc.com

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Acronyms and Abbreviations

AB	Assembly Bill
ACMs	asbestos-containing materials
ADA	Americans with Disabilities Act
ALUC	Airport Land Use Commission
ATCMs	air toxics control measures
BAAQMD	Bay Area Air Quality Management District
BACT	Best Available Control Technology
BMPs	best management practices
Cal/OSHA	California Occupational Safety and Health Administration
CalARP	California Accidental Release Prevention
CARB	California Air Resources Board
CBC	California Building Code
CCR	California Code of Regulations
CDDD	Demolition Diversion Deposit Program
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CGS	California Geological Survey
CH4	methane
CHP	California Highway Patrol
CLUP	Comprehensive Land Use Plan
CNDDB	California Natural Diversity Database inventory of rare plants and animals
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO2	carbon dioxide
CO_2e	carbon dioxide equivalent
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
dBA	A-weighted decibel
DNL	day-night noise level

DOC	California Department of Conservation
DPM	diesel particulate matter
DSOD	Division of Safety of Dams
DTSC	Department of Toxic Substance Control
DWR	Department of Water Resources
EBDA	East Bay Dischargers Authority
EFZs	earthquake fault zones
EOP	emergency operations plan
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulations
FEMA	Federal Emergency Management Agency
FHSZ	fire hazard severity zones
FHWA	federal Highway Administration
FTA	Federal Transit Administration
GHGRS	Greenhouse Gas Reduction Strategy
GHGs	greenhouse gases
HMCD	hazardous materials compliance division
HRA	health risk assessment
HRI	Historic Resources Inventory
KW	kilowatt
LBP	lead based paint
LED	light-emitting diode
LID	low impact development
LOS	level of service
LRA	local responsibility areas
LUST	leaking underground storage tank
MBTA	Migratory Bird Treaty Act
MEISR	maximum exposed individual sensitive receptor
MLD	Most Likely Descendant
MND	Mitigated Negative Declaration
N2O	nitrous oxide
NAHC	California Native American Heritage Commission
NOD	Notice of Determination
NPDES	National Pollutant Discharge Elimination System
NWIC	Northwest Information Center of the California Historical Resources Information System

$PM_{2.5}$	particulate matter of 2.5 microns in diameter or less
PM_{10}	particulate matter of 10 microns in diameter or less
PPV	peak particle velocity
PRC	California Public Resources Code
RCRA	Resource Conservation and Recovery Act
RPS	Renewable Portfolio Standard
RWQCB	Regional Water Quality Control Board
SFHA	Special Flood Hazard Areas
SMARA	Surface Mining and Reclamation Act
SRA	State Responsibility Area
SWPPP	storm water pollution prevention plan
SWRCB	State Water Resources Control Board
TACs	toxic air contaminants
USDOT	U.S. Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
VHFHSZ	Very High Fire Hazard Severity Zones
VMT	vehicle miles traveled
WPCF	City of Hayward Water Pollution Control Facility

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CHAPTER 1
Introduction and Purpose

1.1 Purpose of the Initial Study

The City of Hayward (City), serving as Lead Agency under the California Environmental Quality Act (CEQA) is completing the required environmental review for the Hayward Water Pollution Control Facility (WPCF)[1] Improvements – Phase II Project (Project) pursuant to CEQA Guidelines (California Code of Regulations Section 15000 et. seq.) and the regulations and policies of the City of Hayward, California.[2] This Initial Study provides the necessary information to inform the City's decision makers, other responsible agencies, and the public of the nature of the Project and its potential effect on the environment.

This Initial Study evaluates the environmental impacts that might reasonably be anticipated to result from implementing the Project. Based on the environmental review of the Project, the City may prepare a draft Mitigated Negative Declaration (MND) for the Project. An MND is a statement by the City that the Project will not have a significant effect on the environment if certain protective measures (mitigation measures) are included.

1.2 Public Review Period

Publication of this Initial Study/MND marks the beginning of a 20-day public review and comment period. During this period, the Initial Study/MND will be available to local, regional, and state agencies and interested organizations and individuals for review. Written comments concerning the environmental review contained in this Initial Study/MND during the 20-day public review period should be sent to the below contact, with email as a preferred method:

Kyle Carbert, Senior Utilities Engineer
City of Hayward
Public Works and Utilities
3700 Enterprise Ave
Hayward, CA 94545
510.583.4738
kyle.carbert@hayward-ca.gov

1 For this project document, the facility would continue to be referenced as the WPCF, but as of December 2023, the facility has been officially renamed to the Water Resource Recovery Facility (WRRF).

2 The WPCF Improvements Project evolved from the City's WPCF Facilities Plan. Phase I of the WPCF Improvements was completed previously.

1.3 Consideration of the Initial Study/MND and Project

Following the conclusion of the public review period, the City Council will consider the adoption of the Initial Study/MND for the Project at a duly noticed, regularly scheduled public meeting. The City shall consider the Initial Study/MND together with any comments received during the public review process. Upon adoption of the MND, the City may proceed with Project approval actions.

1.4 Notice of Determination

If the Project is approved, the City will file a Notice of Determination (NOD) within five days of Project approval, which will be available for public inspection and posted within 24 hours of receipt of the NOD at the Alameda County Clerk's Office for 30 days. The filing of the NOD starts a 30-day statute of limitations on court challenges to the approval under CEQA (CEQA Guidelines Section 15075[g]).

CHAPTER 2
Project Overview

1.	Project Title:	City of Hayward Water Pollution Control Facility (WPCF) Improvements – Phase II Project
2.	Lead Agency Name and Address:	Public Works and Utilities, 777 B Street Hayward, CA 94541
3.	Contact Person and Phone Number:	Kyle Carbert, Senior Utilities Engineer (510) 583-4738
4.	Project Location:	3700 Enterprise Avenue, Hayward, CA 94545
5.	Project Sponsor's Name and Address:	Kyle Carbert, Senior Utilities Engineer 3700 Enterprise Avenue, Hayward, CA 94545
6.	General Plan Designation(s):	Industrial Technology and Innovation Corridor (IC)
7.	Zoning:	IG: General Industrial
8.	Assessor Parcel Numbers:	APN 439-99-2-2, APN 439-70-2-3, and APN 439-99-3-7
9.	Summary Description of Project:	

The Project consists of the following components that would be completed concurrently at the WPCF site:

- WPCF Administration Building (Administration Building)
- Primary Effluent Equalization Facility (PE EQ Facility)
- WPCF Preliminary and Secondary Treatment Facility Improvements (Preliminary and Secondary Treatment Improvements)

The Project is intended to rehabilitate aging infrastructure, increase peak hydraulic capacity of the WPCF, comply with anticipated more stringent regulatory limitations on discharges of nutrients into San Francisco Bay, and to continue to protect the public health and the environment through reliable, high quality, cost-effective wastewater treatment in the WPCF service area. The Project will have capacity to treat municipal wastewater flow and loading generated in the service area up to the projected year 2048. Space would be reserved on site for expanding capacity to treat increased flow and loading beyond 2048, but the infrastructure required for future expansion is not evaluated as part of this CEQA document.

The Project assumes certain effluent discharge limitations will change in the future when the San Francisco Regional Water Quality Control Board (RWQCB) issues updated orders governing operation of the WPCF. Changes are expected to include a requirement to reduce discharges of total inorganic nitrogen (TIN) compounds into San Francisco Bay. Therefore, a major element of the Project is a new biological nutrient removal (BNR) treatment process designed to remove TIN. A summary of the Project's new and improved facilities and treatment processes is included in **Table 2-1**. The Project would consist of two separate construction packages: the WPCF Administration Building Project, and the WPCF Improvements – Phase II Project.

TABLE 2-1
SUMMARY OF PROJECT COMPONENTS

Component	Description	Purpose
WPCF Administration Building Project		
New building	New building with public and staff entryways, offices, locker rooms, showers, restrooms, a break room, a training room, conference rooms, space for educational displays, a master plant control room, a water quality laboratory, and ancillary facilities.	A new/modern facility will serve as the central hub for the WPCF, including space for management, engineering, administrative, laboratory, operations, and maintenance functions. The facility will replace the existing building, which has reached the end of its useful service life.
Demolition of existing building	Demolition and removal of Operations Center (also known as the existing Administration Building).	Demolition is necessary to provide space for parking and other site improvements.
Improvements to site utilities	Improved potable water, fire water, sewer, storm drainage, power supply, and fiber optic utilities within the site.	Improved utilities are needed to serve the new Administration Building.
Improvements to paving and grading	Improved roadways, access driveways, vehicle parking, electric vehicle charging stations, bicycle lockers, pedestrian walkways, landscaping, and site drainage.	Improved facilities are needed to serve the new building and comply with Hayward Municipal Code and state regulations.
Added solar power generation system on canopy over parking lot	New photovoltaic solar power generation panels mounted on a canopy over a new parking lot.	A new renewable power generating system consistent with City's sustainability goals.
Improved site security	Improved fencing, access gates, and site access control and monitoring.	Improved site security is needed to protect the new Administration Building and provide secure public parking and access.
WPCF Improvements – Phase II Project		
Primary Effluent Equalization Facility		
Primary effluent equalization tanks	Two 1.5-million-gallon, rectangular, partially buried concrete tanks with covers.	The tanks are necessary to equalize storm related peak wastewater flow through the WPCF treatment process as needed to avoid overloading treatment processes located downstream of the primary treatment facilities. The tanks will replace an existing open-air storage pond to clear space for a new BNR process described below.

Component	Description	Purpose
Odor handling improvements for equalization tanks	Odor handling system(s).	Odor handling is necessary to contain and control emissions from the equalization tanks in accordance with the requirements of the Bay Area Air Quality Management District.
Improvements to existing Trickling Filter Pump Station	Improved pumping systems to convey flow to/from the equalization tanks.	Improvements are needed to control wastewater flow to/from the new equalization tanks.
Improvements to site utilities	Improved process water, process piping, storm drainage, power supply, and fiber optic utilities within the site.	Improved utilities are needed to serve the new equalization tanks.
Improvements to paving and grading	Improved roadways, walkways, and site drainage.	Improved facilities are needed to serve the new equalization tanks.
WPCF Improvements – Preliminary and Secondary Treatment Improvements		
New grit removal facility	New wastewater degritting, washing, and dewatering process consisting of two covered concrete tanks which house degritting equipment. The facility also includes influent and effluent channels and an area to house grit washers and a grit disposal bin.	The new facility is needed to replace aged and inefficient preliminary treatment facilities and to increase hydraulic capacity to treat high flow during storm events.
Improvements to the existing northwest primary clarifier	Addition of a new primary effluent box structure and piping.	Improvements are necessary to increase hydraulic capacity of the treatment process.
New primary effluent pump station	New primary effluent pumping system housed in an existing unused structure.	A new pumping station is needed to convey wastewater flow to the new biological nutrient removal process described below.
Foul air handling for Grit Removal Facility	Exhaust ventilation system consisting of exhaust fans and discharge stack.	Foul air handling is necessary to control emissions from the new Grit Removal Facility in compliance with requirements of the Bay Area Air Quality Management District."
Improvements to existing East Trickling Filter	Rehabilitation of existing air ducts inside the East Trickling Filter dome structure.	Improvements are needed to extend the useful service life of the ventilation system for the East Trickling Filter.
New biological nutrient removal process, including one new final clarifier with sludge pumping station	Five new 1.0-million-gallon, partially buried rectangular concrete tanks and a new partially buried circular final clarifier. Related work includes a new concrete flow mixing structure, piping, mechanical equipment, power systems, and instrumentation.	The new process is needed to reduce the nutrient concentration in treated effluent discharged into San Francisco Bay in accordance with the requirements of the San Francisco Regional Water Quality Control Board.
Improvements to three existing solids contact tanks	Modification of walls to suit the process and mechanical systems, gates, and piping.	Improvements are necessary to accommodate the new biological nutrient removal process.
Improvements to two existing final clarifiers and associated return secondary sludge pumping stations	Rehabilitation of structural, mechanical, electrical, and instrumentation components of two existing final clarifiers.	Improvements are necessary to extend the useful service lives of the clarifiers and to integrate them into the new biological nutrient removal process.
Expansion of the existing final clarifier distribution structure	Addition of one cell to the existing flow distribution structure.	Expansion is necessary to serve the new final clarifier as an integral component of the biological nutrient removal process.

Component	Description	Purpose
New blower and electrical building	New masonry building housing new aeration blower and power distribution and control equipment. The building will be constructed on spread footings and grade beams and will include an elevated slab on compacted fill soil constructed above the projected flood level.	The new building is needed to deliver pressurized air necessary for the biological nutrient removal process and to house electrical equipment to power and control the process.
New alkalinity chemical handling facility	New at-grade facility with a concrete spill containment basin, chemical storage tanks, and pumps to meter caustic soda solution.	The new facility is needed to control pH in the biological nutrient removal process.
Improvements to Site Waste Pump Station	Replacement of two pumps, addition of one smaller pump, and rehabilitation of the existing concrete wet well structure.	Improvements are necessary to accommodate other improvements, to provide more reliable influent sewage pumping capacity, and to extend the useful life of the facility.
Improvements to service water treatment, storage, and distribution systems	Expansion of capacity of the existing service water system, including increased pumping, filtration, and sodium hypochlorite disinfection capacity. A new sodium hypochlorite storage and metering system will replace the existing system.	Improvement of the service water system is necessary to serve service water demands of facilities throughout the improved plant.
Improvements to site utilities, including large diameter process piping	Improved site utilities including storm water, potable water, fire water, and utility water systems as well as new process piping associated with the new facilities and upgraded existing process piping to handle peak wet weather flows.	Improved utilities are needed to serve the new/improved facilities and increase hydraulic capacity of the WPCF.
Improvements to paving and grading	Improved roadways, walkways, and site drainage.	Improved facilities are needed to serve the new/improved facilities.
Decommissioning of North Vacuator and demolition of West Trickling Filter, primary effluent equalization pond, and miscellaneous site improvements	Modification, decommissioning, demolition, and removal of existing structures and facilities.	Modification is necessary to accommodate other improvements, and demolition is necessary to provide space for improvements described above.
Improvement of electrical and control systems plantwide	Improvements to power and control systems associated with improvements described above, including power supply and fiber optic communication utilities within the site.	Improvements are necessary to integrate new and existing process control systems for proper operation of the treatment process and ancillary facilities.

SOURCE: Personal communications between M. Walkowiak (BC) and M. Dirks (ESA) regarding Hayward Phase II WPCF Improvements Project, January 8, 2024.

9. Surrounding Land Uses and Setting.

The Project site is located at the western end of Enterprise Avenue in Hayward, CA about ½-mile north of Highway 92, near the east shoreline of San Francisco Bay. The Project site is bounded by industrial uses to the north, south, and east, and open space uses to the west bordering the East Bay Regional Park District lands and a marsh. The closest residential area is approximately 0.82 miles to the east.

The Project site is approximately 0.9 miles east of California Crosspoint Academy, 1.2 miles southwest of Anthony W. Ochoa Middle School and Eden Gardens Elementary School, 1.3 miles southwest of Chabot College, 1.5 miles northwest of Impact Academy of Arts & Technology, 1.2 miles southwest of Greenwood Park, 2.0 miles northwest of Southgate Park, 1.3 miles southeast of the Hayward Regional Shoreline, and 1.6 miles southwest of the Hayward Executive Airport.

10. Other public agencies whose approval may be required (e.g., permits, or participation agreement.)

Project Component	Approval
Administration Building	PG&E: easement
	City of Hayward, Development Services Department, Building Division: demolition permit, building permit.
	City of Hayward, Development Services Department, Planning Division: plan review, tree removal permit, approval of CEQA document.
	City of Hayward, Fire Prevention and Hazmat: plan review
	City of Hayward, Public Works and Utilities Department: Grading Permit
PE EQ Facility	Bay Area Air Quality Management District (BAAQMD): Approval for odor handling system
Preliminary and Secondary Treatment Improvements	Bay Area Air Quality Management District (BAAQMD): Approval for odor handling system for Grit Removal Facility

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

Public Resources Code § 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., Assembly Bill (AB) 52) find and declare that California Native American tribes traditionally and culturally affiliated with a geographic area may have expertise concerning their tribal cultural resources. Assembly Bill (AB) 52 requires lead agencies to complete formal consultations with California Native American tribes during the CEQA process to identify tribal cultural resources that may be significantly impacted by a project. Where a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document must discuss the impact and whether feasible alternatives or mitigation measures could avoid or substantially lessen the impact. This consultation requirement applies only if the tribes have sent written requests for notification of projects to the Lead Agency. In December 2023, the City sent a letter to tribal representatives in the area to welcome participation in the AB 52 consultation process for this Project. As a result of the AB 52 tribal consultation process, no tribal cultural resources were identified in the Project area.

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CHAPTER 3
Project Description

This chapter describes the Project evaluated in this Initial Study, including the Project site location and general existing characteristics, and Project components and construction details.

3.1 Project Location and Existing Site Conditions

3.1.1 Existing Site Conditions

The Project site is in the City of Hayward, at the western end of Enterprise Avenue about ½ mile north of Highway 92, near the east shoreline of San Francisco Bay (**Figure 3-1**). The Project site is within the entire WPCF property line boundary, which is located on a 36.4-acre parcel (APN 439-99-2-2), and a 1.64-acre parcel (APN 439-70-2-3). Both parcels are owned by the City of Hayward and are within the City's jurisdiction. The Project area also includes a portion of Enterprise Avenue west of Whitesell Street in the public right-of-way. The Project site is a flat, irregularly shaped lot surrounded by fencing and landscaping. An approximately 140-foot-wide PG&E easement cuts diagonal across the portion of the site east of Whitesell Street and an approximately 75-foot-wide PG&E easement cuts east-west across the site west of Whitesell Street that are used for overhead electrical power transmission lines.

The existing approximately 6,600 square foot Operations Center on the Project site was constructed in the 1970s and expanded in the 1980s and again in the 1990s when the laboratory was expanded. There is a parking lot to the east of the existing Operations Center with 24 parking spaces. Other existing WPCF facilities include the plant's treatment facilities, sludge drying beds, and oxidation ponds to the west that are now used as wet weather storage ponds. An existing channel is used to disinfect and convey treated effluent, which is then discharged into the San Francisco Bay via the Hayward Effluent Pump Station and a shared deep-water outfall owned and operated by East Bay Dischargers Authority (EBDA).

3.1.2 Existing WPCF Operations

The WPCF treats municipal wastewater generated within the City and some small adjacent unincorporated developments. It provides secondary treatment of domestic, commercial, and industrial wastewater for the City of Hayward, serving a current collection system population of about 153,000. The WPCF was initially commissioned in 1954 with a rated treatment capacity of 4.5 million gallons per day (mgd) but soon surpassed that limit, leading to numerous expansion and improvement projects since then as the City's population grew. The plant is currently rated at an average dry weather flow (ADWF) capacity of 18.5 mgd and a peak wet weather flow capacity of 35 mgd, according to the EBDA's National Pollutant Discharge Elimination System (NPDES) permit. The City is a member of EBDA and discharges wastewater under EBDA's NPDES Permit No. CA 0037869 into San Francisco Bay via a shared deep-water outfall pipeline.

The overall liquid stream treatment process consists of screening, grit and scum removal, primary sedimentation, flow equalization, secondary biological treatment, and chlorine disinfection. The WPCF also has approximately 150 acres of oxidation ponds that can be used for temporary storage of treated secondary effluent and a facility to produce and deliver tertiary recycled water. Treatment processes for solids and sludge generated at the WPCF include receiving facilities for fats, oils, and grease (FOG), solids thickening, anaerobic digestion, and solar drying beds.

The existing preliminary and primary treatment at the WPCF consists of the headworks area, vacuators, and primary clarifiers. Preliminary treatment consists of screening, pumping, and degritting of influent sewage, and odor and air emission abatement systems. The headworks area was constructed as part of a 1996 project and modified in the 2020s. Primary treatment consists of four primary clarifiers.

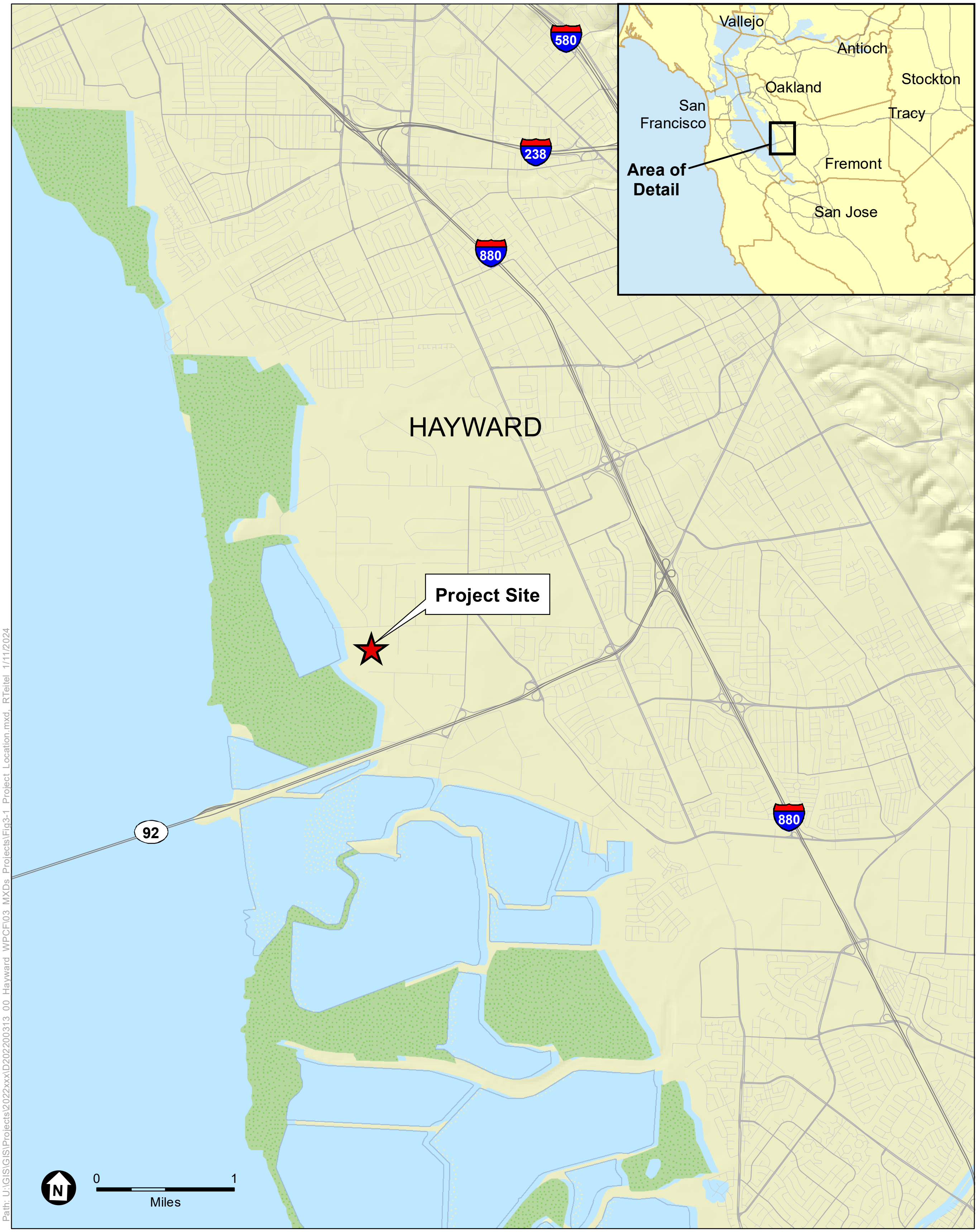
The WPCF secondary treatment process currently uses a biological trickling filter/solids contact (TF/SC) process for secondary treatment. The secondary treatment process, originally constructed in 1952, consisted of a trickling filter. A major upgrade to the trickling filter was constructed in the early 1980s. A second trickling filter and the solids contact process were added in the 2000s.

Effluent from the secondary treatment process is disinfected in an earthen, 1,600-foot-long, 7-foot-deep channel west of the treatment facilities. The channel conveys the chlorinated effluent to the Hayward Effluent Pump Station (HEPS) which is then pumped to the EBDA pipeline and outfall system. The EBDA system combines treated wastewater from the City, San Leandro, Oro Loma/Castro Valley, Union Sanitary District, Dublin/San Ramon Services District, and the City of Livermore that is discharged via a deepwater outfall to the central San Francisco Bay, west of the Oakland International Airport.

Sludge produced at the WPCF is thickened, anaerobically digested, dried in outdoor beds, and stored for up to two years in a field adjacent to the drying beds. The City hauls dried biosolids approximately once per year to an authorized disposal site for use as alternative daily landfill cover or disposal under a contract with Waste Management.

The WPCF generates renewable energy from biogas produced in the treatment process using a cogeneration engine and an array of solar photovoltaic panels. The renewable energy is used to operate the WPCF and offset fossil fuel uses in other City facilities.

The WPCF also produces tertiary treated recycled water that is used to offset a portion of the potable water demands of the City, serving industrial and landscaping water users within the service area. The recycled water treatment, storage, pumping, and distribution piping system was installed between 2018 and 2021. The system supplies water to approximately 30 customers in the industrial area to the north and south of the WPCF.



Path: U:\GIS\GIS\Projects\2022xxx\D202200313 00 Hayward WPCF\03 MXDs Projects\Fig3-1 Project Location.mxd, RTeitel 1/11/2024

SOURCE: ESRI; ESA, 2023

Hayward WPCF Improvements Phase II

Figure 3-1
Project Location

In addition to the tertiary treated recycled water system, the WPCF has three other water (W) systems in place: 1W, 2W and 3W, which are further described below.

The WPCF uses potable (1W) water for various purposes, including service in restrooms, showers, kitchens, and emergency eyewash/shower stations and as make up water for the recycled water system. The WPCF has four metered service connections from 12-inch 1W mains in Enterprise Avenue and Whitesell Street. Fire water and 1W uses are not currently separated (i.e., they are served from common service connections).

The existing 2W system delivers water that is used for seal flushing on pumps and certain uses such as emergency showers and eyewash stations. 2W is derived from 1W that has passed through an air gap to prevent cross contamination. From the air gap tank, the 2W system branches into two lines west and east of Whitesell Street.

The 3W system (also referred to as reclaimed water) consists of filtered and disinfected water produced from final clarifier effluent. It is used throughout the WPCF for various process service water demands, including yard hydrants, hose bibs at treatment facilities, backup supply for seal water for pumps, polymer dilution water, and spray nozzle systems. The 3W system includes a 3W feed pumping system, granular media filtration followed by chlorination, storage tanks, distribution pumps, and a distribution piping network that routes 3W to facilities throughout the WPCF.

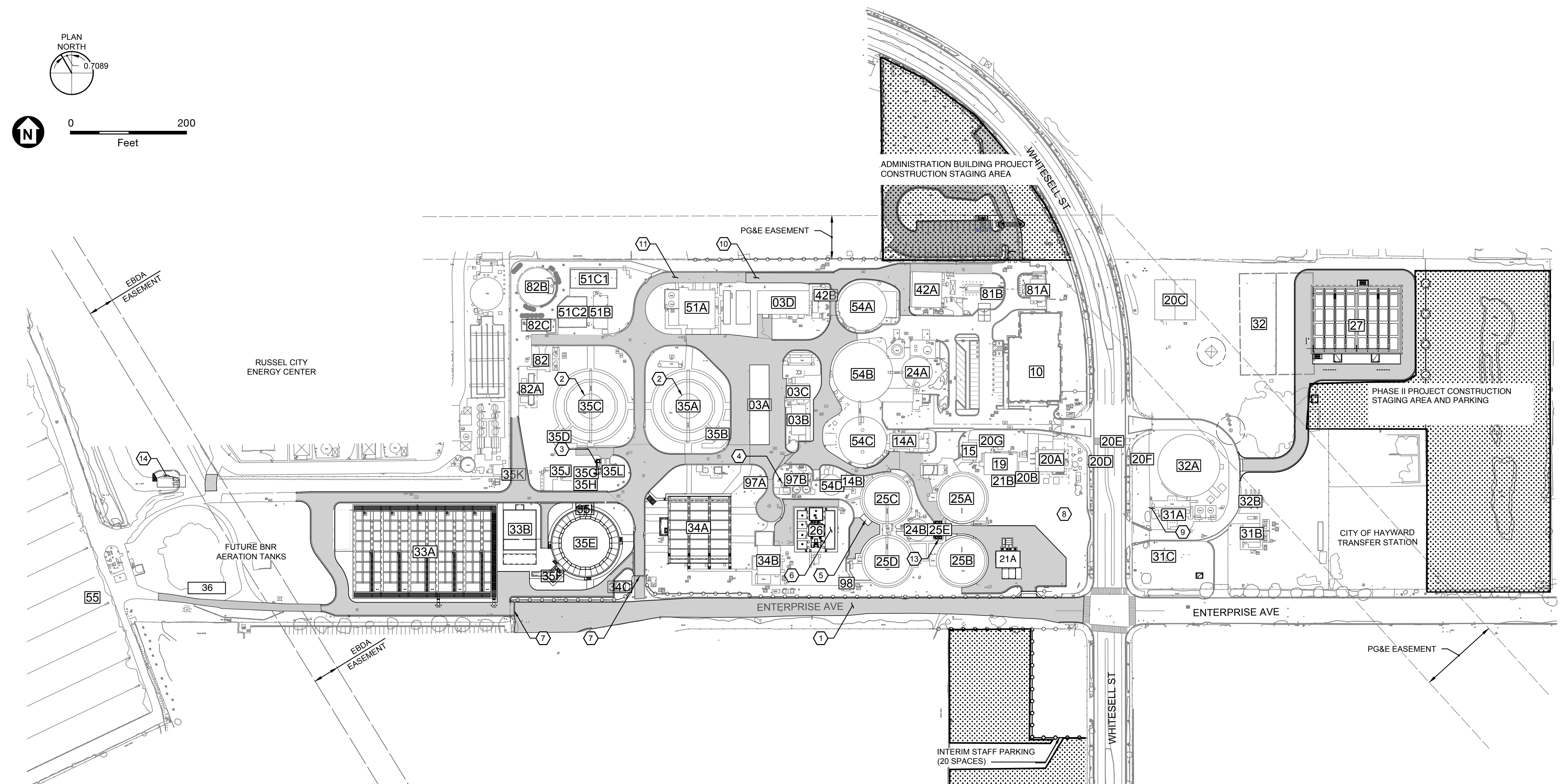
Stormwater runoff from the WPCF is directed to three locations: the primary effluent equalization basin, the SWPS, and the WPCF headworks. The system that drains to the equalization basin collects the runoff from the northern portion of the WPCF and near the Enterprise Avenue entrance to the WPCF. Stormwater directed to the equalization basins flows by gravity back to the SWPS. The drainage area that collects and directs stormwater runoff to the SWPS directly is the smallest and it includes the areas around Digesters No. 2 and 3, located at the central and northern portion of the WPCF. The remaining drainage areas on the WPCF site west of Whitesell Street drain to the headworks.

3.2 Project Components

Project components are summarized in Chapter 2. The Project's components, including modifications to existing facilities and new facilities are further described below and shown in **Figure 3-2**.

3.2.1 Administration Building

The existing Operations Center on the WPCF site has reached the end of its useful service life and would be replaced by the new two-story, approximately 21,800 square foot WPCF Administration Building. The new building would house a new laboratory, offices, and support functions. A new landscaped public entry driveway and a pedestrian walkway off Whitesell Street, 63 new vehicle parking spaces for employees and visitors, and site security systems would also be included as part of the new WPCF Administration Building. Visitor parking would be constructed in the triangular portion of the WPCF site directly north of the new Administration Building.



EXISTING FACILITIES IDENTIFICATION TABLE

ID	FACILITY NAME
03A	MAINTENANCE AND ELECTRICAL SHOP
03B	MAINTENANCE BUILDING
03C	STORAGE BUILDING 1
03D	WAREHOUSE
10	NEW ADMINSTRATION BUILDING
14B	PLANT AIR STATION
15	BOILER BUILDING
19	PRIMARY SUBSTATION BUILDING
20A	HEADWORKS
20B	FERRIC CHLORIDE FACILITY
20C	HEADWORKS BIOFILTER
20D	INFLUENT DIVERSION BOX
20E	INFLUENT DISTRIBUTION BOX
20F	RCEC SLUDGE RETURN VAULT
20G	EAST BARMINUTOR PIT
24B	SOUTH VACUATOR
25A	NORTH PRIMARY CLARIFIER
25B	SOUTH PRIMARY CLARIFIER
25D	SOUTHWEST PRIMARY CLARIFIER
	NOT USED
	NOT USED
	NOT USED
	NOT USED
31C	WATER BOOSTER PUMPS AND PAD
32	TRICKLING FILTERS BIOFILTER
32B	EAST TRICKLING FILTER FANS
34A	SOLIDS CONTACT TANKS
34B	AERATION BLOWER BUILDING 1
35G	EFFLUENT FLOW METERING VAULT
	NOT USED
35J	FINAL CLARIFIERS ELECTRICAL BUILDING
35K	RCEC JUNCTION BOX
42A	COGENERATION BUILDING
42B	GAS CONDITIONING AREA
51A	SOLIDS THICKENING BUILDING
51B	SOLIDS THICKENING BUILDING BIOFILTER FANS
51C1	SOLIDS THICKENING BUILDING BIOFILTER
51C2	SOLIDS THICKENING BUILDING BIOFILTER
52	EQUALIZATION POND
54A	DIGESTER NO. 1
54B	DIGESTER NO. 2
54C	DIGESTER NO. 3
54D	SLUDGE HOLDING TANK
54E	SLUDGE LAGOON AND PUMP STRUCTURE
55	SUMMER DRYING BEDS
81A	12kV SUBSTATION BUILDING
81B	STANDBY GENERATOR
82	WEST SUBSTATION
82A	RECYCLED WATER TREATMENT SYSTEM
82B	RECYCLED WATER STORAGE TANK
82C	RECYCLED WATER PUMP STATION
98	SWPC MCC

MODIFIED EXISTING FACILITIES IDENTIFICATION TABLE

ID	FACILITY NAME
14A	SITE WASTE PUMP STATION
24A	NORTH VACUATOR
25C	NORTHWEST PRIMARY CLARIFIER
26	PRIMARY EFFLUENT PUMPING STATION
32A	EAST TRICKLING FILTER
35A	FINAL CLARIFIER 1
35B	FINAL CLARIFIER 1 RSS PUMPING STATION
35C	FINAL CLARIFIER 2
35D	FINAL CLARIFIER 2 RSS PUMPING STATION
35L	FINAL CLARIFIERS FLOW DISTRIBUTION STRUCTURE
97A	3W FILTER FEED PUMPING STATION
97B	3W STORAGE AND DISTRIBUTION PUMPS
35H	EFFLUENT JUNCTION STRUCTURE
31A/B	TRICKLING FILTER PUMP STATION/SUBSTATION

DEMOLISHED FACILITIES IDENTIFICATION TABLE

ID	FACILITY NAME
30	WEST TRICKLING FILTER
52	EQUALIZATION POND
54E	SLUDGE LAGOON AND PUMP STRUCTURE

NEW FACILITIES IDENTIFICATION TABLE

ID	BUILDING NAME
10	NEW ADMINSTRATION BUILDING
27	PRIMARY EFFLUENT EQUALIZATION FACILITY
33A	BIOLOGICAL NUTRIENT REMOVAL AERATION TANKS
33B	AERATION BLOWER BUILDING 2
34C	ML AND TFE MIXING BOX
35E	NEW FINAL CLARIFIER 3
35F	RSS PUMPING STATION 3
35I	EFFLUENT METERING VAULT 2
36	ALKALINITY HANDLING FACILITY
21A	GRIT REMOVAL FACILITY
21B	ODOR ABATEMENT SYSTEM

2022\D202200313.00 - Hayward WPCF Improvements Phase II\05 Graphics-GIS-Modeling\Illustrator

SOURCE: Brown & Caldwell

Hayward WPCF Improvements Phase II

Figure 3-2
Project Components

ESA

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The proposed site plan is shown in **Figure 3-3**. The Administration Building would be a steel-framed structure with roof and floor framing and decking, and a spread footing foundation. The building would have architectural cladding and window wall systems on the exterior. The building would measure approximately 32 feet tall. Renderings of the proposed Administration Building are shown in **Figure 3-4**.

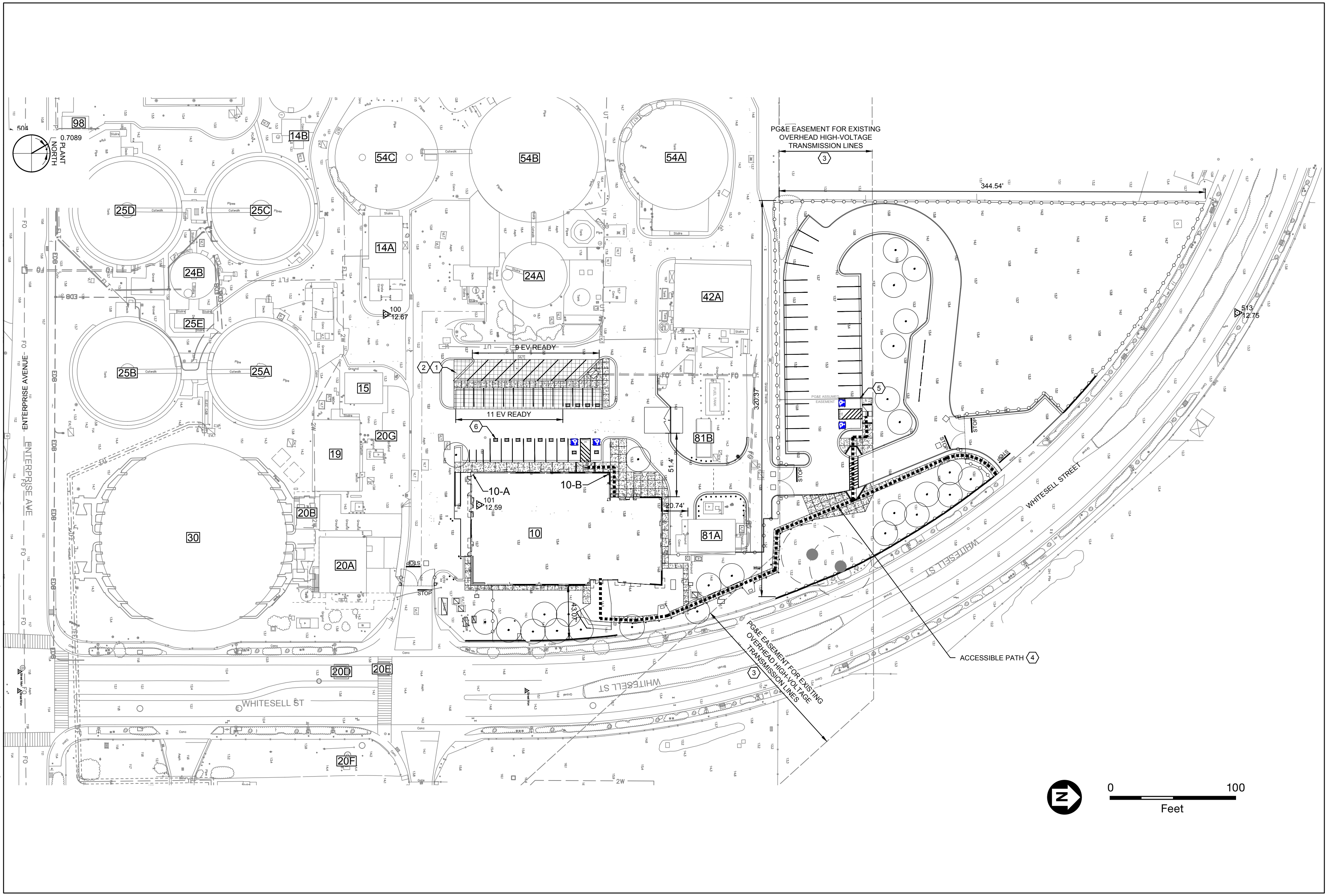
The Administration Building would include administrative offices, meeting and training rooms that can also serve as public meeting spaces, employee break and wellness facilities, shower and locker rooms for operations and maintenance staff, a multi-function water quality laboratory, a main control room serving the entire WPCF, a climate-controlled space to house supervisory control and data acquisition (SCADA) equipment, and other control and monitoring equipment for use by operations, maintenance, and laboratory staff. The Administration Building would also include space for future interpretive signs and exhibits to educate visitors.

A black metal site security fence matching the current fence along Whitesell Street would be installed at the southeast and northeast corners of the building to prevent uncontrolled public access into the site. The new site security fencing would be approximately eight feet tall and would tie into the existing fencing along Whitesell Street.

3.2.2 Primary Effluent Equalization Facility and Preliminary and Secondary Treatment Improvements

3.2.2.1 Primary Effluent Equalization Facility

The Project includes a new/relocated PE EQ Facility on the east side of Whitesell Street to clear space currently occupied by the existing PE EQ basin for construction of the new BNR facilities and to improve operability of the WPCF (refer to Figure 3-2). The new PE EQ facility would include two partially buried rectangular concrete tanks. The dimensions of the structure would be approximately 150 feet in length and approximately 160 feet in width. The two tanks would each have a liquid holding volume of approximately 1.5 mg (million gallons), for a total of 3 mg. Most of the structure would extend approximately 23 feet above ground on the south side and approximately 30 feet above ground on the north side, to accommodate a cleaning trough within the structure used for cleaning the tank with reclaimed water (3W) after an equalization event. These tanks would share a wall and appear as one facility. The tanks would be covered and equipped with an odor handling system. The PE EQ facility would also include a new maintenance access road from the ETF area, two submersible pumps located inside the tanks to return flow back to the existing Trickling Filter Pump Station (TFPS), new underground piping connecting the TFPS to the PE EQ facility, and minor improvements at the TFPS, including the addition of two submersible pumps to deliver flow to the new PE EQ Facility.



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SOURCE: Brown & Caldwell

Hayward WPCF Improvements Phase II

Figure 3-3
WPCF Administration Building Site Plan

Administration Building public entry view from northeast side

Administration Building service entry view from southeast side

Administration Building staff entry view from northwest side

Administration Building laboratory view from west side

SOURCE: Brown & Caldwell

Hayward WPCF Improvements Phase II

Figure 3-4
WPCF Administration Building Renderings

ESA

2022/D202200313.00 - Hayward WPCF Improvements Phase II/05 Graphics-GIS-Modeling/Illustrator

The approximate new structure and paving areas proposed as part of the new PE EQ Facility are listed in **Table 3-1**.

TABLE 3-1
PRIMARY EFFLUENT EQUALIZATION FACILITY

Land Use	Approximate Amount
New PE EQ Basin Area	20,700 sf
Paving around PE EQ Basin	26,300 sf
Total New Impervious Surface Area	47,000 sf

NOTES: SF = SQUARE FEET
SOURCE: Personal communications between M. Walkowiak (BC) and M. Dirks (ESA) regarding Hayward Phase II WPCF Improvements Project, January 10, 2024.

3.2.2.2 Preliminary and Secondary Treatment Improvements

This work would include upgrades to the preliminary and secondary treatment facilities (refer to Figure 3-2). The approximate new structure and paving areas proposed as part of the Preliminary and Secondary Treatment Improvements are listed in **Table 3-2** and further described below.

TABLE 3-2
PRELIMINARY AND SECONDARY TREATMENT IMPROVEMENTS COMPONENTS

Land Use	Approximate Amount
New Grit Facility	16,000 sf
New Blower and Electrical Building	16,000 sf
BNR Tanks	53,000 sf
Final Clarifier 3	26,000 sf
New Alkalinity Handling Facility	11,500 sf

NOTES: SF = SQUARE FEET
SOURCE: Personal communications between M. Walkowiak (BC) and M. Dirks (ESA) regarding Hayward Phase II WPCF Improvements Project, January 10, 2024.

Upgrades to the preliminary treatment facilities would include construction of a new grit removal facility, and new yard piping to connect to and from the new grit removal facility. The new grit facility structure would be located mostly below ground and extend approximately 15 feet above grade. Equipment and pipe racks located on top of the grit facility structure would extend approximately 25 feet above ground. The grit facility would be located at the site of the existing 150-foot-diameter by 30-foot-high West Trickling Filter (WTF), which would be demolished prior to construction of the new grit facility. The grit tanks and disposal bin would be covered and include foul air handling to meet requirements from BAAQMD.

The new Primary Effluent Pump Station would be constructed in the existing fluidized bed reactor (FBR) facility's abandoned structure.

Improvements to the existing secondary treatment process would also be included. The existing trickling filter/solids contact (TF/SC) process will be upgraded to a hybrid process that includes the TF/SC process operating in parallel with a new BNR step-feed activated sludge process.

A new BNR process, consisting of aeration tanks, a third final clarifier, a new blower and electrical building, and other ancillary facilities would be added and integrated with existing facilities. The new final clarifier (Final Clarifier No. 3) would be constructed mostly below ground and extending approximately four feet above ground. Final Clarifier No. 3 would be approximately 120 feet in diameter and extend approximately 35 feet below ground. The new blower and electrical building would be approximately 25 feet high. The architectural design of the blower and electrical building would include masonry wall construction and steel roof framing with metal decking and roofing. The building would be constructed on spread footings and grade beans and would include an elevated slab on compacted fill soil, constructed above the projected flood level. The building would include space for seven new blowers (four would be installed initially with space to add more to accommodate additional growth in the future). In addition, the improvements would include modifications to existing solids contact tanks to convert them into bio-flocculation tanks that are intended to better integrate trickling filter effluent into the BNR process.

The BNR process is intended to remove TIN and biochemical oxygen demand from the waste stream prior to discharge into San Francisco Bay. The new BNR process would be located in the footprint of the existing PE EQ basin. The BNR tanks would extend approximately five feet above ground and approximately 35 feet below ground. Piping and equipment racks on top of the tanks would extend about 15 feet above the tops of the tanks (or about 20 feet above ground).

Improvements to the secondary treatment process would also include hydraulic improvements to convey wastewater flow through the improved WPCF, replacement of gates, the construction of a new 63-inch effluent pipeline, a new effluent box, and a new alkalinity handling facility.

The new alkalinity handling facility would include tanks to store approximately 48,000 gallons of sodium hydroxide solution required for operation of the BNR process. The facility would include a spill containment basin and would be located to the southwest of the new BNR tanks. The new alkalinity facility would extend approximately 20 feet above ground to the tops of the storage tanks.

The work would also include ancillary hydraulic control structures, and replacement of existing pumps in the SWPS and the addition of a low flow pumping system in this pump station. Yard piping and electrical duct banks would be installed in a portion of Enterprise Avenue west of Whitesell Street in the public right-of-way.

The Project would retain existing secondary treatment facilities including the East Trickling Filter (ETF), solids contact tanks and associated aeration blowers, and other ancillary support facilities with minor modifications. The Project would also retain Final Clarifiers 1 and 2, but with significant structural modifications to significantly extend the useful life of the facilities. The concrete walls and floor slabs in the existing Final Clarifiers 1 and 2 have degraded and require rebuild, which would consist of construction of new interior walls and floor slabs within the existing clarifiers, installation of micropiles, and replacement of internal mechanical, electrical, and control components. The West Trickling Filter would be demolished.

3.2.3 Access

Permanent access to the plant site would be through the existing main WPCF access gate from the west side of Whitesell Street, an existing gate on the east side of Whitesell Street, and new access-controlled vehicle and pedestrian gates at 24401 Whitesell Street where the new public entrance and parking lot is located. There are also two existing access gates on Enterprise Avenue both east of Whitesell and west of Whitesell near the southern end of Enterprise Avenue. Access during construction would be through the existing vehicle gates on both sides of Whitesell Street as well as the two gates on Enterprise. In addition, a new access-controlled gate and driveway would be constructed on the southern boundary of the site along Enterprise Avenue to provide access to the new grit facility.

New asphalt-concrete paved access roads and concrete pedestrian walkways would be constructed within the WPCF to provide access to the new Administration Building from the new parking lots.

3.2.4 Infrastructure Improvements

3.2.4.1 Administration Building and Laboratory

Water

Potable water (1W) and fire water service would have separate service connections from the existing 12-inch potable water main within the public right-of-way along Whitesell Street, which is owned by the City. A new 1W service to the 1W main in Whitesell Street is proposed to serve the new Administration Building, emergency shower and eyewash stations, and other 1W uses throughout the plant.

The existing service connection in Whitesell Street would be converted to a dedicated fire water service to separate the 1W and fire water systems. The pipe would connect to the fire suppression system in the new Administration Building and hydrants within the WPCF. The connection to the WPCF would be fitted with a new double check detector assembly (DCDA) to prevent backflow.

Sewer

Sanitary sewer connections for the new Administration Building would be made to the existing sewer system. Sewer pipe material type, minimum size, and slope would be based on City standard specifications.

Storm Drainage

Storm water runoff from the area surrounding the new Administration Building would connect to the three existing and new storm drain catch basins east of the new Administration Building on site and discharge into the existing sewer system. The WPCF site is located within a hydromodification-exempt area per the Alameda County Hazard Mitigation Plan Susceptibility

Map. Surface runoff would be captured and routed through the treatment process in accordance with the existing NPDES discharge permit.

Surface runoff in the triangular parcel north of the Administration Building would be captured and directed to a sanitary sewer so it can be treated with sewage through the WPCF as required by the WPCF's discharge permit. A small portion of the runoff in landscaped areas immediately adjacent to Whitesell Street would be directed into the existing storm drainage system serving Whitesell Street since that area is not part of the treatment process area covered by the discharge permit.

Electricity and Natural Gas

No natural gas connections or new electrical services from PG&E are proposed. The new Administration Building would be provided with power at 480 volts (V) from an existing motor control center in the existing 12 kV Substation.

In addition, new solar photovoltaic power generation equipment would be installed on a canopy over the parking lot west of the new Administration Building to serve a portion of the power demand of the building.

Telecommunications

The new Administration Building's SCADA equipment room would connect to the WPCF's existing fiber optic communication network to allow monitoring and control of the treatment processes from a new control room in the building and telecommunications.

3.2.4.2 Primary Effluent Equalization Facility and Preliminary and Secondary Treatment Improvements

Process Yard Piping and Electrical

The PE EQ Facility and Preliminary and Secondary Treatment Improvements require various buried piping and electrical duct banks to interconnect the treatment facilities within the WPCF. New pipes would supplement or replace existing pipes. The piping would range up to 63-inches in diameter and would be used to convey untreated, partially treated, and fully treated flow through the WPCF as well as process and utility water piping.

Some of the piping and an electrical duct bank would be constructed within Enterprise Avenue west of Whitesell Street due to space constraints within the WPCF. The piping would be located adjacent to other process piping installed in Enterprise Avenue as part of a previous improvement project at the WPCF and an existing 60-inch storm drain line that is not associated with the WPCF.

New piping installed in Enterprise Avenue would consist of 54-inch-diameter piping used to convey flow between the primary and secondary treatment processes. The piping would extend for approximately 500 feet within the section of Enterprise Avenue west of Whitesell Street.

Water

The Preliminary and Secondary Treatment Improvements and PE EQ facility would include improvements to 1W, 2W, 3W, and fire water systems within the WPCF. The improvements include separation of 1W, 2W, and fire water systems that are currently cross connected and improvements to backflow prevention in accordance with current City standards. The source of water at all emergency shower and eyewash stations would be changed from 2W to 1W.

Improvements to the 3W system would include increased capacity (from approximately 500 gallons per minute (gpm) to approximately 1,000 gpm) to serve new demands resulting from the Preliminary and Secondary Treatment Improvements and PE EQ Facility. The proposed 3W system improvements include increased pumping capacity, new piping, new filters, and a new sodium hypochlorite storage and feed system. A new sodium hypochlorite chemical facility is required to replace an old, aged, and undersized facility. The new facility would be constructed within unused space within the existing 3W facility.

Sewer

No new sewer connections or sewer line upgrades are proposed as part of the PE EQ facility or the Preliminary and Secondary Treatment Improvements.

Storm Drainage

The Project includes new paved areas serving the PE EQ Facility and the Preliminary and Secondary Treatment Improvements. Stormwater runoff from these new paved areas would be captured and directed to the treatment process in accordance with the existing NPDES permit.

Electricity

The PE EQ facility and Preliminary and Secondary Treatment Improvements would be powered from the existing power distribution network within the WPCF. New facilities would receive power fed from new or existing electrical duct banks connected to the WPCF's existing power distribution network. The new PE EQ facility would require approximately 2,500 kilowatt-hours (kWh)/year for operation because the facility would operate intermittently, primarily during peak wet weather events or during maintenance activities. The Preliminary and Secondary Treatment Improvements would increase power usage at the WPCF by approximately 5.3 million kWh/year for operations. No new power feeds from PG&E to the WPCF are anticipated as part of these Project components.

New and replacement exterior lighting, where required, would be equipped with photocells or timers and positioned in a such a way to maximize safety while minimizing light pollution. Lighting at existing facilities may be improved as needed for worker safety or energy efficiency.

Telecommunications

The PE EQ Facility and the Preliminary and Secondary Treatment Improvements would include connections to the existing SCADA network to provide remote monitoring and control capabilities. No new telecommunication services to the WPCF are proposed.

3.2.5 Vegetation and Landscaping

3.2.5.1 Administration Building and Laboratory

Existing landscaping and fencing along Whitesell Street adjacent to the new Administration Building would remain.

A new landscaped public entry driveway and a pedestrian walkway public entryway are proposed as part of the new Administration Building, which would consist of low-maintenance and low-water-use shrubs and grasses in accordance with City ordinances and policies. Tree planting will be limited due to the concentration of utilities along the east side of the proposed new building and restrictions on planting trees within an existing PG&E easement through the site. Approximately seven trees will be planted in the visitor lot just north of the PG&E easement and 18 trees will be planted in the strip along Whitesell Street. Taller shrubs would be planted to help screen the existing substation. The irrigation system would be designed with low-water subsurface inline drip emitters using recycled water produced at the WPCF.

3.2.5.2 Primary Effluent Equalization Basin and Preliminary and Secondary Treatment Improvements

No landscaping is proposed as part of the new PE EQ Facility. Removal of some landscaping along Enterprise Avenue, including up to 10 trees, is required for the PE EQ Facility and the new grit facility as part of the Preliminary and Secondary Treatment Improvements.

3.2.6 Sustainability Features

3.2.6.1 Administration Building and Laboratory

The sustainability goals for the new Administration Building are to achieve a Leadership in Energy and Environmental Design (LEED) Silver rating in accordance with standards established by the United States Green Building Council and a zero net energy use in accordance with City policy.

Interior and exterior lighting and building mechanical systems for the new Administration Building would be designed to meet the requirements of California Energy Code Title 24, City policies, and LEED certification. New light fixtures would include light-emitting diode (LED) lamps for high energy efficiency. Lighting levels would be based on the Illumination Engineer Society guidelines. Battery-powered LED emergency lights and exit signs would also be provided.

Exterior lighting proposed for the new Administration Building would be equipped with photocells or timers and be positioned in a such a way to maximize safety while minimizing light pollution. Interior lighting in the new Administration Building would operate using manual controls and occupancy sensors.

Electric vehicle (EV) charging stations would be provided in the parking lot west of the Administration Building in accordance with City ordinances. No EV charging stations are included in the visitor parking lot to the north because they are not allowed in PG&E's easement.

Water conservation will be achieved through the use of low-flow fixtures in accordance with California Plumbing Code regulations. Landscaping will be irrigated with recycled water.

In addition, new solar photovoltaic power generation equipment would be installed on a canopy over the parking lot west of the new Administration Building to serve a portion of the power demand using renewable energy.

3.2.6.2 Primary Effluent Equalization Facility and Preliminary and Secondary Treatment Improvements

The work would be completed in accordance with California's CALGreen code, and lighting would be designed with energy-efficient LED fixtures. Exterior lighting would be equipped with photocells or timers and be positioned in such a way to maximize safety while minimizing light pollution.

3.2.7 Operations and Maintenance

3.2.7.1 Administration Building

The operation of the new Administration Building would be similar to existing conditions and would accommodate up to twelve additional employees beyond the existing Operations Building's current staffing level. Consistent with existing operations, the new Administration Building would function as a daily workspace for administrative, supervisory, engineering, and laboratory staff, as well as workspace for operations and maintenance staff who may spend most of the workday in the plant.

Long-term site maintenance would involve management of vegetation on-site, keeping the site clean and free of debris, and trimming shrubbery and trees to maintain clear views into the site for both fire prevention and public safety.

3.2.7.2 Primary Effluent Equalization Facility

Operation and maintenance of the proposed new PE EQ Facility would be similar to the existing condition. The new facility is not expected to require additional workers or additional truck trips.

Consistent with the existing operations, the new PE EQ Facility would limit the maximum flow through the secondary treatment process to avoid overloading the secondary process.

3.2.7.3 Preliminary and Secondary Treatment Improvements

Operation and maintenance of the proposed Preliminary and Secondary Treatment Improvements would be similar to existing operations. Up to twelve new workers would be required to support the operation, maintenance, and analytical laboratory testing requirements for the new treatment facilities. These twelve new workers would be accommodated in the new Administration Building. In addition, the Preliminary and Secondary Treatment Improvements would require two additional bi-weekly truck trips to provide alkalinity chemicals (sodium hydroxide) used in the BNR process.

3.3 Construction

The construction schedule and process for each of the three project components is further described below. The Project would also require the demolition of various facilities and systems at the WPCF to accommodate the proposed improvements, including the existing Operations Center, WTF, PE EQ basin, selected yard piping, selected yard electrical, and various site improvements (paving, fencing, storm drains etc.). Demolition of the existing (and currently abandoned) fixed film reactor pump station is required to make space for new yard piping connecting the new Grit Removal Facility to the Primary Influent Distribution Structure. Modification of the Trickling Filter Pump Station and modification of the existing Fluidized Bed Reactor (to accommodate the new Primary Effluent Pump Station) and North Vacuator facilities would also be required.

During construction, plant utility water would be required for dust control purposes. Flows from groundwater dewatering operations during construction would go to site drains which eventually are returned either to the headworks facility or to the Site Waste Pump Station where they are then conveyed through the treatment process.

Construction activities would typically occur Monday through Friday, limited between the hours of 7:00 AM to 7:00 PM. Nighttime construction activity is not anticipated except when needed to maintain WPCF treatment operations during alterations and connections to existing facilities, or when modifications are required to be performed under low flow conditions. In addition to the WPCF property, there is a 3.92 acre lot south of Enterprise at the intersection of Whitesell Avenue and Enterprise (APN 439-99-3-7) that will be used for temporary employee parking and contractor staging during construction. Construction of the PE EQ facility and Preliminary and Secondary Treatment Improvements would require temporary roadway closures for one lane along Enterprise Avenue and one lane along Whitesell Street.

3.3.1 Administration Building

Construction of the new Administration Building would take place over an approximate 2-year period, anticipated to start in January 2025, and would consist of site preparation, grading, building construction, landscape/hardscape improvements, and commissioning.

Three trees would be removed for construction of the new building and site improvements.

The construction staging and construction worker vehicle parking area would be located at the northernmost end of the site in the triangular parcel west of Whitesell Street and north of the main WPCF site. Temporary parking for construction workers may also be allowed in the undeveloped parcel south of the WPCF at the intersection of Enterprise Avenue and Whitesell Street. Construction of the Administration Building would require several short-term temporary lane closures along Whitesell Street to accommodate utility construction.

The disturbance area for the new Administration Building and Laboratory includes approximately 2.6 acres (114,000 square feet), including the staging area.

Construction would require approximately 4,100 cubic yards of soil to be imported and an estimated 3,000 cubic yards of export. The proposed excavation is anticipated to be up to five feet deep in most locations and up to 30 deep for utility connections. Approximately 0.5 acres (23,700 square feet) of new impervious surfaces would be added to the site.

Demolition of existing site improvements would occur in the initial stages of construction. Following completion of the new Administration Building the existing building would be demolished to clear space for the new parking lot to the west.

3.3.1.1 Utility Line Construction

The work includes construction of various yard piping and electrical/controls systems described above. In addition, hot water supply and return pipelines along the west side of the existing Operations Center would be relocated from the existing road to tap into existing underground piping near the Cogeneration Building.

3.3.2 Primary Effluent Equalization Facility and Preliminary and Secondary Treatment Improvements

Construction of the PE EQ facility and Preliminary and Secondary Treatment Improvements would occur simultaneously, starting in October 2025.

3.3.2.1 Primary Effluent Equalization Facility

Construction of the PE EQ facility would consist of demolition, site preparation, trenching, grading, tank construction, minor improvements to the trickling filter pump station, electrical improvements to the trickling filter substation, minor repairs to the east trickling filter ventilation system, implementation of a temporary bypass system using winter sludge drying beds for PE equalization and a temporary pipeline for flow conversion, final hardscape improvements, and commissioning. Up to four trees along Enterprise Avenue would be removed for construction of the PE EQ facility.

The construction would include a deep-pile foundation under the PE EQ tanks.

To enable construction of the new BNR facilities simultaneously with the new PE EQ Facility, the Project would utilize two existing winter sludge drying beds for temporary PE equalization storage. PE flow would be intercepted upstream of the existing PE EQ basin by temporary diesel-powered pumps. Additional temporary diesel-powered pumps would be installed at the drying beds to return flow to the treatment process using the same pipeline. The temporary diesel-powered pumps would convey flow to and from the winter sludge drying beds through a temporary pipeline[3] (**Figure 3-5**).

3 Assumes three engines operating for approximately four hours in a given day; with the potential need for up to four engines operating up to twelve hours in a given day.

Temporary piping to convey flows to and from the winter beds would be approximately 36 inches in diameter and 1,400 feet in length. The temporary pipeline would be constructed aboveground within the existing WPCF boundaries using high-density polyethylene or polyvinyl chloride (PVC), except at road crossing points and at the Russel City Energy Center back gate area, where it would be installed in a trench covered with trench plates, or direct buried. The temporary pipeline installation would be carried out over a period of approximately two weeks.

The winter sludge drying beds are anticipated to be used for equalization during Project construction under wet weather conditions when flows exceed the existing secondary treatment capacity of 35 million gallons per day (mgd). Based on historical wet weather events at the WPCF, the winter sludge drying beds are anticipated to be used up to three times each wet weather season while the new PE EQ Facility is being constructed, with plant operators diverting up to three million gallons each wet weather event.

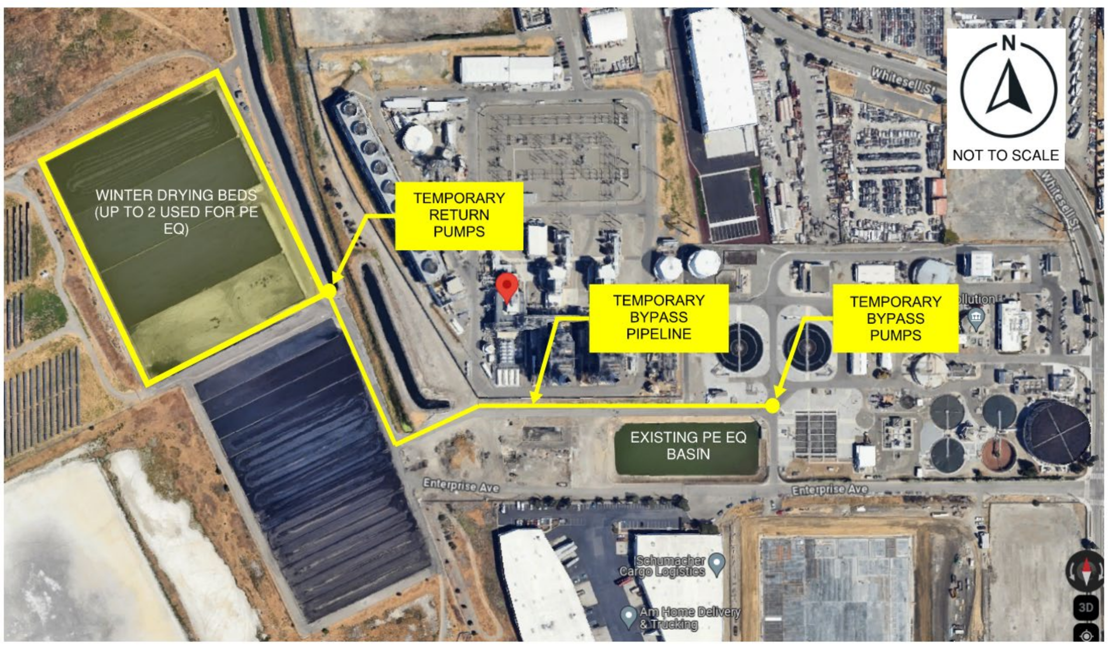

Figure 3-5 Temporary Pipeline and Winter Bed Use During Construction

Each diversion would last approximately four to twelve hours to manage peak wet weather flow conditions when influent flows exceed the secondary treatment capacity of 35 mgd, or for other WPCF operational and maintenance needs during construction. Two winter sludge drying beds cover approximately 3.3 acres (142,300 square feet) and can store up to 3 million gallons of primary effluent.

The construction staging and construction worker vehicle parking area would be located at the east end of the site in the area around the new PE EQ facility north of Whitesell Street, and in the City-owned lot south of Enterprise Avenue (See Figure 3-2).

The disturbance area for the site includes approximately 4.2 acres (184,500 square feet), including staging areas that may need to be cleared.

Construction would require approximately 1,700 cubic yards of soil to be imported and an estimated 7,600 cubic yards of export. Approximately 1.1 acres (47,000 square feet) of new impervious paved surfaces would be added to the site after construction. The proposed excavations are anticipated to be up to ten feet deep for the main structure, up to 25 feet deep for yard piping and up to six feet for the temporary pipeline.

Utility Line Construction

Trenching would be required for yard piping and electrical/controls duct banks. New pipes would be installed to either supplement or replace existing pipes. New electrical duct banks and associated electrical wiring would be added to interconnect the treatment facilities within the WPCF.

3.3.2.2 Preliminary and Secondary Treatment Improvements

Construction of the Preliminary and Secondary Treatment Improvements would take place over an approximately 4.5-year period , and would consist of demolition, site preparation, grading, trenching, structure construction, yard piping installation, electrical duct bank construction, hydraulic and drainage improvements, and commissioning. The construction of the Preliminary and Secondary Treatment Improvements would be sequenced to keep the WPCF operational throughout construction and commissioning.

The construction would include precast concrete deep-pile foundations under water-holding tanks (grit facility, Final Clarifier No. 3, and the BNR facility). Micropiles would be installed through the existing slab and extending under the existing Final Clarifiers Nos. 1 and 2.

As part of the Preliminary and Secondary Treatment Improvements, the WTF would need to be demolished before construction of the new grit facility can take place. The rehabilitation of the existing clarifiers would occur after commissioning of the new third clarifier, Final Clarifier No. 3.

The construction staging and construction worker vehicle parking area would be in the rectangular parcel just south of Enterprise Avenue and west of Whitesell Street as well as area adjacent to the Primary Effluent Equalization Facility (See Figure 3-2). The disturbance area for Preliminary and Secondary Treatment Improvements is approximately 9.05 acres (394,500 square feet).

Construction would require approximately 4,900 cubic yards of infill to be brought into the site and would result in 25,000 cubic yards of export. Approximately 1 acre (43,560 square feet) of impervious surfaces would be added to the site after construction. The proposed excavations for the BNR facility and Final Clarifier No. 3 are anticipated to be up to 35 feet deep below ground surface surrounding the existing basin. Approximately 0.3 acres (14,000 square feet) of new impervious surfaces would be added for the grit facility and excavations are anticipated to be up to 15 feet.

Some existing vegetation on the WPCF site near the intersection of Whitesell Street and Enterprise Avenue would be removed as required for demolition of the WTF and construction of the new grit facility. Up to six trees along Enterprise Avenue would be removed for demolition of the WTF.

Utility Line Construction

Trenching would be required for yard piping and electrical duct banks. New pipes would be installed to either supplement or replace existing pipes. New electrical duct banks and associated electrical wiring would be added to interconnect the treatment facilities within the WPCF. Portions of the yard piping and electrical duct banks would occur in Enterprise Avenue west of Whitesell Street within the public right of way.

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CHAPTER 4
Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

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

DETERMINATION: (To be completed by the Lead Agency)
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, nothing further is required.

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CHAPTER 5
Environmental Checklist

5.1 Aesthetics

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
I. AESTHETICS — Except as provided in Public Resources Code Section 21099, would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area?	☐	☐	☒	☐

5.1.1 Environmental Setting

The Project is located at the corner of Enterprise Avenue and Whitesell Street, and along the western end of Enterprise Avenue, about ½ mile north of Highway 92, and approximately 1 mile from the east shoreline of the San Francisco Bay. The surrounding areas are commercial, industrial, and open space uses. The Project is in the City's West Industrial Corridor, which lies between the open spaces of the Baylands to the west and commercial and industrial areas to the north, east and south. Uses in the industrial corridor include manufacturing facilities, fabrication shops, warehouses, trucking operations, and automotive salvage yards. Much of the development in the West Industrial Corridor consists of one- and two-story concrete buildings and storage yards for vehicles and equipment. The Calpine – Russell City Energy Center is located adjacent to the western boundary of the WPCF. This site is dominated by metal towers and structures, most of which are over two stories tall. The Baylands west of the West Industrial Corridor are publicly accessible open spaces. Mature trees are present throughout the surrounding area, including within or along public sidewalk areas.

Roadways in the vicinity of the Project area include Whitesell Street and Enterprise Avenue, providing primary access to the WPCF operational area and the primary means by which the public can observe the Project area. From outside the WPCF (through which Whitesell Street and

Enterprise Avenue pass) viewing opportunities of the Project area are limited, distant, and largely screened by other WPCF operational area facilities. These facilities are industrial in character, with most buildings being one to two stories high. Other WPCF facilities include sludge drying beds and oxidation ponds to the west. The WPCF oxidation ponds comprise a large area just to the west and northwest of the operational area of the WPCF. A high density of mature trees and shrubs occur along the Project site's boundary adjacent to Enterprise Road. A combination of metal and chain link fencing that is approximately 8 feet high surrounds the WPCF. The site also includes parking spaces and space for materials and equipment storage. Because the Project area is in an urban setting with relatively heavy landscape vegetation along Enterprise Avenue, views of the site are generally blocked or restricted by trees, shrubs, fencing, and buildings, and views are even further restricted as viewers move away from the Project site. The Project area and vicinity are relatively flat and allow for distant views of the East Bay Hills to the east, and Diablo Mountains to the northeast.

The Project site is within an urbanized area with existing sources of light and glare, including the lights from the nearby commercial uses and streetlights on Enterprise Road and Whitesell Street. Vehicle headlights also contribute to the existing light and glare conditions.

The nearest sensitive receptors consist of residences located approximately 0.8 miles east of the Project site.

5.1.2 Regulatory Framework

5.1.2.1 State

State Scenic Highways Program

The State Scenic Highways Program aims to protect and enhance the natural scenic beauty of California highways and adjacent corridors through special conservation treatment. The closest state scenic highways to the Project site are I-580 from San Leandro East to Route 24, located approximately 6.6 northeast of the Project site, and Route 84 from Route 238 (Mission Boulevard) East to I-680, located approximately 9.6 miles southeast of the Project site.

5.1.2.2 Local

City of Hayward Municipal Code Section 10-2.640 – Lighting and Marking

The City of Hayward municipal code includes guidance for lighting and marking of parking areas in the City. Parking facilities shall be adequately lit for safety and security as determined by the City Engineer. The minimum requirement is one foot candle of light[4] across the entire surface of the parking area. In addition, exterior lighting is required to be designed, erected, and maintained so that light or glare is not directly cast upon adjacent properties or public rights-of-way.

Aisles, approach lanes, and maneuvering areas are required to be marked and maintained with directional arrows and striping to control traffic flow. Each parking space must be striped, marked, and maintained by surface markings or other effective means and must be maintained so

4 A foot-candle is defined as one lumen per square foot. Rather than measuring the amount of light that leaves a light source (lumen output), foot-candle measurements focus on the amount of light that reaches a surface area.

as to be readily visible at all times. All compact parking spaces and designated employee parking spaces per Section 2.400, Parking Space Width Reductions, must be clearly marked as such. These guidelines would apply to the new parking associated with the Project.

City of Hayward Municipal Code Section 10-1 – Zoning Ordinance

The City of Hayward Zoning Ordinance's intention is to promote public health, safety, and general welfare and preserve and enhance the aesthetic quality of the City by providing regulations to ensure an appropriate mix of land uses in an orderly manner. The City of Hayward Zoning Ordinance contains regulations for developments proposed to occur within the City governing the location, height, and size of buildings and structures erected, enlarged, or altered. In addition, zoning requirements regulate and determine the area, depth, and width of yards, setback areas, and other open spaces. The Project would be subject to the Zoning Ordinance regulations for a new development located within the IG zoning district.

City of Hayward Industrial District Design Guidelines

The City of Hayward has adopted Design Guidelines prepared by the Planning Division to provide specific guidance to preserve and enhance the desired character of existing neighborhoods while promoting architectural and design excellence in buildings, open space, landscape, and public spaces, including the Industrial District Design Guidelines.

The purpose of the Industrial District Design Guidelines is to enhance and improve the overall appearance of the Industrial Technology and Innovation Corridor by providing design direction for development. Design guidelines promote high-quality site and architectural design, convey expectations, and ensure consistent application to all new developments. Development in the Industrial District is characterized by functional, well-designed development to improve the economic viability of properties and to enhance the visual character of the Industrial Technology and Innovation Corridor. (City of Hayward 2019)

Allowed uses within these designations, which may be more industrial or commercial, like the Project, should follow the applicable guidelines in the City's Industrial District Design Guidelines.

City of Hayward 2040 General Plan Policies

The City of Hayward 2040 General Plan (General Plan) defines scenic vistas in the City as views of the San Francisco Bay and the East Bay Hills. The designation of a scenic freeway or expressway traverses or provides the most efficient routes to or between areas of primary, scenic, recreational, and cultural attractions. According to the General Plan, the Project site is not along a roadway that would be considered a scenic freeway or expressway. In addition, three freeways in the vicinity of the Project site have an Alameda County scenic highway designation: I-580, I-880, and SR 92 (City of Hayward 2014). The nearest Alameda County scenic highway designation scenic highway to the Project site is SR 92, approximately 0.5 miles south of the Project site.

Policies in the General Plan have been adopted to avoid or mitigate aesthetic impacts from development projects. The following policies apply to the Project.

City of Hayward 2040 Policies Relevant to Aesthetics	
Policy LU-6.7	The City shall encourage developments within the Industrial Technology and Innovation Corridor to incorporate the following design strategies: • Provide attractive on-site landscaping and shade trees along street frontages and within employee and visitor parking lots. • Screen areas used for outdoor storage, processing, shipping and receiving, and other industrial operations with a combination of landscaping and decorative fences or walls. • Encourage consistent architectural facade treatments on all sides of buildings. • Screen roof-top equipment with roof parapets. • Design shipping and receiving areas and driveways to accommodate the turning movements of large trucks. • Develop coordinated and well-designed signage for tenant identification and wayfinding. • Incorporate attractive building and site lighting to prevent dark pockets on the site. • Provide pedestrian walkways to connect building entrances to sidewalks. • Use landscaped buffers with trees and attractive sound walls to screen adjacent residential areas and other sensitive uses.
Policy LU-9.1	The City shall ensure that all City-owned facilities are designed to be compatible in scale, mass, and character with the neighborhood, district, or corridor in which they are located.
Policy PFS-1.5	The City shall ensure that public facilities, such as utility substations, water storage and treatment plants, and pumping stations are located, designed, and maintained so that noise, light, glare, or odors associated with these facilities will not adversely affect nearby land uses. The City shall require these facilities to use building and landscaping materials that are compatible with or screen them from neighboring properties.

5.1.3 Discussion

a) *Would the Project have a substantial adverse effect on a scenic vista?* **Less-than-Significant Impact**.

Construction and Operation

The General Plan defines scenic vistas or resources in the City as views of the San Francisco Bay and the East Bay hills (City of Hayward 2014). However, the Project site and vicinity do not include views of the San Francisco Bay. Additionally, views of the East Bay hills are obstructed by intervening buildings and landscaping. As mentioned above, the Project site is relatively flat. Motorists and bicyclists see these views from Enterprise Avene and Whitesell Street. However, such views are temporary, fleeting, and obscured by intervening buildings and landscaping. The visibility of prominent viewpoints would not be obstructed from the construction of the new buildings and site improvements. Additionally, the development of the proposed buildings and site improvements would not impact scenic vistas since no scenic vistas are observable in the immediate Project vicinity due to existing topography, buildings and landscaping, and the new buildings and site improvements would not obstruct distant views. For these reasons, the development of the Project would not directly affect a scenic vista or scenic resource, and this impact would be less than significant.

b) *Would the Project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?* **No Impact**.

Construction and Operation

The closest officially designated scenic highways by the California Department of Transportation to the Project site are I-580 from San Leandro East to Route 24, located approximately 6.6 northeast of the Project site, and Route 84 from Route 238 (Mission Boulevard) East to I-680, located approximately 9.6 miles southeast of the Project site. The Project area is not visible from any state scenic highways. Additionally, no rock outcroppings, historic buildings, or potentially historic resources are located on-site or near the Project area (as further described in Section 5.5, *Cultural Resources*), such that views of such resources could be affected. The Project site is not within any area designated as a scenic resource. Therefore, there would be no impact.

c) *In non-urbanized areas, would the Project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the Project is in an urbanized area, would the Project conflict with applicable zoning and other regulations governing scenic quality?* **Less-than-Significant Impact**.

The City of Hayward is an urbanized area, as defined in CEQA Guidelines Section 15387 and as mapped by the U.S. Census. The Project site is in a densely developed part of the City, and the surrounding area includes commercial, industrial, and open space uses. The zoning ordinance includes development standards for each zoning district, including standards for maximum building height and number of stories. All new development is subject to a design review process that includes a review of architecture and site planning. The General Plan Land Use designation for the Project site is Industrial Technology and Innovation Corridor (IC), and the Zoning is General Industrial (IG). The General Plan contains goals regarding visual resources; the primary goal focuses on enhancing, preserving, and increasing the aesthetic qualities of scenic resources (Policy PFS-1.5). The Project would include exterior lighting, where required, that would be equipped with photocells or timers and positioned in such a way as to maximize safety while minimizing light pollution. Additionally, the architectural design of the new structures would be similar to the existing structures and in compliance with the City's Industrial District Design Guidelines. The City's Municipal Code includes several regulations that protect the City's visual character and control light and glare. Light and glare associated with the Project is further discussed under checklist item d) below.

Given the limited scenic corridors in proximity to the Project and because the Project site is within an area with limited views near non-urbanized areas located to the west, this analysis also considers the potential for the Project to substantially degrade the existing visual character or quality of public views of the site and its surroundings.

Construction

Most public users within the Project area are pedestrians, motorists, and cyclists along Enterprise Road and Whitesell Street, and these public users may see and note construction equipment at the Project site during construction. Existing vegetation and fencing partially obstruct views of the WPCF from these roadways. Construction in this very flat, industrialized area would be visible only when the viewer is relatively close, when there are no obstructions, and when the construction equipment is particularly large. Construction of the Project would be visually consistent with the working industrial character of the WPCF and adjacent land uses and would not affect the existing visual character or quality of public views of the site and its surroundings. This impact would be less than significant.

Operation

The new facilities associated with the Project could be seen from public vantage points by motorists, pedestrians and cyclists from Enterprise Road and Whitesell Street, but such views would be temporary and fleeting. The new structures proposed would range in height from two feet to 35 feet, generally consistent with the height of the existing buildings and structures and would be visually consistent with the current built-out industrial and urban environment in the area. The new buildings and structures associated with the Project would not be expected to meaningfully change the visual character or quality of public views of the site or its surroundings.

The Project includes a new landscaped public entry driveway and a pedestrian walkway around the new Administration Building, which would consist of low-maintenance and low-water-use shrubs and grasses in accordance with City ordinances and policies. Due to the concentration of utilities along the east side of the proposed building and restrictions on work within an existing PG&E easement through the site, tree planting would be limited to certain areas. Approximately seven trees would be planted in the visitor lot just north of the PG&E easement and 18 trees would be planted in the strip along Whitesell Street. Taller shrubs would be planted to help screen the existing above-ground electrical boxes. The proposed landscaping would enhance the visual character of the Project site and the surrounding area.

With the inclusion of landscaping and new treatment facilities similar in appearance to existing WPCF components, the Project would not degrade the existing visual character or quality of public views of the site and its surroundings. The Project would also be consistent with the General Plan goals and policies regulating scenic quality in the City and comply with the Industrial District Design Guidelines governing new industrial development. This impact would be less than significant.

d) *Would the Project create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area?* **Less-than-Significant Impact**.

Light pollution includes all unwanted light in the night sky, including glare, light trespass, sky glow, and over-lighting.

Construction

Construction activities include standard equipment and building materials that would not be expected to result in offsite glare effects. Further, the nearest sensitive residential receptors are located approximately 0.8 miles from the Project site. Nighttime construction activity is not anticipated except when needed to maintain WPCF treatment operations during alterations and connections to existing facilities, or when modifications are required to be performed under low flow conditions. In some cases, nighttime lighting may be required to facilitate safe access for operations staff to navigate active construction zones. Nighttime lighting when used would be visible from Enterprise Road and Whitesell Street. Public views of the Project site would be partially obstructed from these roadways by existing vegetation and fencing. It is not anticipated that many pedestrians would be using the sidewalks along these roadways during the nighttime, so the views would be limited to those experienced by motorists or cyclists passing by the site and would be temporary and fleeting. Construction lighting therefore would not result in adverse effects on nighttime views and impacts would be less than significant.

Operation

The nearest sensitive residential receptors are located approximately 0.8 miles east of the Project site and would not result in impacts related to glare associated with building surfacing. As discussed above, the Project would add to existing lighting; however, the new exterior lighting, where required, proposed for the Project would be equipped with photocells or timers and positioned in such a way as to maximize safety while minimizing light pollution. All lighting would conform to the City of Hayward Municipal Code Section 10-2.640 – Lighting and Marking and the Security Standards Ordinance (No.90-26). The Administration Building would be a steel-framed structure with architectural cladding and window wall systems on the exterior. The new PE EQ facility would include two partially buried rectangular concrete tanks. The new blower and electrical building architectural design would include masonry wall construction and steel roof framing with metal decking and roofing. The Project would also include the construction of a new grit facility, which would be approximately 25 feet high to the top of the pipe rack and include materials similar to existing structures at the WPCF. Therefore, the Project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area, and impacts would be less than significant.

5.2 Agriculture and Forestry Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
II. AGRICULTURE AND FORESTRY RESOURCES — In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California 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 (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

5.2.1 Environmental Setting

CEQA requires evaluating agricultural and forest/timber resources where they are present. The Project site is on land classified by the California Department of Conservation as Urban and Built-Up Land (DOC 2022a). No Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance is in the Project area or on the Project site. In addition, no lands in the Project area or the Project site are in the Williamson Act Program (DOC 2022b). No agricultural activities take place within or near the Project area. The Project site does not contain any forest/timber resources.

5.2.2 Regulatory Framework

5.2.2.1 State

In California, agricultural land is considered under CEQA. According to Public Resources Code §21060.1, "agricultural land" is identified as prime farmland, farmland of statewide importance, or unique farmland, as defined by the U.S. Department of Agriculture land inventory and monitoring criteria, as modified for California. The Project site's designation is "Urban and Built-Up Land." The Project site's designation is not "Prime Farmland," "Grazing Land," or surrounded by "Farmland of Local Importance" by the California Department of Conservation (DOC 2022a).

CEQA also requires consideration of impacts on lands under Williamson Act contracts. None are present on the Project site (DOC 2022b).

The Project site does not contain any forest land as defined in Public Resources Code section 12220(g), timberland as defined by Public Resources Code section 4526, or property zoned for Timberland Production as defined by Government Code section 51104(g).

5.2.2.2 Local

City of Hayward 2040 General Plan Policies

The City of Hayward 2040 General Plan includes policies that have been adopted to avoid or mitigate agricultural impacts. The policies relate to preservation of agricultural lands, which do not pertain to the Project.

5.2.3 Discussion

a-e) *Would the Project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? Would the Project conflict with existing zoning for agricultural use, or a Williamson Act contract? Would the Project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))? Would the Project result in the loss of forest land or conversion of forest land to non-forest use? Would the Project 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 conversion of forest land to non-forest use?* **No Impact**.

Construction and Operation

The Project site is surrounded by and designated as "Urban and Built-Up Land" by the California Department of Conservation (DOC 2022a). As a result, the Project would not conflict with zoning for agricultural use or convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use. Therefore, there would be no impact. Further, the Project site is not on land under a Williamson Act contract (DOC 2022b). As a result, the Project would not conflict with existing zoning for agricultural uses or a Williamson Act contract.

The Project would not result in the rezoning of forest land as defined in Public Resources Code section 12220(g), timberland as defined by Public Resources Code section 4526 or Government Code section 51104(f), or timberland production zones as defined by Government Code section 51104(g), as the Project site does not contain any of these lands. The Project site contains no forest land, timberland, or production zones. As such, the Project would not impact forest resources.

The Project site does not contain forest land as defined in Public Resources Code section 12220(g), timberland as defined by Public Resources Code section 4526, or property zoned for Timberland Production as defined by Government Code section 51104(g). Therefore, the Project would not involve other changes in the existing environment, which could convert the developed area to non-agricultural or non-forest uses due to their location or nature. No Impact would occur from the development of the Project.

5.3 Air Quality

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
III. AIR QUALITY — Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☒	☐	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

5.3.1 Environmental Setting

The location is within the San Francisco Bay Area Air Basin (SFBAAB), which is under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). Air quality in the SFBAAB is influenced by such natural factors as topography, meteorology, and climate, in addition to the presence of existing air pollution sources and ambient conditions. The air basin's moderate climate steers storm tracks away from the region for much of the year, although storms often affect the region from November through April. Alameda County's proximity to the Pacific Ocean and exposure to onshore breezes provides generally good air quality in the county.

5.3.1.1 Criteria Air Pollutants

Criteria air pollutants are a group of six common air pollutants for which the U.S. Environmental Protection Agency (USEPA) has set national ambient air quality standards (NAAQS), including ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM) 10 microns[5] or less in diameter (PM_{10}), PM 2.5 microns or less in diameter ($PM_{2.5}$), and lead. Most of the criteria pollutants are emitted as primary pollutants. Ground level ozone, however, is a secondary pollutant that is formed in the atmosphere by chemical reactions between oxides of nitrogen (NO_x) and reactive organic gases (ROG) in sunlight. Concentrations of criteria air pollutants are used as indicators of ambient air quality conditions. Under amendments to the federal Clean Air Act (CAA), the USEPA classifies air basins or portions thereof as either "attainment" or "non-attainment" for each criteria air pollutant, based on whether or not the national standards have been achieved. In addition to the criteria air pollutants identified by the USEPA, California has added four state criteria air pollutants (visibility reducing particles, sulfates, hydrogen sulfide, and vinyl chloride) to the California ambient air quality standards (CAAQS). The California CAA, which is patterned after the federal CAA, also requires areas to be designated as "attainment" or "non-attainment" for the more stringent state standards. Thus,

5 A micron is one-millionth of a meter.

areas in California have two sets of attainment/non-attainment designations: one set with respect to the national standards and one set with respect to the state standards. The SFBAAB is designated as a non-attainment area with respect to the state and federal 8-hour ozone standards, the state 1-hour ozone standard, the state 24-hour PM_{10} standard, the state annual PM_{10} standard, the federal 24-hour $PM_{2.5}$ standard, and the state annual $PM_{2.5}$ standard. The SFBAAB is designated as an attainment area, or unclassified, relative to all the other criteria pollutant standards (BAAQMD 2024).

Source types, health effects, and future trends associated with each air pollutant are described below.

Ozone

Short-term exposure to ozone can irritate the eyes and cause constriction of the airways. Besides causing shortness of breath, ozone can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema. Ozone is not emitted directly into the atmosphere, but is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving ROG and $NO_{X,}$ which are known as precursor compounds for ozone.

Significant ozone production generally requires ozone precursors to be present in a stable atmosphere with strong sunlight for approximately three hours. Ozone is considered both a secondary and regional air pollutant because it is not emitted directly by sources, but is formed downwind of sources of ROG and NO_X under the influence of wind and sunlight. Ozone concentrations tend to be higher in the late spring, summer, and fall, when the long sunny days combine with regional subsidence inversions to create conditions conducive to the formation and accumulation of secondary photochemical compounds, like ozone.

Carbon Monoxide

Ambient CO concentrations normally are considered a local effect and typically correspond closely to the spatial and temporal distributions of vehicular traffic. Wind speed and atmospheric mixing also influence CO concentrations. Under inversion conditions, CO concentrations may be distributed more uniformly over an area that may extend some distance from vehicular sources. When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces the blood’s oxygen-carrying capacity. This reduces the amount of oxygen that can reach the brain, heart, and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia, and for fetuses.

CO concentrations have declined dramatically in California as a result of existing controls and programs. Most areas of the state, including the region surrounding the Project site, have no problem meeting the state and federal standards for CO. Measurements and modeling for CO were important in the early 1980s when CO levels were regularly exceeded throughout California. In more recent years, CO measurements and modeling results have not been a priority in most California air districts, given the retirement of older polluting vehicles, lower emissions from new vehicles, and improvements in fuels.

Nitrogen Dioxide

NO_2 is a reddish-brown gas that is a byproduct of combustion processes. NO_2 may be visible as a coloring component of a brown cloud on high-pollution days, especially in conjunction with high ozone levels.

Vehicle internal combustion engines and industrial operations are the main sources of NO_2, which is an air quality concern because it acts as a respiratory irritant and is a precursor of ozone. NO_2 is a major component of the group of gaseous nitrogen compounds commonly referred to as NO_X, which are produced by fuel combustion in motor vehicles, industrial stationary sources, ships, aircraft, and rail transit. Typically, NO_X emitted from fuel combustion are in the form of nitric oxide (NO) and NO_2. NO is often converted to NO_2 when it reacts with ozone or undergoes photochemical reactions in the atmosphere. Therefore, NO_2 emissions from combustion sources are typically evaluated based on the amount of NO_X emitted from the source.

Sulfur Dioxide

SO_2 is a combustion product of sulfur or sulfur-containing fuels such as coal and diesel. SO_2 is also a precursor to the formation of atmospheric sulfate and particulate matter and contributes to the potential atmospheric formation of sulfuric acid that could precipitate downwind as acid rain. The concentration of SO_2, rather than the duration of exposure, is an important determinant of respiratory effects. Exposure to high SO_2 concentrations may result in edema of the lungs or glottis and respiratory paralysis.

Particulate Matter

PM_{10} and $PM_{2.5}$ represent fractions of particulate matter that can be inhaled into the air passages and the lungs and can cause adverse health effects. Some sources of particulate matter, such as wood burning in fireplaces, demolition, and construction activities, are more local, while others, such as vehicular traffic, have a more regional effect. Very small particles of certain substances (e.g., sulfates and nitrates) can cause lung damage directly, or can contain adsorbed gases (e.g., chlorides or ammonium) that may be injurious to health. Particulates also can damage materials and reduce visibility.

Large dust particles (those with a diameter greater than 10 microns) settle out rapidly and are easily filtered by the human breathing passages. This large dust is of more concern as a soiling nuisance than as a health hazard. The remaining fraction, PM_{10} and $PM_{2.5}$, are a health concern, particularly when present at levels exceeding the federal and state ambient air quality standards. $PM_{2.5}$ (including diesel exhaust particles) is thought to have greater effects on health, because these particles are so small and thus can penetrate to the deepest parts of the lungs. Scientific studies have suggested links between fine particulate matter and numerous health problems including asthma, bronchitis, and acute and chronic respiratory symptoms such as shortness of breath and painful breathing. Diesel particulate is carcinogenic and considered a toxic air contaminant as discussed below. Recent studies have shown an association between morbidity (suffering from a disease or medical condition) and mortality (premature deaths) and daily concentrations of particulate matter in the air. Children are more susceptible to the health risks of PM_{10} and $PM_{2.5}$ because their immune and respiratory systems are still developing.

The California Air Resources Board (CARB) has estimated that achieving the ambient air quality standards for PM_{10} could reduce premature mortality rates by 6,500 cases per year (CARB 2002).

Lead

Ambient lead concentrations meet both the federal and state standards in the Project area. Lead has a range of adverse neurotoxin health effects and was formerly released into the atmosphere primarily via leaded gasoline products. The phase-out of leaded gasoline in California caused atmospheric lead levels to decrease.

5.3.1.2 Toxic Air Contaminants

Toxic air contaminants (TACs) are state-designated, airborne substances that are capable of causing short-term (acute) and long-term (chronic or carcinogenic, i.e., cancer-causing) adverse human health effects (i.e., injury or illness). TACs include both organic and inorganic chemical substances. They may be emitted from a variety of common sources including gasoline stations, automobiles, dry cleaners, industrial operations, and painting operations, as well as heavy-duty trucks and heavy equipment. TACs are regulated differently than criteria air pollutants at both the federal and state levels. At the federal level, these airborne substances are referred to as hazardous air pollutants.

5.3.1.3 Odorous Emissions

Odors are generally regarded as an annoyance rather than a health hazard. Manifestations of a person's reaction to odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache). The ability to detect odors varies considerably among the population and is quite subjective. People may have different reactions to the same odor. An odor that is offensive to one person may be perfectly acceptable to another (e.g., coffee roaster). An unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. In a phenomenon known as odor fatigue, a person can become desensitized to almost any odor and recognition occurs only with an alteration in the intensity.

The occurrence and severity of odor impacts depend on the nature, frequency, and intensity of the source, wind speed and direction, and the sensitivity of receptors. Odor impacts should be considered for any proposed new odor sources located near existing sensitive receptors, and for any new sensitive receptors located near existing odor sources. Generally, increasing the distance between the sensitive receptor and the odor source will mitigate odor impacts.

5.3.1.4 Sensitive Receptors

Some receptors are considered more sensitive to air pollutants than others. The reasons for greater than average sensitivity include age, pre-existing health problems, proximity to emissions sources, and duration of exposure to air pollutants. Schools, hospitals, and convalescent homes are relatively sensitive to poor air quality because children, elderly people, and the infirm are more susceptible to respiratory distress and other air-quality related health problems than the general public. Children are particularly sensitive to air pollution due to their rapid breathing rate, smaller body size, and early developmental stage of their respiratory system. Residential areas are sensitive to poor air quality because people usually stay at home for extended periods of time, with greater associated exposure to ambient air quality. Recreational uses are also considered sensitive because vigorous exercise associated with recreation places a high demand on the human respiratory system and increases exposure to ambient air quality conditions. The closest residence (sensitive receptor) to the Project site is a residential area located approximately 0.8 miles to the east. There is a Navigation Center for providing temporary housing to the north of the Project site.

5.3.2 Regulatory Setting

The BAAQMD CEQA Air Quality Guidelines, adopted in 2010 and amended in 2011, 2017, and again in 2022, assist in the evaluation of air quality impacts of projects and plans proposed within the SFBAAB. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process, consistent with CEQA requirements, and include recommended thresholds of significance, mitigation measures, and background air quality information. They also include recommended assessment methodologies for TACs, odors, and greenhouse gas emissions. The BAAQMD recommended project-level air quality thresholds of significance are shown in **Table 5.3-1**. The analysis presented in this section is based on the BAAQMD's 2022 thresholds to evaluate the Project's impacts on air quality.

TABLE 5.3-1
BAAQMD PROJECT-LEVEL AIR QUALITY THRESHOLDS OF SIGNIFICANCE

Pollutant	Construction-Related	Operational-Related	
	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
PM_{10}/$PM_{2.5}$ (fugitive dust)	BMPs	None	

SOURCE: BAAQMD, 2022.

ABBREVIATIONS: ROG = reactive organic gases; NO_X = oxides of nitrogen; PM_{10} = particulate matter with diameter equal to or less than 10 microns; $PM_{2.5}$ = particulate matter with diameter equal to or less than 2.5 microns; BMPs = best management practices

5.3.3 Discussion

The following analysis of air quality impacts considers the potential impacts related to emissions of nonattainment pollutants, their precursors, and TACs on the surrounding community. Therefore, ozone precursors (ROG and NO_X), PM_{10}, $PM_{2.5}$, and diesel particulate matter (DPM), are the focus of this assessment.

a) *Conflict with or obstruct implementation of the applicable air quality plan?* **Less-than-Significant Impact.**

Construction and Operation

The federal CAA and the California CAA require any air district that has been designated as a nonattainment area relative to the NAAQS and the CAAQS to prepare and submit a plan for attaining and maintaining the standards. The most recently adopted air quality plan for the SFBAAB is the 2017 Clean Air Plan. The Clean Air Plan is a road map that demonstrates how the Bay Area will implement all feasible measures to reduce ozone in accordance with the requirements of the California CAA. It also provides a control strategy to reduce ozone, PM, TACs, and GHGs (BAAQMD 2017). In determining consistency with the Clean Air Plan, this analysis considers whether the Project would:

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

The Clean Air Plan includes 85 control measures aimed at reducing air pollutants and GHGs in the SFBAAB. Many of these measures address stationary sources and will be implemented by the BAAQMD using its permit authority, and therefore, are not suited for implementation through local planning efforts or project approval actions. BAAQMD's recommended method for demonstrating consistency with the Clean Air Plan is to show that project emissions would not exceed significance thresholds. As discussed under impact discussion b), below, the Project's net increase in emissions of criteria air pollutants would not exceed the significance thresholds for ROG, NO_X, PM_{10}, and $PM_{2.5}$. The Project would not introduce any new sources of lead emissions; consequently, quantification of lead emissions is not required, and such emissions are not evaluated further in this analysis. Thus, criteria air pollutant emissions that would be generated from construction and operation of the Project would not conflict with the Clean Air Plan. Therefore, this impact would be considered less than significant, and no mitigation is required.

b) *Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?* **Less-than-Significant Impact with Mitigation.**

Construction

Construction activities are short term and typically result in combustion exhaust emissions (e.g., vehicle and equipment tailpipe emissions), including ozone precursors, PM_{10}, and $PM_{2.5}$ from combustion and in the form of fugitive dust from on-road vehicles and off-road equipment. If emission rates of ROG, NO_x, PM_{10}, or $PM_{2.5}$ from combustion do not exceed the thresholds of significance described in the BAAQMD CEQA Guidelines and shown in Table 5.3-1, the emissions are considered to have a less-than-significant adverse air quality impact. BAAQMD takes a qualitative approach to assessing construction-related emissions of fugitive dust. According to the BAAQMD CEQA Guidelines, a project would be considered to have a less-than-significant impact from fugitive dust emissions if the project implements the BAAQMD Basic Construction Mitigation Measures.

Pollutant emissions associated with construction of the Project would be generated from the following general construction activities: (1) ground disturbance from grading, excavation, etc.; (2) vehicle trips from workers traveling to and from the construction areas; (3) trips associated with delivery of construction supplies and fill materials to, and hauling debris and spoils from, the construction areas; and (4) fuel combustion by on-site construction equipment. The amount of emissions that would be generated on a daily basis would vary, depending on the intensity and types of construction activities that would occur simultaneously.

Each of the three project components would have its own construction schedule, with the PE EQ facility and Preliminary and Secondary Treatment Improvements starting concurrently.

- Construction of the new Administration Building would begin in January 2025 and take approximately 2 years.
- Construction of the new PE EQ facility would begin in October 2025 and take approximately 2 years.
- Construction of the Preliminary and Secondary Treatment Improvements would begin in October 2025 and take approximately 4.5 years.

Project construction emissions were estimated using CalEEMod version 2022.1.1.24 and are presented in **Table 5.3-2**. CalEEMod default values were used throughout the model, including the construction schedule. User-generated construction scheduling in CalEEMod relies on specific start and end dates for construction phases such as demolition, site prep, grading, building construction, paving, and architectural coating. In addition, the construction schedule accounts for the quantities and operating hours for specific types of construction equipment throughout these phases. Because the available Project information did not have this level of detail, the CalEEMod model generated a default construction schedule and equipment list instead. The default schedule predicted shorter construction periods for each of the Project components than what has been planned by the applicant. The default schedule predicted that, based on the Project component's planned start dates, the overall Project would be completed in 2026. The Project construction is predicted to continue through 2030. This shorter modeled construction schedule represents the same overall amounts of construction emissions that would be emitted during the schedule but occurring with greater intensity and over a shorter amount of time. This was necessary due to the use of CalEEMod to develop the construction equipment list and phase schedule. Therefore, the CalEEMod results based on the default schedule present a more conservative (higher) estimate of average daily emission rates during construction. The table shows these conservative average daily construction emissions for each year based on the planned start dates for each Project component and compares them to the BAAQMD significance thresholds for construction. The construction years shown in this table do not represent an intent to condense the planned schedule, but rather show the conservative estimate of average daily construction emissions compared to the BAAQMD significance thresholds. The diesel-powered pumps that would be used during PE EQ construction would only operate during wet weather events, assuming three engines operating for approximately four hours in a given day. Emissions were calculated using factors from CalEEMod for diesel pumps.[6]

As shown in Table 5.3-2, unmitigated average daily construction emissions of ozone precursors, PM_{10}, and $PM_{2.5}$ would not exceed the BAAQMD thresholds of significance for construction, and no mitigation would be required for criteria pollutants generated by construction equipment and trucks. As discussed above, the BAAQMD has chosen to take a qualitative approach to the assessment of fugitive dust emissions from construction, and projects that implement the BAAQMD Basic Construction Mitigation Measures would be considered to have a less-than-significant impact with respect to construction-related fugitive dust emissions of $PM_{2.5}$ and PM_{10}.

TABLE 5.3-2
UNMITIGATED PROJECT CONSTRUCTION EMISSIONS

Construction Year	ROG (ppd)	NO_X (ppd)	PM_{10} exhaust (ppd)	$PM_{2.5}$ exhaust (ppd)	PM_{10} fugitive (ppd)	$PM_{2.5}$ fugitive (ppd)
2024	1.6	15.8	0.7	0.6	0.8	0.2
2025	4.3	34.3	1.2	1.1	2.6	0.7
2026	10.8	24.2	0.9	0.8	0.5	0.1
BAAQMD Thresholds	54	54	82	54	Note c	Note c
Significant (Yes or No)?	No	No	No	No	No	No

NOTES:

a. Project construction emissions estimates were made using CalEEMod version 2022.1.1.24. See Appendix A for model outputs and more detailed assumptions.
b. Values in bold are in excess of the applicable BAAQMD significance threshold.
c. BAAQMD's construction-related significance thresholds for PM_{10} and $PM_{2.5}$ apply to exhaust emissions only and not to fugitive dust. The BAAQMD recommends Best Management Practices (BMPs) to control construction-generated fugitive dust.

ABBREVIATIONS: ppd = pounds per day; tpy = tons per year

SOURCE: Appendix A.

Therefore, implementation of **Mitigation Measure AIR-1, Implement BAAQMD Basic Construction Mitigation Measures**, is recommended to mitigate the fugitive dust impact**.** With implementation of Mitigation Measure AIR-1, the Project impact from construction emissions of criteria air pollutants would be less than significant.

6 If a fourth engine and/or longer operating hours are required (up to twelve hours a day), the Project would remain below impact thresholds.

Mitigation Measure AIR-1: Implement BAAQMD Basic Construction Mitigation Measures. Hayward WPCF shall implement the following measures during construction to mitigate fugitive dust emissions:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
4. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.
5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer’s specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
8. Post a publicly visible sign with the telephone number and person to contact at Hayward WPCF regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD’s phone number shall also be visible to ensure compliance with applicable regulations.

Operation

Following construction, operation of the Project is anticipated to be similar to existing conditions with the new Administration Building and the Preliminary and Secondary Treatment Improvements is expected to require up to twelve more workers each and generate two additional bi-weekly delivery truck delivery. Operational emissions associated with the increase in commute trips from the additional workers and delivery truck were addressed in the CalEEMod emissions modeling performed for the Project (Appendix A). The modeling confirmed that this small increase in vehicle trips over existing conditions results in a negligible increase in emissions that would not exceed the operational BAAQMD thresholds of significance for criteria air pollutants. Therefore, operational criteria air pollutant emissions associated with the Project would be considered less than significant.

c) *Expose sensitive receptors to substantial pollutant concentrations?* **Less-than-Significant Impact.**

Construction

Short-term project construction activities would generate DPM. The majority of DPM exhaust emissions that would be generated during construction would be from the use of diesel off-road equipment with a smaller amount generated by the use of heavy duty trucks to deliver building material and equipment to the site. The closest residence (sensitive receptor) to the Project site is a residential area located approximately 0.8 miles to the east. The zone of influence for health risk to sensitive receptors is a 1,000-foot radius from the fence line of the source of emissions (BAAQMD 2022). At a distance of over 4,000 feet, the closest residence lies outside of the zone of influence. The Navigation Center, located approximately 1,300 feet to the northwest of the majority of construction activity for the Project, provides temporary housing; therefore, there is not a potential for long-term exposure to a permanent resident. Risk analyses are based on an exposure duration longer than an occupant of a navigation center is typically present. Therefore, the risk assessment focused on the closest residential and worker receptors.

There is a potential for workers at businesses adjacent to the WPCF to be exposed to DPM emissions during the construction period; however, these workers would only be present at this location during work hours. The potential exposure from DPM emissions to these workers would cease when Project construction activities are complete. In addition, worker receptor exposure parameters are much lower than those for a child receptor at a residence. A child receptor is much more vulnerable to effects from TACs (including DPM) than an adult worker via the higher exposure parameters assumed for a child receptor (e.g., more sensitivity to TACs, higher breathing rates). In addition, with the BAAQMD Basic Construction Mitigation Measures implemented (refer to checklist item b) above) that include measures that minimize both fugitive $PM_{2.5}$ and DPM emissions, there would not likely be a significant health risk to these workers.

DPM emissions would be generated at the Project site throughout the duration of construction activities. Table 5.3-2 shows that the maximum PM_{10} emissions (PM_{10} is considered the surrogate for DPM to ensure conservative modeling assumptions) from construction at the Project site would be anywhere from 0.7 to 1.2 pounds per day. Considering that the nearest sensitive receptor is outside of the zone of influence for health risk to sensitive receptors, Project impacts would not be considered substantial and would not result in a significant incremental cancer risk (BAAQMD 2022). Impacts related to exposure of sensitive receptors would be less than significant.

Operation

Operational impacts from the Project are anticipated to be similar to existing conditions. The new components would be expected to require up to twelve more workers, and generate two additional bi-weekly delivery truck delivery. It is assumed that the passenger vehicles used by the new workers would likely be gasoline-powered. TACs from gasoline combustion are not risk drivers like diesel combustion TACs. Therefore, there would not be a substantial exposure to sensitive receptors from elevated TAC concentrations, especially with the closest residence at a distance greater than 1,000 feet. The operational emissions from the small increase in mobile sources would generate negligible TAC emissions relative to existing conditions. As a result, the impact related to exposure of sensitive receptors to substantial TAC emissions from the Project operations would be less than significant.

d) *Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?* **Less-than-Significant Impact.**

Construction and Operation

The use of architectural coatings, as well as on-site diesel-powered equipment can produce odorous exhaust; however, equipment use at the Project site would be temporary, and potential odors would not affect a substantial number of people in the vicinity, given the location of the Project site with respect to residential land uses. Therefore, construction of the Project would not create objectionable odors that would affect a substantial number of people.

The types of land use development that pose potential odor problems include wastewater treatment plants, refineries, landfills, composting facilities, and transfer stations. The Project is for the construction and installation of facilities at an existing wastewater treatment plant. Odors from existing wastewater treatment activities are already part of current background conditions, and the new facilities would include components for odor handling. The Project supports existing activities at the wastewater treatment plant and accounts for increased flows and loads to the WPCF due to projected population growth through 2048. While the WPCF would serve more people, the wastewater volume would not exceed the facility's rated capacity. Therefore, operation of the Project would not create new objectionable odors that would affect a substantial number of people. This impact would be less than significant.

5.4 Biological Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
IV. 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 Game 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 Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☒	☐	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

5.4.1 Environmental Setting

Hayward has a Mediterranean climate characterized by relatively mild winters and warm summers. The July average high is approximately 71 degrees, and the average January low is approximately 42 degrees. (City of Hayward General Plan 2014).

The WPCF is surrounded on three sides by commercial development and roadways, and to the west by tidal marshes connected to San Francisco Bay. The following vegetation communities and habitat types occur within the WPCF property line boundary:

5.4.1.1 Developed/Landscaped

Developed/landscaped areas are present throughout the Project site and comprise the primary land cover at the WPCF that would be disturbed by the Project. The Project area is largely composed of developed land that includes existing buildings, treatment structures, driveways, walkways, and parking lots with occasional landscape plantings, including ornamental trees. Developed/landscaped habitats lack native vegetation. These areas provide minimal habitat opportunities for most sensitive plants and wildlife, but in an otherwise urban environment may provide cover, foraging, and nesting habitat for common bird species, as well as reptiles and small mammals tolerant of disturbance and human presence. Within the developed WPCF area, cliff swallow (*Petrochelidon pyrrhonota*) nests were observed under building eaves, and one shed was observed with openings suitable for bat entry.

5.4.1.2 Annual Grassland

Fragmentary annual grassland vegetation occurs in the margins of the WPCF parking lots and paths, around structures, and in the vicinity of the holding ponds. Where present, the annual grassland community supports sparse cover of non-native annual grasses and forbs, and weedy species adapted to colonizing and persisting in disturbed upland habitats. Such vegetation includes barley (*Hordeum vulgare*), soft chess (*Bromus hordeaceus*), foxtail barley (*Hordeum murinum* ssp. *leporinum*), red brome (*Bromus madritensis* ssp. *rubens*), and slender wild oat (*Avena barbata*). Although small relic grassland patches do not support wildlife, larger ones can provide cover, foraging, and nesting habitat for a few common bird species, reptiles and small mammals.

5.4.1.3 Open Water

Treated effluent is diverted from the EBDA outfall in wet weather events and stored in large evaporative holding ponds, formerly oxidation ponds, located to the west of the WPCF. The water in these managed ponds does not connect to the bay or other outside waters.

The former oxidation ponds contain some bulrush (*Schoenoplectus* sp.) with sparse pickleweed (Salicornia virginica) vegetation occurring at the perimeter of the former oxidation ponds. The former oxidation ponds are actively used by waterfowl and shorebird species including the great egret (*Ardea alba*), Brewer’s blackbird (*Euphagus cyanocephalus*), red-winged blackbird (*Agelaius phoeniceus*), and gulls.

Adjacent to the oxidation ponds is a stone-lined water channel that conveys treated effluent to a chlorination station before passing on to the effluent pump station where it is discharged to the EBDA forcemain for discharge to the Bay. Sparse annual grasses and Pampas grass (*Cortaderia* spp.) are present along the banks. The area also contains summer and winter solar sludge drying beds. To enable construction of the new BNR facilities simultaneously with the new PE EQ Facility, the Project would utilize two existing winter sludge drying beds for temporary PE equalization storage. Flow to and from the winter drying beds would be through a temporary pipeline. A new permanent pipe would also be connected to the effluent channel.

Closer to the WPCF just east of the summer and winter sludge drying beds is a primary effluent equalization basin used to store peak flows in excess of the existing secondary treatment capacity during wet weather events. In addition, there is an existing abandoned sludge lagoon, a concrete-lined basin surrounded by rock slopes.

5.4.1.4 Special-Status and Protected Species

The term *special-status species* refers to plant and wildlife species that are considered sufficiently rare that they require special consideration and/or protection and should be, or currently are, listed as rare, threatened, or endangered by the federal and/or state governments. Such species are legally protected under the federal and/or state Endangered Species Acts or other regulations or are species that are considered sufficiently rare by the regulatory and scientific community to qualify for protection. *Special-status species* include the following:

- Species listed or proposed for listing as threatened or endangered under the federal Endangered Species Act (FESA) (Code of Federal Regulations Title 50, Section 17.12 [listed plants] and Section 17.11 [listed animals] and various notices in the *Federal Register* [FR] [proposed species]);
- Species that are candidates for possible future listing as threatened or endangered under the FESA (61 FR 40, February 28, 1996);
- Species listed or proposed for listing by the State of California as threatened or endangered under the California Endangered Species Act (CESA) (California Code of Regulations Title 14, Section 670.5);
- Plants listed as rare or endangered under the California Native Plant Protection Act (California Fish and Game Code [CFGC] Section 1900 et seq.);
- Species formally designated by California Department of Fish and Wildlife (CDFW) as California Species of Special Concern (SSC);[7]
- Animals fully protected under the CFGC (Sections 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]);[8]
- Species that meet the definitions of rare and endangered under CEQA. CEQA Section 15380 provides that a plant or animal species may be treated as "rare or endangered" even if not on one of the official lists (CEQA Guidelines Section 15380); and
- Plants considered by CDFW and the California Native Plant Society (CNPS) to be "rare, threatened or endangered in California" (California Rare Plant Rank 1A, 1B, and 2).

Special-status plant and wildlife species have been recorded within 3 miles are listed in **Appendix B** and shown in **Figures 5-1a** and **5-1b** (CDFW 2023; USFWS 2023; CNPS 2023). No special-status plants have potential to occur in the Project area due to its development and disturbance of natural conditions. Wildlife species with moderate or higher potential to occur are discussed below.

Alameda Song Sparrow

The Alameda song sparrow (*Melospiza melodia pusillula*) is a California state species of special concern. This subspecies is found on the south arm of San Francisco Bay east to El Cerrito, south to Alviso, and west to San Francisco where it nests and forages in tall grasses and marsh vegetation. It prefers tidally-influenced habitat, but is also found in diked marshlands and riparian habitat in tall grasses or shrubs (Shuford and Gardali 2008). Grassy vegetation surrounding the former oxidation ponds could provide nesting habitat for this species, which is moderately likely to occur.

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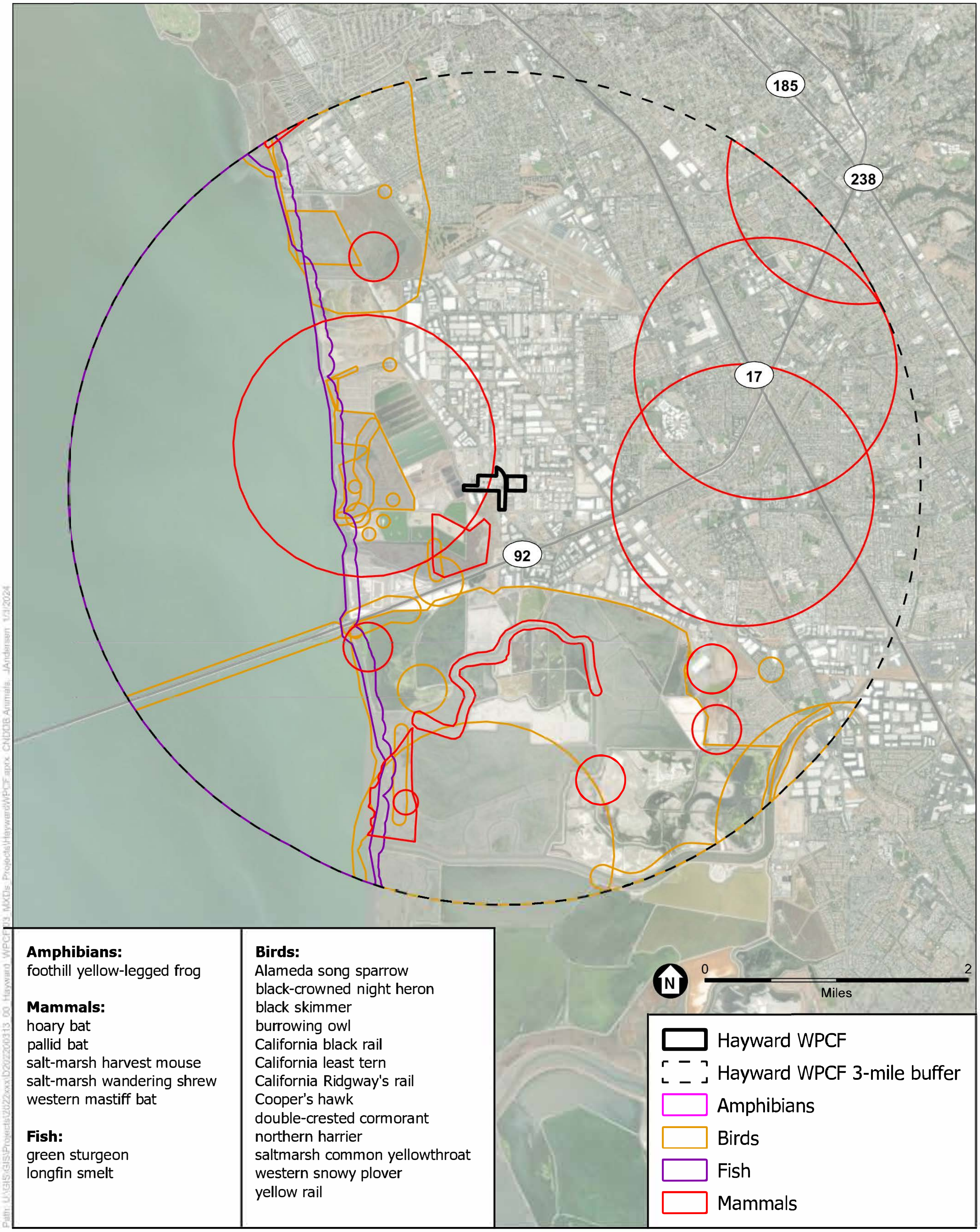
7 A California SSC is one that: has been extirpated from the state; meets the state definition of threatened or endangered but has not been formally listed; is undergoing or has experienced serious population declines or range restrictions that put it at risk of becoming threatened or endangered; and/or has naturally small populations susceptible to high risk from any factor that could lead to declines that would qualify it for threatened or endangered status.

8 The *fully protected* classification was California's initial effort in the 1960s to identify and provide additional protection to those animals that were rare or faced possible extinction. The designation can be found in the CFGC.



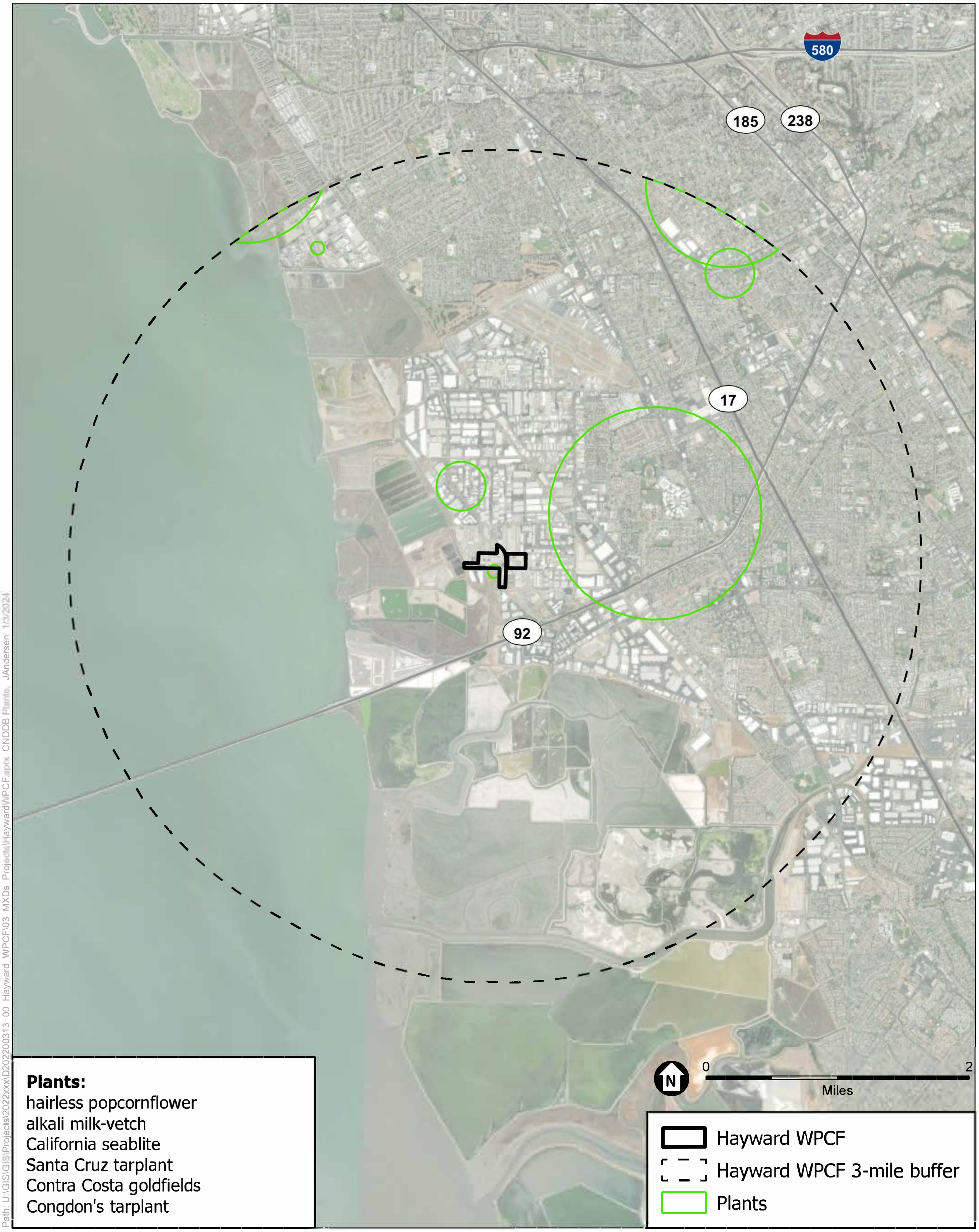
SOURCE: MAXAR 2021, CA DFW 2023, ESA, 2023

Hayward WPCF

Figure 5-1a

CNDDB 3-Mile Buffer
Special-Status Wildlife

ESA



SOURCE: MAXAR 2021, CA DFW 2023, ESA, 2023

Hayward WPCF

Figure 5-1b
3-Mile Buffer
Special-Status Plants

ESA

Salt Marsh Harvest Mouse

The salt marsh harvest mouse (*Reithrodontomys raviventris*), a federally endangered species, is similar to the more widespread western harvest mouse (*Reithrodontomys megalotis*), but specialized to the upper portions of tidal marshes. Salt marsh harvest mice may utilize terrestrial grassland habitats adjacent to tidal marsh for upland refugia at high tide. The species is typically associated with tall, dense, continuous stands of pickleweed, but may also be found in other upper marsh vegetation.

Salt marsh harvest mouse was recorded in Hayward marsh less than 0.5-mile south of the Project site in 1999 (CDFW 2023); the record is presumed extant, and it is not clear if more recent surveys have been conducted in Hayward. Small amounts of dried pickleweed are present near the oxidation ponds at the WPCF. Although the habitat is poor, salt marsh harvest mice have low to moderate potential to enter the oxidation pond area from nearby habitat west of the WPCF.

5.4.2 Regulatory Setting

5.4.2.1 Federal

Federal Endangered Species Act

The United States Congress passed the Federal Endangered Species Act (FESA) in 1973 to protect those species that are endangered or threatened with extinction. The FESA defines species as "endangered" and "threatened" and provides regulatory protection for any species thus designated. FESA Section 9 prohibits the "take" of species listed by the U.S. Fish and Wildlife Service (USFWS) as threatened or endangered. As defined in the FESA, *taking* means "… to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in such conduct." Recognizing that take cannot always be avoided, FESA Section 10(a) includes provisions for takings that are incidental to, but not the purpose of, otherwise lawful activities.

FESA Section 7(a)(2) requires all federal agencies, including USFWS, to evaluate projects authorized, funded, or carried out by federal agencies with respect to any species proposed for listing or already listed as endangered or threatened and the species' critical habitat, if any is proposed or designated. Federal agencies must undertake programs for the conservation of endangered and threatened species and are prohibited from authorizing, funding, or carrying out any action that would jeopardize a listed species or destroy or modify its "critical habitat."

As defined in the FESA, "individuals, organizations, states, local governments, and other non-federal entities are affected by the designation of critical habitat only if their actions occur on federal lands, require a federal permit, license, or other authorization, or involve federal funding." This law applies to any listed species with habitat in the vicinity of the Project area, such as salt marsh harvest mouse.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) is the domestic law that affirms and implements a commitment by the United States to four international conventions (with Canada, Mexico, Japan, and Russia) for the protection of a shared migratory bird resource. Unless and except as permitted by regulations, the MBTA makes it unlawful at any time, by any means, or in any manner to intentionally pursue, hunt, take, capture, or kill migratory birds anywhere in the United States. The law also applies to the intentional disturbance and removal of nests occupied by migratory birds or their eggs during the breeding season.

The MBTA, first enacted in 1916, prohibits any person, unless permitted by regulations, to "pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird, included in the terms of this Convention… for the protection of migratory birds…or any part, nest, or egg of any such bird" (16 U.S. Code 703). This law applies to all migratory bird species that may nest in the WPCF, such as Alameda song sparrow.

5.4.2.2 State

Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Water Quality Control Act, waters of the state fall under the jurisdiction of the appropriate Regional Water Quality Control Board (RWQCB). Under the act, the RWQCB must prepare and periodically update water quality control basin plans. Each basin plan sets forth water quality standards for surface water and groundwater, as well as actions to control nonpoint and point sources of pollution to achieve and maintain these standards. Projects that affect wetlands or waters must meet waste discharge requirements of the RWQCB, which may be issued in addition to a water quality certification or waiver under Section 401 of the Clean Water Act (CWA). The RWQCB requires projects to avoid impacts to wetlands if feasible and requires that projects do not result in a net loss of wetland acreage or a net loss of wetland function and values. The RWQCB typically requires compensatory mitigation for impacts to wetlands and/or waters of the state. The RWQCB also has jurisdiction over waters deemed 'isolated' or not subject to Section 404 jurisdiction under *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (SWANCC). Dredging, filling, or excavation of isolated waters constitutes a discharge of waste to waters of the state and prospective dischargers are required obtain authorization through an Order of Waste Discharge or waiver thereof from the RWQCB and comply with other requirements of Porter-Cologne Act.

The State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (State Wetland Procedures), as prepared by the State Water Resources Control Board (SWRCB), was implemented on May 28, 2020. The State Wetland Procedures include a definition for wetland waters of the state that include 1) all wetland waters of the U.S.; and 2) aquatic resources that meet both the soils and hydrology criteria for wetland waters of the U.S. but lack vegetation. The law applies to water effluent released from the WPCF in bay waters.

California Fish and Game Code

Sections 2070 and 2080 – California Endangered Species Act

Under the CESA, the CDFW is responsible for maintaining a list of threatened and endangered species (California Fish and Game Code sections 2070 and 2080), candidate species, and species of special concern. Pursuant to the requirements of CESA, an agency reviewing a project within its jurisdiction must determine whether any state-listed endangered or threatened species may be present on the project region and determine whether the project would have a potentially significant impact on such species. In addition, the CDFW encourages informal consultation on any project that may impact a candidate species. If there were project-related impacts to species on the CESA threatened and endangered list, they would be considered "significant." Impacts to "species of concern" would be considered "significant" under certain circumstances, discussed below. Section 2080 prohibits harm to threatened or endangered or threatened species, except as otherwise specified by code. This code applies to wildlife species that are listed by the state of California that could be impacted by the Project. (see Appendix B).

Section 3503 – Nesting Birds and Raptors

Section 3503 of the California Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 specifically states that it is unlawful to take, possess, or destroy any raptors (i.e., species in the orders Falconiformes and Strigiformes), including their nests or eggs. Typical violations of these codes include destruction of active nests resulting from removal of vegetation in which the nests are located. Violation of Section 3503.5 could also include failure of active raptor nests resulting from disturbance of nesting pairs by nearby project construction. This statute does not provide for the issuance of any type of incidental take permit. This code applies to nesting birds at the facility that could be impacted by the Project.

Sections 3511, 4700, 5050 and 5515 – Fully Protected Species

Protection of fully protected species is described in Sections 3511, 4700, 5050, and 5515 of the California Fish and Game Code. These statutes prohibit take or possession of fully protected species. CDFW is unable to authorize incidental take of fully protected species when activities are proposed in areas inhabited by those species. CDFW has informed nonfederal agencies and private parties that they must avoid take of any fully protected species in carrying out projects. This code applies to fully protected species that could be impacted by the Project (see Appendix B).

5.4.2.3 Local

City of Hayward 2040 General Plan

The City of Hayward 2040 General Plan includes the following related to biological resources:

City of Hayward 2040 Goals and Policies Relevant to Biological Resources	
Goal NR-1	Protect, enhance, and restore sensitive biological resources, native habitat, and vegetation communities that support wildlife species so they can be sustained and remain viable.
Policy NR-1.1	The City shall limit or avoid new development that encroaches into important native wildlife habitats; limits the range of listed or protected species; or creates barriers that cut off access to food, water, or shelter of listed or protected species.
Policy NR-1.2	The City shall protect sensitive biological resources, including State and Federally designated sensitive, rare, threatened, and endangered plant, fish, and wildlife species and their habitats from urban development and incompatible land uses.
Policy NR-1.3	The City shall require qualified biologists to identify, map, and make recommendations for avoiding all sensitive biological resources on the project site, including State and Federally sensitive, rare, threatened, and endangered plant, fish, and wildlife species and their habitats using methods and protocols in accordance with the U.S. Fish and Wildlife Service, California Department of Fish and Wildlife, and California Native Plant Society for all development applications proposed within sensitive biological resource areas.
Policy NR-1.4	The City shall coordinate with the Hayward Area Shoreline Planning Agency, Bay Conservation and Development Commission, and California Coastal Commission to conserve, protect, and enhance natural and cultural resources along the San Francisco Bay shoreline by balancing uses that support multiple community needs, such as recreation, tourism, cultural resource preservation, and natural resource protection.
Policy NR-1.6	The City shall support the efforts of the Hayward Area Shoreline Planning Agency and other agencies to preserve and protect tidal flats and salt ponds with low salinity for migratory waterfowl that depend on these areas.
Policy NR-1.7	The City shall protect and promote native plant species in natural areas as well as in public landscaping.

City of Hayward Tree Preservation Ordinance

The City of Hayward Tree Preservation Ordinance protects native and non-native trees of significant size and quality (protected trees) that contribute to the environment. Native trees over four inches diameter and all trees over eight inches in diameter, and all street trees require a permit for removal or cutting. The permit requires supervision of pruning by a certified arborist, and for removal, either replacement with one or more equivalent trees, or relocation of the protected tree. This ordinance applies to all tree removal associated with the Project.

5.4.3 Discussion

The following impact discussion concerns construction of the Project. During construction, impacts may occur to biological resources from vegetation removal, building demolition, vehicle or equipment traffic, or operation of construction equipment or movement of materials. Following construction, operation of the Project would be expected to have no impact on wildlife, plants or other biological resources compared to existing conditions.

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?* **Less than Significant with Mitigation.**

Records of special-status plant and wildlife species within the vicinity of the WPCF were reviewed and special-status plant and wildlife species' potential to occur in the regional Project area are included in Appendix B (CDFW 2023). No rare plants have potential to occur on the site, but one special-status bird has moderate potential to occur in the western end of the facility, Alameda song sparrow. In addition, special-status pallid bat, other roosting bats, and protected migratory birds have potential to occur.

Salt marsh harvest mouse prefers dense pickleweed habitat in marshland, which does not occur in the WPCF, but is present to the south in bay marshland, where the species was recorded in 1999 (CDFW 2023). Salt marsh harvest mice may enter the western side of the WPCF as far as the sludge drying beds through the chain-link fence, which does not present a barrier. To enable construction of the new BNR facilities simultaneously with the new PE EQ Facility,, the Project would utilize two existing winter sludge drying beds for temporary PE equalization storage. PE flow would be intercepted upstream of the existing PE EQ basin by temporary diesel-powered pumps. Additional temporary diesel-powered pumps would be installed at the winter sludge drying beds to return flow to the treatment process using the same pipeline. The temporary diesel-powered pumps would convey flow to and from the winter sludge drying beds through a temporary pipeline. The temporary pipeline would be constructed within the existing WPCF Boundaries east of the sludge drying beds aboveground, except at road crossing points and in the vicinity of the Russell City Energy Center gate, where it would be installed in a trench covered with trench plates or direct buried. The temporary pipeline installation is expected to occur over a period of approximately two weeks. The winter sludge drying beds are anticipated to be used during Project construction under wet weather conditions, up to three times a year each wet weather season. Each diversion would last approximately four hours to manage peak wet weather flow conditions.[9] Because the temporary pipeline would be constructed within existing paved areas outside of the sludge drying beds, and the Project would not include construction of permanent features at the western side of the WPCF, impacts to salt marsh harvest mouse would be less than significant, with no mitigation required.

Grassy vegetation at the perimeter of the former oxidation ponds on the western side of WPCF may provide nesting habitat for migratory birds, including the Alameda song sparrow. In addition, cliff swallows actively nest under the roof eaves of WPCF sheds and under the stairs at the East Trickling Filter. Potential bat roosting habitat was observed in a disused shed near the standby power generator, and may be present in other structures as well. Actively nesting birds are protected under the MBTA, and both nesting birds and roosting bats are protected by Fish and Game Code. Removal of bird nesting habitat or bat roosting habitat could injure or kill nesting birds or their eggs or young, or roosting bats. Noise, light and other disturbance near nests or roosts may also disturb these animals and result in abandonment of nests or habitat.

9 Assumes three engines operating for approximately four hours in a given day; with the potential need for up to four engines operating up to twelve hours in a given day.

Injury, nest loss or abandonment due to disturbance would constitute a significant impact to Alameda song sparrow or other migratory birds. The implementation of **Mitigation Measure BIO-1** will reduce potential impacts on nesting birds to a less-than significant level.

Mitigation Measure BIO-1: Nesting Birds

If construction or vegetation removal must begin during the nesting period (February 1 through August 31), a qualified biologist shall survey vegetation in the work area and within a buffer of 100 feet in order to verify the presence or absence of nests. The survey shall be conducted no more than 7 days prior to construction activities. If active nests are observed, buffer zones will be established around nest areas. Typical nest buffers are 100 feet for passerine birds, depending upon the nature of proposed activities and the sensitivity of the identified bird to disturbance, and 250 feet for raptors. If buffers are established, areas will be avoided during construction activities until young birds have fledged. Buffer sizes may be reduced from these initial minimum distances following review by a qualified biologist and coordination with CDFW.

Disturbance or harm to roosting bats would also constitute a significant impact. The implementation of **Mitigation Measure BIO-2** would reduce potential impacts on roosting bats to a less-than-significant level.

Mitigation Measure BIO-2: Bat Survey

Prior to Project construction that requires demolition of structures with potential to provide bat roosting habitat, a qualified bat biologist shall survey the structures at least 14 days prior to planned demolition.

If no indication of bat presence is found during the survey, construction may proceed normally. If bats or indicators of bat presence are found, a bat-safe removal technique shall be employed during demolition. On the first day, in the presence of a qualified bat biologist, the structure shall be altered by removing windows altering ventilation within the structure. The remainder of the structure will be left undisturbed overnight to allow bats to depart. On the second day, the structure may be demolished.

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?* **No Impact.**

No riparian or other sensitive natural communities are located within the Project area. The WPCF is located in a disturbed area and ground cover consists of pavement, gravel, bare ground and ruderal grassland. As a result, the Project would have no impact on sensitive natural communities.

c) *Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?* **No Impact.**

No jurisdictional wetlands are located within the Project site. The engineered holding ponds, drying beds and channels are designed to manage effluent and stormwater. No impacts would occur to State or federally protected wetlands.

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?* **Less than Significant Impact.**

The Project area is within the WPCF property line boundary, which is fenced. To the north, south and east are commercial and warehouse developments and roads that do not provide wildlife habitat. While wildlife may visit the holding ponds at the west of the WPCF which abut bay marshlands, the vegetation in this area is fragmentary, and does not provide corridor habitat or nursery sites for any species. No wildlife would be likely to move into the developed portion of the WPCF due to absence of habitat. Thus, Project activities will not obstruct or interfere with wildlife corridors or impede the use of wildlife nursery sites, and no impacts would occur.

e) *Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?* **Less than Significant with Mitigation.**

Project activities will be located in non-native annual grassland, gravel and bare ground areas of the WPCF. Three non-native ornamental trees located in the WPCF parking lot would be removed in order to construct the Project, two approximately 7.5 inches in diameter and one approximately 3 feet in diameter. An additional four trees would be removed for the PE EQ Facility and up to six trees along Enterprise Avenue would be removed for demolition of the WTF and construction of the grit facility. In Hayward, any tree over eight inches, or native tree over four inches diameter is subject to the City tree preservation ordinance, as a mandatory, non-discretionary requirement. If the trees to be removed are over these diameters, this would be considered a significant impact. The implementation of **Mitigation Measure BIO-3** will reduce potential impacts to a less-than significant level. By complying with these measures the Project would have no conflict with any local ordinance.

Mitigation Measure BIO-3: Tree Removal Permit.

The WPCF would be required to obtain the permit from the City and comply with all required conditions for the trees over eight inches in diameter, including replacement of protected trees with like-size, like-kind trees or an equal value tree or trees, as determined by the City's Landscape Architect. Replacement trees would be located on-site or in an agreed-upon off-site location.

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?* **No Impact**.

The Project site is not contained within an area subject to any adopted local, regional, or state habitat conservation plans. Therefore, the Project would not Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan and there would be no impact.

5.5 Cultural Resources

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
V. **CULTURAL RESOURCES —** Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☐	☒	☐

5.5.1 Environmental Setting

The WPCF is located near the east shore of San Francisco Bay, approximately 1.5 miles northeast of the San Mateo-Hayward Bridge. The underlying soil consists of Holocene-age Reyes and Willows clay basin deposits, estimated to have formed over the last 11,000-12,000 years (USDA 2023). The clay basin deposit consists of very fine silty clay to denser clay stratigraphy dispersed in the flat-floored basins at the distal edge of alluvial fans (Graymer and Helley 1997). The Project area is bordered to the west and south by a historically rich ecosystem that was once comprised of natural salt pans, tidal sloughs, mud flats, and marshlands. This environment provided abundant resources for the Native American Tribes and later settlers that occupied the region (Meyer 2017).

5.5.1.1 Ethnographic Setting

The Project is located on the ancestral lands of Chochenyo-speaking Ohlone near the ethnographically documented *Lisyan* village (Levy 1978). The Ohlone encountered Spanish explorers as early as the 17th century. Exposure to the Spanish increased during the mid-to-late 18th century when seven missions were constructed around the San Francisco Bay Area on Ohlone lands (Levy 1978). Following Mexico's secularization of the mission system in 1833, the Ohlone lands were distributed in vast grants to Mexican government officials, military personnel, and elites. These land grants, referred to as ranchos, were primarily utilized for livestock raising, processing, and gathering places (Bean and Rawls 1998). Those Ohlone who survived the mission and rancho periods sought sanctuary throughout the San Francisco Bay Area, forming communities where their cultural practices and beliefs continue today.

5.5.1.2 Historic-Era Setting

The Project area remained undeveloped until the Hayward WPCF was constructed in 1953 (USGS 1899, 1915, 1941, 1946, 1959). In the early 1950s, Hayward was among the last three cities in the San Francisco Bay Area (the other two being Millbrae and Sausalito) to comply with state regulations to cease pumping raw sewage directly into the bay and construct a municipal wastewater treatment facility (Melvin 2017). Starting in 1958, the WPCF was periodically redesigned and expanded to meet the needs of the City's growing population (Meyer 2017). Of the extant buildings and structures inventoried in 2017, 11 were built in the early 1950s, four were built in the early 1960s, three were built ca. 1970, four were built between 1972 and 1979, four were built in the early 1980s, one was built in the late 1990s, and approximately 25 were built since 2000 (Melvin 2017; City of Hayward 2024). As a result of this periodic redesign and expansion of the facilities, the Project area soils are highly disturbed and predominantly paved.

5.5.1.3 Research Methods and Results

Records Search

A records search was completed at the Northwest Information Center (NWIC) of the California Historical Resources Information System on December 12, 2023 (File No. 23-0820). Previous surveys, studies, and site records were accessed. The purpose of the records search was to (1) determine whether known cultural resources have been recorded within the Project vicinity; (2) assess the likelihood for unrecorded cultural resources to be present based on historical references and the distribution of nearby sites; and (3) develop a context for the identification and preliminary evaluation of cultural resources.

The NWIC records search indicated that one previously recorded cultural resource, the Eastshore-Grant Transmission Line, crosses over the Project area (NWIC 2023). However, it will not be impacted by the Project because it is above the vertical ceiling of the Project.

The Hayward WPCF was recorded and evaluated in 2017, and it is not on file at the NWIC (Melvin 2017). It was recorded as an individual architectural resource comprising 49 buildings and structures, and was found to be ineligible for listing in the California Register of Historical Resources (California Register) under any criteria. The report's author did not explicitly evaluate the Hayward WPCF for eligibility at the local level. None of the buildings or structures within the Hayward WPCF were previously evaluated as individual resources.

5.5.1.4 Architectural Resources Assessment

As noted above, the Hayward WPCF was previously evaluated in 2017. Per California Public Resources Code Section 5024.1(g)(4), "If [a] survey is five or more years old […], the survey is updated to identify historical resources which have become eligible or ineligible due to changed circumstances or further documentation and those which have been demolished or altered in a manner that substantially diminishes the significance of the resource." The 2017 evaluation is more than five years old in 2024; therefore, it has been updated pursuant to current professional standards for eligibility for listing in the California Register. According to the City of Hayward's Historic Preservation Ordinance, the City applies California Register criteria to determine eligibility for local designation (Section 10-11.030). Additionally, since 2017, four buildings and structures within the Hayward WPCF have reached the 45-year age threshold for consideration as potential historical resources for the purposes of the California Environmental Quality Act (CEQA) (i.e., those constructed between 1972 and 1979). The four age-eligible buildings and structures (i.e., Building 20, Structure 23, Building 27, and Building 28) were evaluated as potential historical resources (refer to Appendix C).

5.5.1.5 Updated Evaluation of the Hayward WPCF

The updated evaluation concurs with the previous finding that the Hayward WPCF does not possess significance under any California Register criteria. The Project area was surveyed in early January 2024, the 2017 evaluation was carefully reviewed, and a limited supplemental research was conducted to confirm construction dates and certain key data, and it was concluded that the historic context was thorough and the evaluation was well supported. Data provided by the City in January 2024 included corrected construction dates for many of the buildings and structures and identified several others that were omitted from the 2017 evaluation (City of Hayward 2024). This superseding data is reflected in the updated evaluation, and it does not change the conclusion that the Hayward WPCF does not appear to be individually eligible for listing in the California Register or the City's register of designated historical resources under any criteria.

The Hayward WPCF is located more than 2.5 miles from any historic district listed in or eligible for listing in the California Register or the City's register of designated historical resources. As such, it would not contribute to any known historic district. Additionally, no known discontiguous historic district has been identified to which the Hayward WPCF could potentially contribute. Furthermore, no apparent patterns emerge to suggest that there is a potential district or districts that include all or some of the buildings and structures that have reached the 45-year age threshold (i.e., those constructed in or before 1979) located within the Hayward WPCF. No two or more of these buildings and/or structures appear to meet the National Park Service's definition of a district, that is "a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development" (National Park Service 1997: 5). As such, none of the age-eligible buildings or structures located within the Hayward WPCF contribute to a potential historic district.

5.5.1.6 Evaluations of Four Age-eligible Buildings and Structures

Four buildings and structures within the Hayward WPCF currently meet (in 2024) the 45-year age threshold for consideration as potential historical resources. These are Building 20 (air compressor building), Structure 23 (digester no. 1), Building 27 (maintenance and electrical shop), and Building 28 (mixing and heating building). According to the 2017 evaluation and superseding data received from the City in January 2024, these four architectural resources were constructed between 1972 and 1979 (i.e., the period of time during which additional buildings and structures have reached 45 years of age since 2017).

The four architectural resources support the overall process of wastewater treatment. No records identified in the 2017 evaluation or subsequently indicate that any of the four architectural resources are the location of an important event; are directly associated with an important person; are significant examples of an architectural style, construction method, or work of a master design professional or possess high artistic values; or have the potential to provide important information related to materials or construction types. Additionally, no apparent patterns emerge to suggest that there is a potential district or districts within the Hayward WPCF that include one or more of the four age-eligible architectural resources. Furthermore, there is no indication that any of the age-eligible architectural resources within the Hayward WPCF (i.e., those constructed between

1953 and 1979) would contribute to a potentially discontiguous historic district within the Hayward WPCF.

5.5.1.7 Summary of Findings

Neither the Hayward WPCF nor any of the four architectural resources within it that have become age-eligible since 2017 are recommended individually eligible for listing in the California Register or the City's register of designated historical resources under any criteria. Additionally, neither the Hayward WPCF nor any of the age-eligible buildings or structures within it contribute to a known or potential historic district eligible for listing in the California Register or the City's register of designated historical resources. Therefore, the Hayward WPCF, Building 20, Structure 23, Building 27, and Building 28 are not considered to be historical resources for the purposes of CEQA.

5.5.1.8 Archaeological Sensitivity Assessment

This analysis uses the term 'potential' to assess the possibility of cultural resources to be present and 'sensitivity' to assess the likelihood that any possible cultural resources are significant under the California Register and would qualify as a historical resource.

As part of an archaeological sensitivity analysis, site records, historical maps, aerial photography, soil maps, and previous studies were reviewed. The historical maps and aerial imagery show that no historic-era buildings and features that could represent buried historic-era archaeological resources, such as artifact-filled wells or privies, were present within the Project area (NWIC 2023; USGS 1899, 1915, 1947, 1959; NETR 2023). Therefore, the potential for historic-era archaeological resources to be present in the Project site is low.

Based on the Holocene age of the soils and the Project's location along the shoreline of San Francisco Bay, there is the potential for buried pre-contact archaeological deposits in undisturbed portions of the Project area. However, the Project area has incurred decades of extensive soil disturbance caused by the construction, maintenance, and expansion of the WPCF. Additionally, no pre-contact or indigenous resources have been previously identified within 0.5 miles of the Project area (NWIC 2023). Therefore, the potential for intact pre-contact archaeological resources to be present in the Project site is low.

In summary, due to the extensive disturbance and the lack of known pre-contact and historic-era archaeological resources, the Project's pre-contact and historic-era archaeological resources sensitivity is low.

5.5.2 Regulatory Setting

5.5.2.1 State

National Register of Historic Places

The National Historic Preservation Act (NHPA) of 1966, as amended (U.S. Code Title 54, Section 306108), and its implementing regulations established the National Register as a comprehensive inventory of known historic properties throughout the United States. The National Register is administered by the National Park Service under the direction of the Secretary of the

Interior. It includes buildings, structures, sites, objects, and districts that possess historic, architectural, archaeological, engineering, or cultural significance. A cultural resource is considered a historic property under the NHPA if it meets the criteria for listing in the National Register at Code of Federal Regulations Title 36, Section 60.4 (36 CFR 60.4). Cultural resources that have been determined or recommended eligible to the National Register are also considered historical properties under the California Register. Impacts to historical resources must be analyzed under CEQA.

California Register of Historical Resources

The California Register is "an authoritative listing and guide to be used by state and local agencies, private groups, and citizens in identifying the existing historical resources of the state and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC Section 5024.1(a)). Certain resources are determined by law to be automatically included in the California Register, including historic properties formally determined eligible for, or listed in, the National Register. Cultural resources within the Project site must be evaluated for eligibility to the California Register to determine if there are historical resources that may be impacted by the Project.

Additionally, "If [a] survey is five or more years old […], the survey is updated to identify historical resources which have become eligible or ineligible due to changed circumstances or further documentation and those which have been demolished or altered in a manner that substantially diminishes the significance of the resource" (PRC Section 5024.1[g][4]).

Native American Heritage Commission

The Native American Heritage Commission (NAHC) was created by statute in 1976. It is a nine-member body appointed by the governor to identify and catalog cultural resources (i.e., places of special religious or social significance to Native Americans, and known graves and cemeteries of Native Americans on private lands) in California. The NAHC is responsible for preserving and ensuring accessibility of sacred sites and burials, ensuring the disposition of Native American human remains and burial items, maintaining an inventory of Native American sacred sites located on public lands, and reviewing current administrative and statutory protections related to these sacred sites. The NAHC is involved in the event that Native American human remains are identified during Project construction or operation.

California Public Resources Code Sections 5097.98 and 5097.99

PRC Section 5097.98 (reiterated in CEQA Guidelines Section 15064.5(e)) identifies steps to follow in the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery. PRC Section 5097.99 prohibits obtaining or possessing any Native American artifacts or human remains that are taken from a Native American grave or cairn (stone burial mound). If Native American human remains are identified during Project construction or operation, this regulation would apply.

California Health and Safety Code Section 7050.5

California Health and Safety Code Section 7050.5 protects human remains by prohibiting the disinterment, disturbance, or removal of human remains from any location other than a dedicated cemetery. If human remains are identified during Project construction or operation, this regulation would apply.

5.5.2.2 Local

City of Hayward Historical Preservation Ordinance Article 11

The City of Hayward's 2040 General Plan outlines the city's mission to preserve Hayward's historic districts and resources so as to maintain a unique sense of place and to promote an understanding of regional and community history (City of Hayward 2014). This is carried out through various policies, building codes, ordinances, and resident incentives. In particular, the City of Hayward has created Historical Preservation Ordinance Article 11 (City of Hayward 2023). The purpose of this Article is to promote the public health, safety, and general welfare of the inhabitants of the City by providing for the identification, protection, enhancement, perpetuation and use of historical resources, including buildings, structures, signs, objects, features, sites, historic and prehistoric archaeological sites, places, districts, designed landscapes, cultural landscapes and areas within the City that reflect special elements of the City's architectural, artistic, cultural, engineering, aesthetic, historical, political, social and other heritage. The following sections are pertinent to the Project:

- SEC. 10-11.040 Identification of Historical Resources - may require that applicants for development projects and building permits retain qualified historic consultants to prepare evaluations to be used by the City to determine whether a property or site is a historical resource or a potentially significant historical resource, as part of development review and/or environmental review processes. The City may require a peer review of any evaluation report submitted directly by an applicant. Reconnaissance surveys and evaluations shall use the adopted Hayward Historic Context Statement to understand whether and why the property has historical significance. The City of Hayward shall maintain a comprehensive record of reconnaissance surveys, evaluations, and historical reports completed for properties located within the City limits.
- SEC. 10-11.080 Historical Resources Designation Criteria - For the purposes of this Article, an object, building, structure, site, area, district, unique archaeological resource, place, record, or manuscript may be classified a designated historical resource and placed on the local register by the Planning Commission pursuant to Section 10-11.090, if the resource is determined through survey and documentation to be an "Historical Resource" as defined in this Article. Pursuant to Section 10-11.030, the City of Hayward applies California Register criteria to determine eligibility for local designation.

5.5.3 Discussion

a) *Would the Project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?* **No Impact**.

Construction and Operation

As presented in the Architectural Resources Assessment above, the Hayward WPCF's age-eligible buildings and structures, including, Building 20, Structure 23, Building 27, and Building 28, do not qualify as individual historical resources for the purposes of CEQA. Additionally, neither the Hayward WPCF nor any of the age-eligible buildings or structures within it contribute to a known or potential historic district that qualifies as a historical resource. Therefore, there are no historical resources within the Project area, and the Project would result in no impacts to historical resources.

b) *Would the Project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?* **Less than Significant with Mitigation Incorporated**.

Construction and Operation

This section discusses archaeological resources, both as historical resources according to CEQA Guidelines Section 15064.5, as well as unique archaeological resources, as defined in California Public Resources (PRC) (CEQA) Section 21083.2(g). A significant impact would occur if the Project would cause a substantial adverse change to an archaeological resource through physical demolition, destruction, relocation, or alteration of the resource.

Based on the records search results, background research, and archaeological sensitivity analysis the potential for the Project to impact archaeological resources is low. While unlikely, there is the potential for the discovery of subsurface archaeological resources during Project construction-related ground-disturbing activities. Accordingly, the Project shall implement **Mitigation Measure CUL-1, Cultural Resources Awareness Training**, in addition to the City's Historic Preservation Ordinance, to determine, mitigate, and reduce any potentially significant impacts. If any previously unrecorded archaeological resources are identified during project ground-disturbing activities and were found to qualify as a historical resource per CEQA Guidelines Section 15064.5 or a unique archaeological resource, as defined in PRC (CEQA) Section 21083.2(g), any impacts to the resource resulting from the project could be potentially significant. Any such potential significant impacts would be reduced to a less than significant level with the implementation of Mitigation Measure CUL-1 and the City's Historic Preservation Ordinance above.

Furthermore, regular operation and maintenance of the Project would cause no impact to archaeological resources because no ground disturbance would occur at depths greater than those reached during construction.

Mitigation Measure CUL-1: Cultural Resources Awareness Training.

Before any ground-disturbing and/or construction activities, an archaeologist meeting or under the supervision of an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards (SOI PQS) for Archeology shall conduct a training program for all construction and field personnel involved in project-related ground disturbance prior to such personnel conducting any on-site activities. If a Native American tribe has expressed interest in the project via AB-52 or Section 106-related tribal consultation, they shall be invited to participate in the training program. The training shall outline the general archaeological sensitivity of the area and the procedures to follow if an archaeological resource and/or human remains are inadvertently discovered during project-related activities.

c) *Would the Project disturb any human remains, including those interred outside of formal cemeteries?* **Less than Significant Impact.**

Construction and Operation

The records search and background research determined that no human remains are known to exist within the Project area. Therefore, the Project does not anticipate impacting human remains, including those interred outside of formal cemeteries.

In the unlikely event that Project construction-related ground-disturbing activities identify undiscovered human remains, the City of Hayward will comply with Government Code Section 27460 et seq., which requires ground-disturbing activities to halt until the County Coroner can determine whether the remains are subject to the provisions of Section 27491 of the Government Code or any other related provisions of law concerning the investigation of the circumstances, manner, and cause of death; and the required recommendations concerning the treatment and disposition of the human remains have been made. Pursuant to California Health and Safety Code Section 7050.5, the coroner shall make a determination within 48 hours of notification of the discovery of the human remains. If the coroner determines that the remains are not subject to their authority and recognizes or has reason to believe that they are those of a Native American, the coroner shall contact the Native American Heritage Commission within 24 hours. With compliance with existing regulations, the potential impact related to the accidental discovery of human remains would be less than significant.

Operation and maintenance of the Project would cause no impact to human remains because no ground disturbance would occur at depths greater than those reached during construction.

5.6 Energy

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
VI.	**ENERGY —** Would the project:				
a)	Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b)	Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

5.6.1 Environmental Setting

The Pacific Gas & Electric Company (PG&E) is the electricity provider for the Project site. There is an existing power distribution network within the WPCF that supplies power to all the plant facilities. The current Operations Building is supplied with power from a motor control center in the existing 12 kV Building.

The WPCF generates renewable energy from biogas produced in the treatment process using a cogeneration engine and an array of solar photovoltaic panels. The renewable energy is used to operate the WPCF and offset fossil fuel uses in other City facilities.

5.6.2 Regulatory Framework

5.6.2.1 Federal

Energy Policy Acts

The Energy Policy and Conservation Act was enacted by the Unites States Congress in 1975. This act first established the Corporate Average Fuel Economy (CAFE) standards for on-road vehicles in order to improve the overall fuel efficiency of new motor vehicles (USDOE, n.d.). The Energy Policy Act of 2005 contains many elements for encouraging and increasing the use of renewable energy sources (IEA 2021).

5.6.2.2 State

California Building Codes

The California Building Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations [CCR] Title 24, Part 6) were adopted to ensure that building construction and system design and installation achieve energy efficiency and preserve outdoor and indoor environmental quality. The current California Building Energy Efficiency Standards (Title 24 standards) are the 2019 Title 24 standards, which became effective on January 1, 2020. These standards include requirements for solar photovoltaic systems in all new homes, requirements for newly constructed healthcare facilities that were previously not included, the encouragement of demand response and LED technology for both residential and nonresidential buildings, and the use of more efficient air filters to trap hazardous particulates (CEC 2018).

The current (2019) version of the California Green Building Standards Code (CCR Title 24, Part 11) is commonly referred to as the CALGreen Code. The 2019 CALGreen Code includes mandatory measures for non-residential development related to site development, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and environmental quality (California Buildings Standards Commission 2019). The 2019 Energy Code includes provisions for smart residential photovoltaic systems, updated thermal envelope standards (preventing heat transfer from the interior to exterior and vice versa), residential and nonresidential ventilation requirements, and nonresidential lighting requirements. The 2019 Energy Code aims to reduce energy use in new homes by requiring that all new homes include individual or community solar photovoltaic systems or community shared battery storage systems that achieve equivalent time-dependent value energy use reduction.

On August 11, 2021, the CEC adopted the 2022 Energy Code. In December, it was approved by the California Building Standards Commission for inclusion into the California Building Standards Code. The 2022 Energy Code encourages efficient electric heat pumps, establishes electric-ready requirements for new homes, expands solar photovoltaic and battery storage standards, strengthens ventilation standards, and more. Buildings whose permit applications are applied for or after January 1, 2023, must comply with the 2022 Energy Code.

California Diesel Engine Idling Control Measures

CCR Title 13, Section 2485 requires that diesel-fueled commercial motor vehicles with gross vehicle weight ratings greater than 10,000 pounds not idle the vehicle's primary diesel engine longer than five minutes at any location. While this regulation is an airborne toxic control measure, limiting the idling time not only minimizes air emissions but also minimizes the use of fuel. Similarly, CCR Title 13, Section 2449 is a criteria air pollutant control measure that applies to any diesel-fueled off-road engine 25 horsepower or larger that also imposes an idling duration limit of five minutes. Construction vehicles and equipment that use these types of diesel engines must comply with these requirements.

5.6.2.3 Local

City of Hayward 2040 General Plan Policies

Applicable policies from the General Plan to the Project are listed below.

City of Hayward 2040 Policies Relevant to Energy

LU-1.8	Green Building and Landscaping Requirements: maintain and implement green building and landscaping requirements for private- and public-sector development.
NR-4.3	Efficient Construction and Development Practices: encourage construction and building development practices that maximize the use of renewable energy.
NR-4.6	Renewable Energy: the City shall encourage and support the generation, transmission, use, and storage of locally-distributed renewable energy in order to promote energy independence, efficiency, and sustainability.
NR-4.10	Public Renewal Energy Generation: the City shall ensure that all new City-owned facilities are built with renewable energy, as appropriate to their functions, and shall install renewable energy systems at existing City facilities where feasible.

City of Hayward 2040 Policies Relevant to Energy	
NR-4.11	Green Building Standards: the City shall require newly constructed or renovated public and private buildings and structures to meet energy efficiency design and operations standards.
PFS-4.12	Renewal Energy: the City shall support efforts to develop, enhance, and maintain clean, green and renewable energy systems at the Water Pollution Control Facility.

5.6.3 Discussion

Consistent with Public Resources Code Section 21100(b)(3), this impact analysis evaluates the potential for construction, operation, and maintenance of the Project to result in a substantial increase in energy demand and wasteful use of energy. The impact analysis is informed by Appendix G of the State CEQA Guidelines. The potential impacts are analyzed based on an evaluation of whether construction energy use estimates for the Project would be considered excessive, wasteful, or inefficient.

a) *Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?* **Less-than-Significant Impact.**

Construction

During construction of the Project, fuel consumption would result from the use of construction tools and equipment, truck trips to haul material, and construction workers' commutes to and from the proposed Project site. Construction of the Project would occur over a period of 4 years.

Construction activities and corresponding fuel energy consumption would be temporary and localized, as the use of diesel fuel and heavy-duty equipment would not be a long-term condition of the Project. In addition, the Project has no unusual characteristics that would require using construction equipment or haul vehicles that would be less energy efficient than equipment and vehicles used at similar construction sites elsewhere in California. Energy use requirements in the form of diesel fuel consumed by on-site off-road construction equipment, and gasoline consumed by worker and vendor trips, have been estimated based on the GHG emissions estimates from the CalEEMod modeling conducted for the Air Quality and GHG analysis (Appendix A). It is estimated that over the entire construction period of the Project, off-road equipment and on-road vehicles would consume approximately 75,000 gallons of diesel. On-road vehicles used for worker commutes and vendor trips would consume approximately 3,200 gallons of gasoline. Based on the 2022 California Annual Retail Fuel Outlet Report Results by the California Energy Commission, there were 90 million gallons of diesel and 473 million gallons of gasoline sold in Alameda County in 2022 (CEC 2023). The total Project volumes represent 0.084 and 0.001 percent of the 2022 sales of diesel and gasoline for Alameda County, respectively. In conclusion, construction-related fuel consumption by the Project would not result in inefficient, wasteful, or unnecessary energy use compared with other construction sites in the region. This impact would be less than significant.

Operation

The Project would also result in long-term fuel use from additional employee trips per month for staffing the WPCF with additional workers expected to be employed during construction of the Preliminary and Secondary Treatment Improvements, along with two additional bi-weekly delivery truck. Operational energy use associated with vehicle trips would not represent a significant regional net increase in fuel use, as the number of trips would be minimal. Furthermore, fuels used for vehicle trips resulting from the Project would be required to comply with the Corporate Average Fuel Economy (CAFE) standards, which would result in more efficient use of transportation fuels (lower consumption). The estimated annual electricity consumption for the new Administration Building would be approximately 386,000 kWh. The sustainability goals for the new Administration Building are to achieve a Leadership in Energy and Environmental Design (LEED) Silver rating in accordance with standards established by the United States Green Building Council and a zero net energy use in accordance with City policy. The new PE EQ facility would require approximately 2,500 kilowatt-hours (kWh) per year for operation as the facility would only be used periodically, primarily during peak wet weather events or during maintenance activities. The Preliminary and Secondary Treatment Improvements would increase power usage at the WPCF by approximately 5.3 million kWh per year for operations. No new power feeds from PG&E are proposed as part of the Project. However, some of this increase would replace current electricity use at the existing facilities. New Project buildings would be more energy efficient than existing ones at the Project site as they would be required to comply with updated and more stringent energy efficiency Title 24 and CALGreen standards. All electricity needed to operate the Project components would be sourced from PG&E using existing infrastructure and no new distribution power line would be required for the Project. Following completion of the Project, power will be supplied from the Primary Substation Building. In addition, new solar photovoltaic power generation equipment would be installed on a canopy over the parking lot west of the new Administration Building to serve a portion of the power demand using renewable. The Project includes replacement and upgrades at an existing facility and the increase in long-term energy demand would be required to satisfy the Project.

Operation of the Project would not result in wasteful, inefficient, or unnecessary consumption of energy resources. Therefore, impacts would be less than significant.

b) *Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?* **Less-than-Significant Impact.**

Construction

As discussed above, Project construction would require the use of off-road construction equipment and on-road trucks. Construction activities would comply with state and local requirements designed to minimize idling and associated emissions, which would also minimize the use of fuel. Specifically, pursuant to 13 California Code of Regulations (CCR) Sections 2485 and 2449, idling of commercial vehicles over 10,000 pounds and off-road equipment over 25 horsepower would be limited to a maximum of five minutes. Fuel use for Project construction would be consistent with typical construction and manufacturing practices, and energy standards such as the Energy Policy Acts of 1975 and 2005, which promote strategic planning and building standards that reduce consumption of fossil fuels, increase use of renewable resources, and enhance energy efficiency. Therefore, construction of the Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency and impacts would be less than significant.

Operation

Operation of the WPCF is expected to accommodate up to twelve new workers. The new Administration Building is expected to achieve a LEED Silver rating in accordance with the standards established by the United States Green Building Council and a zero net energy use in accordance with City policy when accounting for the solar photovoltaic power generation already in place. Interior and exterior lighting and building mechanical systems would be designed to meet the requirements of California Energy Code Title 24, City policies, and LEED certification. Electric Vehicle charging stations would be provided in accordance with City policies. In addition, new solar photovoltaic power generation equipment would be installed on a canopy over the parking lot west of the new Administration Building.

The PE EQ facility and Preliminary and Secondary Treatment Improvements would be completed in accordance with California’s CALGreen code, and lighting fixtures would be designed with energy-efficient LED fixtures.

The Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency or impede progress toward achieving any goals and targets. This impact would be less than significant.

5.7 Geology and Soils

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
VII. GEOLOGY AND SOILS — Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒

5.7.1 Environmental Setting

This section was prepared, in part, by relying on the information included in the Geotechnical Exploration report (ENGEO 2023). The Geotechnical Exploration report indicates that, from a geotechnical standpoint, the Project site is suitable for development. The geotechnical exploration identified potential hazards associated with strong seismic ground shaking, liquefaction, and expansive soils at the Project site, and provided recommendations for mitigating those hazards.

The Project site is in Hayward, California, which is within the geologically complex California Coast Ranges geomorphic province.[10] The Coast Ranges province is characterized by a series of northwest-trending ridges and valleys that run roughly parallel to the San Andreas Fault Zone and can be further divided into the northern and southern ranges that are separated by the San

[10] California's geomorphic provinces are naturally defined geologic regions that display a distinct landscape or landforms with unique, defining features based on geology, faults, topographic relief, and climate.

Francisco Bay. The San Francisco Bay lies within a broad depression created from an east-west expansion between the San Andreas and Hayward fault systems (CGS 2024). The Project site lies on the flat eastern margins of the Bay. Based on geologic mapping by California Geological Survey (CGS 1991), the Project site is located on Holocene-age Bay Mud at the surface. Bay Mud is composed mostly of fat clays, which can be expansive soils if subjected to wetting and drying cycles.

5.7.1.1 Fault Rupture

The California Earthquake Hazards Zone Application (EQ Zapp) is an interactive map on the California Geological Survey (CGS) website. The EQ Zapp allows users to view all available earthquake hazard zone data, including all established Earthquake Fault Zones (EFZs), liquefaction, and earthquake-induced landslide zones. Under the Alquist-Priolo Earthquake Fault Zoning Act, Holocene-active faults are designated EFZs because they have displayed surface rupture in the last 11,700 years (CGS 2018).

There are no known Holocene-active[11] faults or pre-Holocene[12] faults within the Project site (CGS 2010). However, multiple fault systems are present outside of the Project site in the region. The Project site is not within an EFZ as delineated on an EFZ Map. The nearest EFZ is the Hayward fault section of the Hayward Fault zone, approximately 3.6 miles east of the Project site (CGS 2024). The Calaveras fault zone, further to the south, is also a possible source of significant ground shaking at the Project site.

5.7.1.2 Ground Shaking

The Project area lies within a region of California that contains many active and potentially active faults and is considered an area of high seismic activity. In 2015, the 2014 Working Group on California Earthquake Probabilities presented the third Uniform California Earthquake Rupture Forecast (UCERF3). According to this report, there is a 62 percent probability of a magnitude (M_W) 6.7 earthquake in the San Francisco Bay Area and a 98 percent probability of a M_W 6.7 or greater earthquake in the Northern California Region by the year 2045 (Field et al. 2015).

The ShakeMap that corresponds with the earthquake planning scenario generated by the United States Geological Survey (USGS) states that if a M_W 6.8 event were to occur on the Southern Hayward section of the Hayward fault zone, the study area may experience very strong to severe ground shaking with moderate to heavy damage expected (USGS 2013).

5.7.1.3 Liquefaction and Lateral Spreading

Liquefaction is a phenomenon in which unconsolidated, water saturated sediments become unstable due to the effects of strong seismic shaking. During an earthquake, these sediments can behave like a liquid, potentially causing severe damage to overlying structures. Lateral spreading is a variety of minor landslide that occurs when unconsolidated liquefiable material breaks and spreads due to the effects of gravity, usually down gentle slopes. Liquefaction-induced lateral

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11 Holocene-active faults show evidence of displacement within the Holocene Epoch, or the last 11,700 years which are considered active (CGS 2008).

12 Pre-Holocene faults have not shown evidence of displacement in the last 11,700 years (CGS 2008).

spreading is defined as the finite, lateral displacement of gently sloping ground as a result of pore-pressure buildup or liquefaction in a shallow underlying deposit during an earthquake. The occurrence of this phenomenon is dependent on many complex factors, including the intensity and duration of ground shaking, particle-size distribution, and density of the soil.

The potential damaging effects of liquefaction include differential settlement, loss of ground support for foundations, ground cracking, heaving, and cracking of structure slabs due to sand boiling, and buckling of deep foundations due to ground settlement. Dynamic settlement (i.e., pronounced consolidation and settlement from seismic shaking) may also occur in loose, dry sands above the water table, resulting in settlement of and possible damage to overlying structures. In general, a relatively high potential for liquefaction exists in loose, sandy soils that are within 50 feet of the ground surface and are saturated (below the groundwater table). Lateral spreading can move blocks of soil, placing strain on buried pipelines that can lead to leaks or pipe failure.

According to the EQ Zapp, the Project site is entirely within an established liquefaction and lateral spreading zone (CGS 2024). The borings drilled for the installation of the Administration Building encountered 4 to 6 feet of non-engineered fill, underlain by clay with varying amounts of sand or sand layers (ENGEO 2023). The geotechnical report stated such non-engineered fill is unsuitable for supporting the foundations or structures.

5.7.1.4 Expansive Soils

Expansive soils are soils that possess a “shrink-swell” characteristic, also referred to as linear extensibility. Shrink-swell is the cyclic change in volume (expansion and contraction) that occurs in fine-grained clay sediments from the process of wetting and drying; the volume change is reported as a percent change for the whole soil. Changes in soil moisture can result from rainfall, landscape irrigation, utility leakage, roof drainage, and/or perched groundwater. This cyclical change in soil volume is measured using the coefficient of linear extensibility (COLE). The Natural Resources Conservation Service (NRCS) relies on linear extensibility measurements to determine the shrink-swell potential of soils. If the linear extensibility percent is more than 3 percent (COLE = 0.03), shrinking and swelling may cause damage to buildings, roads, and other structures. Structural damage may occur incrementally over a long period of time, usually as a result of inadequate soil and foundation engineering or the placement of structures directly on expansive soils. The NRCS Web Soil Survey website cites the COLE as 4.8 percent (0.048), which rates as a moderate expansion potential (NRCS 2023). The geotechnical investigation conducted tests for expansive soils; the results indicated a moderate to high shrink-swell potential (ENGEO 2023).

5.7.1.5 Landslides

Landslides are one of the various types of downslope movements in which rock, soil, and other debris are displaced due to the effects of gravity. The potential for material to detach and move down slope depends on multiple factors including the type of material, water content, and steepness of terrain. Generally, earthquake-induced landslides occur within deposits of a moderate to high landslide potential when ground shaking triggers slope failures during or as a result of a nearby earthquake. The Project site vicinity has a very low landslide potential due to the relatively flat topography and lack of slopes and hills.

5.7.1.6 Paleontological Resources

Paleontological resources are the mineralized (fossilized) remains of prehistoric plants and animals, including body fossils, such as bones, bark or wood, and shell, as well as trace fossils, such as shell, leaf, skin, or feather impressions, footprints, burrows, or other evidence of an organism's life or activity. These resources are located within sedimentary rocks or alluvium and are considered to be nonrenewable.

In its "Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources," the Society of Vertebrate Paleontology (SVP) defines four categories of paleontological potential for rock units: high, low, undetermined, and no potential: High Potential, rock units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered are considered to have a high potential for containing additional significant paleontological resources; Low Potential, rock units that are poorly represented by fossil specimens in institutional collections, or based on general scientific consensus only preserve fossils in rare circumstances and the presence of fossils is the exception not the rule; Undetermined Potential, rock units for which little information is available concerning their paleontological content, geologic age, and depositional environment; and No Potential, rock units like high-grade metamorphic rocks and igneous rocks that will not preserve fossil resources (SVP 2010).

The surficial geology within the Project site is composed entirely of artificial fill underlain by Holocene-age Bay Mud. Due to the artificial nature of the fill and the recent age of the fill and Bay Mud underling the Project site, it has no potential to contain significant paleontological resources. As discussed, in general, Holocene-age deposits are considered to have a low potential to contain significant paleontological resources, based on the relatively recent age of the deposits (SVP 2010); the youngest Holocene-age deposits (i.e., younger than 5,000 radiocarbon years) have a particularly low potential.

5.7.2 Regulatory Framework

5.7.2.1 Federal

Clean Water Act

The federal Clean Water Act (CWA) and subsequent amendments, under the enforcement authority of the U.S. Environmental Protection Agency (USEPA), was enacted "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." The purpose of the CWA is to protect and maintain the quality and integrity of the nation's waters by requiring states to develop and implement state water plans and policies. The CWA gave the USEPA the authority to implement pollution control programs such as setting wastewater standards for industry. In California, implementation and enforcement of the National Pollutant Discharge Elimination System (NPDES) program is conducted through the California State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCBs). The CWA also sets water quality standards for surface waters and established the

NPDES program to protect water quality through various sections of the CWA, including Sections 401 through 404 and 303(d) that are implemented and regulated by the SWRCB and the nine RWQCBs. Section 402 of the CWA would apply to the Project because construction at the Project site would be required to control discharges of pollutants from point sources.

5.7.2.2 State

California Building Code

The California Building Code (CBC), which is codified in Title 24 of the California Code of Regulations, Part 2, was promulgated to safeguard the public health, safety, and general welfare by establishing minimum standards related to structural strength, means of egress to facilities (entering and exiting), and general stability of buildings. The purpose of the CBC is to regulate and control the design, construction, quality of materials, use/occupancy, location, and maintenance of all buildings and structures within its jurisdiction. Title 24 is administered by the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. Under state law, all building standards must be centralized in Title 24 or they are not enforceable. The provisions of the CBC apply to the construction, alteration, movement, replacement, location, and demolition of every building or structure, or any appurtenances connected or attached to such buildings or structures throughout California.

The 2022 edition of the CBC is based on the 2021 International Building Code (IBC) published by the International Code Council, which replaced the Uniform Building Code (UBC). The code is updated triennially, and the 2022 edition of the CBC was published by the California Building Standards Commission on July 1, 2022, and took effect starting January 1, 2023. The 2022 CBC contains California amendments based on the American Society of Civil Engineers (ASCE) Minimum Design Standard ASCE/SEI 7-16, Minimum Design Loads for Buildings and Other Structures, provides requirements for general structural design and includes means for determining earthquake loads as well as other loads (such as wind loads) for inclusion into building codes. Seismic design provisions of the building code generally prescribe minimum lateral forces applied statically to the structure, combined with the gravity forces of the dead and live loads of the structure, which the structure then must be designed to withstand. The prescribed lateral forces are generally smaller than the actual peak forces that would be associated with a major earthquake. Consequently, structures should be able to (1) resist minor earthquakes without damage; (2) resist moderate earthquakes without structural damage but with some nonstructural damage; and (3) resist major earthquakes without collapse, but with some structural as well as nonstructural damage. Conformance to the current building code recommendations does not constitute any kind of guarantee that significant structural damage would not occur in the event of a maximum magnitude earthquake; however, it is reasonable to expect that a structure designed in accordance with the seismic requirements of the CBC should not collapse in a major earthquake.

The earthquake design requirements take into account the occupancy category of the structure, site class, soil classifications, and various seismic coefficients, all of which are used to determine a seismic design category (SDC) for a project. The SDC is a classification system that combines the occupancy categories with the level of expected ground motions at the site; SDC ranges from A (very small seismic vulnerability) to E/F (very high seismic vulnerability and near a major fault). Seismic design specifications are determined according to the SDC in accordance with CBC Chapter 16. CBC Chapter 18 covers the requirements of geotechnical investigations (Section 1803), excavation, grading, and fills (Section 1804), load-bearing of soils (Section 1806), as well as foundations (Section 1808), shallow foundations (Section 1809), and deep foundations (Section 1810). For Seismic Design Categories D, E, and F, Chapter 18 requires analysis of slope instability, liquefaction, and surface rupture attributable to faulting or lateral spreading, plus an evaluation of lateral pressures on basement and retaining walls, liquefaction and soil strength loss, and lateral movement or reduction in foundation soil-bearing capacity. It also addresses measures to be considered in structural design, which may include ground stabilization, selecting appropriate foundation type and depths, selecting appropriate structural systems to accommodate anticipated displacements, or any combination of these measures. The potential for liquefaction and soil strength loss must be evaluated for site-specific peak ground acceleration magnitudes and source characteristics consistent with the design earthquake ground motions.

Requirements for geotechnical investigations are included in Appendix J, CBC Section J104, Engineered Grading Requirements. As outlined in Section J104, applications for a grading permit are required to be accompanied by plans, specifications, and supporting data consisting of a soils engineering report and engineering geology report. Additional requirements for subdivisions requiring tentative and final maps and for other specified types of structures are in California Health and Safety Code Sections 17953 to 17955 and in 2013 CBC Section 1802. Testing of samples from subsurface investigations is required, such as from borings or test pits. Studies must be done as needed to evaluate slope stability, soil strength, position and adequacy of load-bearing soils, the effect of moisture variation on load-bearing capacity, compressibility, liquefaction, differential settlement, and expansiveness.

National Pollutant Discharge Elimination System (NPDES) Construction General Permit

Construction for the Project would disturb more than one acre of land surface, potentially affecting the quality of stormwater discharges into waters of the United States. The Project would therefore be subject to the *NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities* (Order 2022-0057-DWQ, NPDES No. CAS000002). The Construction General Permit regulates discharges of pollutants in stormwater associated with construction activity to waters of the United States from construction sites that disturb one or more acres of land surface, or that are part of a common plan of development or sale that disturbs more than one acre of land surface. The permit regulates stormwater discharges from construction or demolition activities, such as clearing and excavation; construction of buildings; and linear underground projects, including installation of water pipelines and other utility lines.

The Construction General Permit requires that construction sites be assigned a risk level of 1 (low), 2 (medium), or 3 (high), based both on the sediment transport risk at the site and the risk to receiving waters during periods of soil exposure (e.g., grading and site stabilization). The sediment risk level reflects the relative amount of sediment that could be discharged to receiving water bodies and is based on the nature of the construction activities and the location of the site relative to receiving water bodies. The receiving-waters risk level reflects the risk to receiving waters from the sediment discharge. Depending on the risk level, the construction projects could be subject to the following requirements:

- Effluent standards
- Good site management "housekeeping"
- Non-stormwater management
- Erosion and sediment controls
- Run-on and runoff controls
- Inspection, maintenance, and repair
- Monitoring and reporting requirements

The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP) that includes specific best management practices (BMPs) designed to prevent sediment and pollutants from coming into contact with stormwater and moving off-site into receiving waters. The BMPs fall into several categories, including erosion control, sediment control, waste management, and good housekeeping. They are intended to protect surface water quality by preventing eroded soil and construction-related pollutants from migrating off-site from the construction area. Routine inspection of all BMPs is required under the Construction General Permit. In addition, the SWPPP must contain a visual monitoring program, a chemical monitoring program for non-visible pollutants, and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment.

The SWPPP must be prepared before construction begins. The SWPPP must contain a site map(s) that delineates the construction work area, existing and proposed buildings, parcel boundaries, roadways, stormwater collection and discharge points, general topography both before and after construction, and drainage patterns across the project area. The SWPPP must list BMPs and the placement of those BMPs that the proponent would use to protect stormwater runoff.

The Construction General Permit also sets post-construction standards (i.e., implementation of BMPs to reduce pollutants in stormwater discharges from the site after construction).

In the Project area, the Construction General Permit is implemented and enforced by the San Francisco Bay RWQCB, which administers the stormwater permitting program. Dischargers must electronically submit a notice of intent and permit registration documents to obtain coverage under this Construction General Permit. Dischargers are to notify the San Francisco Bay RWQCB of violations or incidents of non-compliance and submit annual reports identifying deficiencies in the BMPs and explaining how the deficiencies were corrected. The risk assessment and SWPPP must be prepared by a State Qualified SWPPP Developer, and implementation of the SWPPP must be overseen by a State Qualified SWPPP Practitioner. A legally responsible person, who is legally authorized to sign and certify permit registration documents, is responsible for obtaining coverage under the permit.

Paleontological Resources–Regulations - California Public Resources Code

Paleontological resources are the fossilized remains of organisms from prehistoric environments found in geologic strata. They range from mammoth and dinosaur bones to impressions of ancient animals and plants, trace remains, and microfossils. California Public Resources Code (Section 5097.5) stipulates that the unauthorized removal of a paleontological resource is a misdemeanor.

Under the CEQA Guidelines, a project would have a significant impact on paleontological resources if it would disturb or destroy a unique paleontological resource or site or unique geologic feature.

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972 to protect structures for human occupancy from the hazard of surface faulting. In accordance with the act, the State Geologist has established regulatory zones—called earthquake fault zones—around the surface traces of active faults and has published maps showing these zones. Buildings for human occupancy cannot be constructed across surface traces of faults that are determined to be active. Because many active faults are complex and consist of more than one branch that may experience ground surface rupture, earthquake fault zones extend approximately 200 to 500 feet on either side of the mapped fault trace. As discussed above, the Project site is in a Liquefaction Seismic Hazard Zone.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act was enacted in 1990 after the Loma Prieta earthquake to reduce threats to public health and safety and minimize property damage caused by earthquakes. This act requires the State Geologist to delineate various seismic hazard zones, and cities, counties, and other local permitting agencies to regulate certain development projects within these zones. For projects that would locate structures for human occupancy within designated Zones of Required Investigation, the Seismic Hazards Mapping Act requires project proponents to perform a site-specific geotechnical investigation to identify the potential site-specific seismic hazards and corrective measures, as appropriate, before receiving building permits. The CGS Guidelines for Evaluating and Mitigating Seismic Hazards (Special Publication 117A) provides guidance for evaluating and mitigating seismic hazards. CGS is in the process of producing official maps based on USGS topographic quadrangles, as required by the Act. As discussed above, the Project site is in a Liquefaction Seismic Hazard Zone.

5.7.2.3 Local

City of Hayward General Plan Policies

The City of Hayward implements regulations and programs to minimize the risk of geologic and seismic hazards. These regulations and programs include, among others, the City Building Code and building permit process, the City Grading and Clearing Permit process, the Multi-Jurisdictional Local Hazard Mitigation Plan with City of Hayward Annex document, the City of Hayward Comprehensive Emergency Management Plan, and the Community Emergency Response Team program. (City of Hayward 2014)

The Hayward 2040 General Plan provides planning guidance for projects within the City. Specific to geology and soil hazards, the General Plan contains the following policies which apply to the Project:

Hayward 2040 General Plan Policies Relevant to Geology and Soils	
HAZ-2.1 Seismic Safety Codes and Provisions	The City shall enforce the seismic safety provisions of the Building Code and Alquist-Priolo Special Studies Zone Act to minimize earthquake-related hazards in new construction, particularly as they relate to high occupancy structures or buildings taller than 50 feet in height.
HAZ-2.2 Geologic Investigations	The City shall require a geologic investigation for new construction on sites within (or partially within) the following zones: • Fault Zone (see Figure 9.2-1 in the Hazards Background Report) • Liquefaction Zone (see Figure 9.2-2 in the Hazards Background Report) • Landslide Zone (see Figure 9.2-3 in the Hazards Background Report) A licensed geotechnical engineer shall conduct the investigation and prepare a written report of findings and recommended mitigation measures to minimize potential risks related to seismic and geologic hazards.
HAZ-2.3 Fault Zones Assumption	The City shall assume that all sites within (or partially within) any fault zone are underlain by an active fault trace until a geotechnical investigation by a licensed geotechnical engineer proves otherwise.
HAZ-2.5 Existing Buildings in a Fault Zone	The City shall prohibit the expansion of existing buildings (constructed prior to the adoption of the Alquist-Priolo Special Studies Zone Act) that are located over an active fault. Renovations to existing buildings within a fault zone shall be subject to the limitations and requirements of the Alquist-Priolo Special Studies Zone Act.
HAZ-2.6 Infrastructure and Utilities	The City shall require infrastructure and utility lines that cross faults to include design features to mitigate potential fault displacement impacts and restore service in the event of major fault displacement. Mitigation measures may include plans for damage isolation or temporary bypass by using standard isolation valves, flexible hose or conduit, and other techniques and equipment.
NR-6.3	The City shall ensure that dredging and grading activities do not contribute to sedimentation of saltwater sloughs or marshes.
NR-6.4	The City shall minimize grading and, where appropriate, consider requiring onsite retention and settling basins.
NR-7.2 Paleontological Resource Mitigation	The City shall develop or ensure compliance with protocols that protect or mitigate impacts to paleontological resources, including requiring grading and construction projects to cease activity when a paleontological resource is discovered so it can be safely removed.

5.7.3 Discussion

a.i to a.iv) *Would the Project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:* i) *Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42,* ii) *Strong seismic ground shaking?* iii) *Seismic-related ground failure, including liquefaction?* iv) *Landslides?* **Less-than-Significant Impact**.

Construction and Operation

The Project site is not within an established EFZ. The nearest EFZ is the Hayward fault section of the Hayward Fault zone (approximately 3.6 miles east of the Project site). Therefore, there would be no impact related to surface fault rupture.

The presence of the Hayward, Calaveras, San Andreas, and Silver Creek fault zones in the region could subject the Project site to strong seismic ground shaking in the event of an earthquake on either of these fault zones. Strong seismic ground shaking and/or seismic-induced ground failures (i.e., liquefaction and/or lateral spreading) at the Project site could damage Project structures, which would be a potentially significant impact.

The Project would be subject to the seismic design criteria of the CBC and local building codes, which requires that all improvements be constructed to withstand anticipated ground shaking from regional fault sources. The CBC and local building codes requires that a licensed geotechnical engineer be retained to design the Project components to withstand probable seismically induced ground shaking (and secondary ground failures) and consolidate recommendations into a site-specific geotechnical report.

All construction would adhere to the specifications, procedures, and site conditions contained in the final design plans, which would comply with the seismic recommendations of a California-registered, professional geotechnical engineer contained in the Geotechnical Exploration report in accordance with the CBC and local building codes. The final structural design would be subject to approval and follow-up inspection by the City of Hayward Department of Public Works and Building Division. Final design requirements would be provided to the on-site construction supervisor and the City of Hayward Department of Public Works and Building Division to ensure compliance.

Adherence to the applicable building and fire code requirements would ensure that the Project would not directly or indirectly cause substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking, liquefaction, or landslides. Therefore, the impacts would be less than significant.

b) *Would the Project result in substantial soil erosion or the loss of topsoil?* **Less-than-Significant Impact**.

Construction

The Project would include ground-disturbing construction activities that could increase erosion risk or sediment transport. The total ground disturbance would be more than one acre. Construction could result in soil erosion during excavation, grading, trenching, and soil stockpiling. Because construction activities would exceed one acre, the Project must comply with the Construction General Permit, described in the Regulatory Framework. The development of this requirement is to require stormwater management and erosion control on construction sites.

The Construction General Permit requires preparing and implementing a SWPPP, which requires applying BMPs to control run-on and runoff from construction work sites. The BMPs would include but not be limited to physical barriers to prevent erosion and sedimentation; construction of sedimentation basins; limitations on work periods during storm events; use of infiltration swales; protection of stockpiled materials; and a variety of other measures that would substantially reduce or prevent erosion from occurring during construction. Non-stormwater management measures include installing specific discharge controls during activities such as paving operations and washing and fueling vehicles and equipment.

Through compliance with these independently enforceable existing requirements, the Project's potential impacts associated with soil erosion and loss of topsoil during construction would be less than significant.

Operation

Operation of the Project would not include activities that would increase the soil erosion at the Project site. The operation and maintenance of the Project would be similar to the existing conditions. Therefore, Project impacts would be less than significant.

c) *Would the Project be located on a 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?* **Less-than-Significant Impact**.

Construction

As discussed above, in Criterion a, the Project site could be subjected to strong seismic ground shaking, which could trigger liquefaction, lateral spreading, and other seismic-related ground failures.

However, also discussed above, the Project would be subject to the design criteria of the CBC and local building codes, which would be implemented before and during construction activities. Project construction would implement standard engineering and seismic safety design techniques, which will be provided in the Geotechnical Exploration report. in adherence with the CBC and local building codes. Compliance with the applicable building and fire code requirements would ensure that the Project would not directly or indirectly cause substantial adverse effects related to unstable soils. Therefore, the impacts would be less than significant.

Operation

Upon completion of the construction activities, the Project would have complied with the CBC and the applicable building and fire codes regarding seismic-related ground shaking and seismic-induced ground failures (i.e., liquefaction, lateral spreading, and settlement). Adherence to the required compliance with existing laws and regulations would reduce the Project's potential operational impacts to less than significant.

d) *Would the Project be located on expansive soil*[13] *creating substantial direct or indirect risks to life or property?* **Less-than-Significant Impact**.

[13] The CBC, based on the International Building Code and the now defunct Uniform Building Code, no longer includes a Table 18-1-B. Instead, Section 1803.5.3 of the CBC describes the criteria for analyzing expansive soils.

Construction

The Project site is located on soils having a moderate expansion potential (NCRS 2023). As stated above, the Project would be subject to the design criteria of the CBC and local building codes, which requires that all improvements be constructed to address expansive soils, if present. The CBC and local building codes require that a licensed geotechnical engineer be retained to design the Project components to either remove or treat expansive soils and consolidate recommendations into a site-specific geotechnical report which the design team must adhere to in the Project's structural design.

Adherence to the applicable CBC and local building code requirements would ensure that expansive soil would not impact the Project. Therefore, the impacts would be less than significant.

Operation

Upon completion of the construction activities, the Project would have complied with the CBC and the applicable local building codes regarding expansive soils. Adherence to the required compliance with existing laws and regulations would reduce the Project's potential operational impacts to less than significant.

e) *Would the Project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water?* **No Impact.**

Construction and Operation

As discussed in Section 3.2.4, *Infrastructure Improvements*, sanitary sewer connections for the new Administration Building would connect to the existing sewer system. No new sewer connections or sewer line upgrades are part of the PE EQ Facility. The sanitary sewer system connections would be made to the existing sewer system. As such, the Project would not include the installation of a septic tank or alternative wastewater disposal system, and there would be no impact related to soil.

f) *Would the Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?* **No Impact.**

Construction and Operation

As discussed above in *Paleontological Resources*, the fill and Bay Mud beneath the Project site would have no potential for significant paleontological resources, resulting in no impact.

5.8 Greenhouse Gas Emissions

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
VIII. 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 an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

5.8.1 Environmental Setting

Various gases in the Earth's atmosphere, classified as atmospheric greenhouse gases (GHGs), play a critical role in determining the Earth's surface temperature. Solar radiation enters the atmosphere from space and a portion of the radiation is absorbed by the Earth's surface. The Earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower frequency infrared radiation. GHGs, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation that otherwise would have escaped back into space is retained, resulting in a warming of the atmosphere. This phenomenon is known as the greenhouse effect. Among the prominent GHGs contributing to the greenhouse effect, or climate change, are carbon dioxide (CO_2), methane (CH_4), ozone (O_3), water vapor, nitrous oxide (N_2O), chlorofluorocarbons (CFCs), and perfluorocarbons (PFCs). Human-caused emissions of these GHGs in excess of natural ambient concentrations are responsible for enhancing the greenhouse effect.

CO_2 is the reference gas for climate change because it is the predominant GHG emitted. The effect that each of the aforementioned gases can have on global warming is a combination of the mass of their emissions and their global warming potential (GWP). GWP indicates on a pound-for-pound basis, how much a gas contributes to global warming relative to how much warming would be predicted to be caused by the same mass of CO_2. CH_4 and N_2O are substantially more potent GHGs than CO_2, with 100-year GWPs of 25 and 298 times that of CO_2, respectively (CARB 2024).

In emissions inventories, GHG emissions are typically reported in metric tons of CO_2 equivalents (MT CO_2e). CO_2e is calculated as the product of the mass emissions of a given GHG and its specific GWP. While CH_4 and N_2O have much higher GWPs than CO_2, CO_2 is emitted in such vastly greater quantities that it accounts for the majority of GHG emissions in CO_2e.

GHG emissions generated by the current use at the Project site is primarily generated from the building operations and the vehicles coming to and from the site.

5.8.2 Regulatory Framework

5.8.2.1 State

Executive Order S-3-05

In June 2006, Governor Arnold Schwarzenegger signed Executive Order S-3-05, which established the following statewide emission-reduction targets through the year 2050:

- By 2010, reduce GHG emissions to 2000 levels;
- By 2020, reduce GHG emissions to 1990 levels; and
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

Executive Order B-55-18

In September 2018, Governor Brown signed Executive Order B-55-18, committing California to total, economy-wide carbon neutrality[14] by 2045. Executive Order B-55-18 directs CARB to work with relevant state agencies to develop a framework to implement accounting to track progress toward this goal. The goal will be incorporated into future Scoping Plans, as policies and actions which affect major sectors of California's economy, including transportation, agriculture, development, industrial, and others. This executive order does not contain any requirements that would need to be implemented at the Project level. The carbon neutrality requirements would be implemented on a regional and local level through regional electricity providers and vehicle and equipment standards.

Assembly Bill 32

California Assembly Bill (AB) 32, the Global Warming Solutions Act of 2006, required the CARB to establish a statewide GHG emissions cap for 2020 based on 1990 emission levels. AB 32 required CARB to adopt regulations that identify and require selected sectors or categories of emitters of GHGs to report and verify their statewide GHG emissions, and CARB is authorized to enforce compliance with the program. Under AB 32, CARB also was required to adopt a statewide GHG emissions limit equivalent to the statewide GHG emissions level in 1990, which was to be achieved by 2020. The state met this goal in 2016, four years ahead of its target.

Climate Change Scoping Plan (AB 32 Scoping Plan)

A specific requirement of AB 32 was to prepare a Climate Change Scoping Plan for achieving the maximum technologically feasible and cost-effective GHG emission reduction by 2020. CARB developed and approved the initial AB 32 Scoping Plan in 2008, outlining the regulations, market-based approaches, voluntary measures, policies, and other emission reduction programs that would be needed to meet the 2020 statewide GHG emission limit and initiate the transformations needed to achieve the State's long-range climate objectives (CARB 2008). The First Update to the Scoping Plan was approved by CARB in May 2014 and built upon the initial AB 32 Scoping Plan with new strategies and recommendations (CARB 2014).

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14 Having a net zero carbon footprint, refers to achieving net zero carbon dioxide emissions by balancing carbon emissions with carbon removal (often through carbon offsetting) or simply eliminating carbon emissions altogether (the transition to the "post-carbon economy").

Executive Order B-30-15 and SB 32

In April 2015, Governor Brown issued an Executive Order B-30-15 to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. Reaching this emission reduction target will facilitate California in reaching its ultimate goal of reducing emissions 80 percent under 1990 levels by 2050, as identified in Executive Order S-3-05.

Subsequently, Senate Bill (SB 32), which codifies the Executive Order's 2030 emissions reduction target, was approved by the Governor on September 8, 2016. SB 32 requires CARB to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emissions to ensure that statewide GHG emissions are reduced to at least 40 percent below the 1990 statewide GHG emissions limit no later than December 31, 2030.

CARB adopted the 2017 Scoping Plan for achieving this goal, which takes into account the key programs associated with implementation of the AB 32 Scoping Plan - such as GHG reduction programs for cars, trucks, fuels, industry, and electrical generation - and builds upon, in particular, existing programs related to the Cap-and-Trade Regulation; the Low Carbon Fuel Standard; much cleaner cars, trucks, and freight movement; power generation for the State using cleaner renewable energy; and strategies to reduce methane emissions from agricultural and other wastes by using it to meet the State's energy needs. The 2017 Scoping Plan also addresses, for the first time, GHG emissions from natural and working lands, including the agriculture and forestry sectors (CARB 2017). The cornerstone of the 2017 Scoping Plan Update is an expansion of the cap-and-trade program to meet the aggressive 2030 GHG emissions goal and ensure achievement of the 2030 limit set forth by Executive Order B-30-15.

5.8.2.2 Regional

BAAQMD CEQA Guidance

The BAAQMD considers GHG impacts to be exclusively cumulative impacts (BAAQMD 2022); therefore, assessment of significance is based on a determination of whether the GHG emissions from a project represent a cumulatively considerable contribution to the global atmosphere. Significance of GHG impacts is generally evaluated by a) comparison to GHG thresholds and b) consistency with an adopted plan, policy, or regulation. For GHG thresholds, the BAAQMD published the 2022 CEQA Guidelines which describe design elements for land use projects that contribute towards achieving California's long-term climate goals (BAAQMD 2022). These thresholds are qualitative rather than numerical and are presented in **Table 5.8-1**.

TABLE 5.8-1
BAAQMD GHG THRESHOLDS OF SIGNIFICANCE (MUST INCLUDE A OR B)

Option	Air District Thresholds
Option A	Projects must include, at a minimum, the following project design elements: 1) Buildings a. No natural gas (residential and non-residential) b. No wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines 2) Transportation a. Achieve compliance with EV requirements in the most recently adopted version of CALGreen Tier 2 b. Meet a locally adopted Senate Bill (SB) 743 VMT target
Option B	Be consistent with a local GHG Reduction Strategy that meets the criteria under the CEQA Guidelines Section 15183.5(b)

SOURCE: BAAQMD 2022. *CEQA Guidance and Thresholds Update*, April.

5.8.2.3 Local

City of Hayward Climate Action Plan

The local, adopted GHG reduction plan is the City of Hayward's Climate Action Plan (CAP). The City's original CAP was adopted by the City Council in 2009 and then incorporated into the City's General Plan in 2014. The 2009 and 2014 versions focused on how the City would achieve its 2020 greenhouse gas emission target. A new, updated CAP is under development and will focus on how the City will achieve its 2030 greenhouse gas emission target and put the City on a path to carbon neutrality by 2045. The current plan contains policies and implementation programs that serve as actions to reduce greenhouse gas emissions. The overall objectives of these policies and implementation programs are to reduce Hayward's greenhouse gas emissions by:

- 20 percent below 2005 baseline levels by 2020,
- 62.7 percent below 2005 baseline levels by 2040, and
- 82.5 percent below 2005 baseline levels by 2050.

Although the Hayward Climate Action Plan has reduction goals for greenhouse gas emissions, it does not provide numerical significance thresholds for GHG emissions.

City of Hayward 2040 General Plan

The following from the General Plan are relevant to the Project to reduce GHGs (City of Hayward 2014):

City of Hayward 2040 Policies Relevant to GHG	
LU-1.8	Green Building and Landscaping Requirements: maintain and implement green building and landscaping requirements for private- and public-sector development.
NR-4.3	Efficient Construction and Development Practices: encourage construction and building development practices that maximize the use of renewable resources.
NR-4.4	Energy Resource Conservation in Public Buildings: require all public facilities and services to incorporate energy and resource conservation standards and practices.
PSF-7.10	Recycled Products or Processes for Capital Projects: implement the use of recycled products or recycling processes whenever possible as part of any capital project.

5.8.3 Discussion

a) *Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?* **Less-than-Significant Impact.**

GHG emissions worldwide cumulatively contribute to the significant adverse environmental impacts of global climate change. No single project could generate sufficient GHG emissions on its own to noticeably change the global average temperature. The combination of GHG emissions from past, present, and future projects in Hayward, the entire state of California, across the nation, and around the world contribute cumulatively to the phenomenon of global climate change and its associated environmental impacts. Operations at the Hayward WPCF are expected to be similar to existing conditions after completion of the Project components.

Construction

The combustion of diesel fuel to provide power for the operation of various construction equipment, and gasoline for worker commutes, result in the generation of GHGs. GHG emissions resulting from the Project were estimated using CalEEMod, as described above in Section 5.3, *Air Quality*. Construction emissions were estimated for equipment and truck exhaust and construction worker vehicles. CO_2, CH_4 and N_2O emissions from off-road construction equipment and construction vehicle trips were derived from the CalEEMod run to estimate criteria air pollutant emissions. N_2O and CH_4 emissions were multiplied by their respective Global Warming Potentials GWPs (25 and 298) and added to the CO_2 emissions to obtain CO_2e emissions.

Table 5.8-2 shows that Project construction would generate a total of approximately 846 $MTCO_2e$ for all three components, with an annual amortized average of 28 $MTCO_2e$. As described above in Section 5.3, *Air Quality*, the annual GHG emission rate is a conservative estimate based on the default completion times generated with the CalEEMod model. User-generated construction scheduling in CalEEMod relies on specific start and end dates for construction phases such as demolition, site prep, grading, building construction, paving, and architectural coating. In addition, the construction schedule accounts for the quantities and operating hours for specific types of construction equipment throughout these phases. Because the available Project information did not have this level of detail, the CalEEMod model generated a default construction schedule and equipment list instead. The default schedule predicted shorter construction periods for each of the Project components than what has been planned by the City. This shorter construction schedule represents the same overall amounts of construction emissions, but occurring with greater intensity and over a shorter amount of time than what is planned. The shorter completion times suggested by the model's default schedule do not represent an intent to condense the planned schedule, but rather show a conservative estimate of average daily construction emissions based on default model parameters.

The diesel-powered pumps that would be used during PE EQ construction would only operate during wet weather events, assuming three engines operating for approximately four hours in a given day. Emissions were calculated using factors from CalEEMod for diesel pumps.[15] All the predicted wet weather events have been assumed to occur during the CalEEMod default construction schedule, which assumes most activity would occur in 2025 and 2026, rather than being distributed from 2025 to 2030. This results in a conservative annual emissions estimate due to more assumed activity occurring in 2025 and 2026.

The BAAQMD has not adopted numerical significance thresholds for construction related GHG emissions in its 2022 CEQA Guidelines (BAAQMD 2022). However, it recommends that the Lead Agency (i.e., the City of Hayward) quantify and disclose construction GHG emissions and incorporate best management practices to reduce GHG emissions during construction, as applicable.

TABLE 5.8-2
ANNUAL PROJECT CONSTRUCTION GHG EMISSIONS

Construction Year	CO_2e metric tons/year
2024	31
2025	568
2026	248
Total	**846**
Amortized	**28**

SOURCE: Data compiled by Environmental Science Associates in 2024 (Appendix A)

NOTES: $MTCO_2e$ = metric tons of carbon dioxide equivalent

2026 emissions include diesel pump emissions from 6 wet weather events.

Construction-related GHG emissions were amortized over 30 years, which is a commonly accepted method for including construction emissions as part of the Project's average annual emissions.

As discussed previously, neither the BAAQMD CEQA guidance nor the City's General Plan contain numerical significance thresholds for GHG emissions. GHG emissions from the construction phase of a project represent a very small portion of emissions over the project's useful life, would be at least 30 years for this Project. The BAAQMD's

15 If a fourth engine and/or longer operating hours are required (up to twelve hours a day), the Project would remain below impact thresholds.

proposed thresholds are instead designed to address operational GHG emissions from land use development projects which represent the majority of a project's GHG emissions. The primary source of GHG emissions from construction is diesel-powered construction equipment. Large reductions in construction emissions are difficult to realize because there are currently no economical alternatives to diesel fuel for powering most construction equipment. Improvements in statewide regulations governing construction equipment and fuel standards driven by SB 32 and other initiatives will also contribute to reduced emissions from construction activities.

The City's GHG Reduction Strategy does not include measures to reduce emissions from construction equipment, but it does contain measures to encourage recycling of materials during construction. Therefore, the Project has been evaluated for compliance with relevant General Plan policies under checklist question b) below.

Operation

Operation of the Project is anticipated to be similar to existing conditions with the new components expected to require up to twelve more workers, and generate two additional bi-weekly truck delivery. Operational GHG emissions associated with the increase in commute trips from the additional workers and delivery truck were addressed in the CalEEMod emissions modeling performed for the Project (Appendix A). The modeling confirmed that this small increase in vehicle trips over existing conditions results in a negligible increase in GHG emissions. There is no new proposed natural gas infrastructure, which is consistent with the BAAQMD criteria for building design. As a result, the impact related to GHG emissions from the Project operations would be less than significant.

b) *Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?* **Less-than-Significant Impact.**

Construction and Operation

The City of Hayward's CAP has policies and implementation programs that serve as actions to reduce GHG emissions. Policies identified as relevant to the Project relate to green building design and use of recycled materials during construction. The Project would adhere to these policies as well as be consistent with the BAAQMD climate impact thresholds of significance. The new Administration Building is expected to achieve Leadership in Energy and Environmental Design (LEED) Silver rating, as well as zero net energy use in accordance with City policy. There is no new natural gas supply associated with the Project. By adhering to the City CAP policies and being consistent with BAAQMD thresholds, the Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases, and impacts would be less than significant.

5.9 Hazards and Hazardous Materials

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
IX. HAZARDS AND HAZARDOUS MATERIALS — Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☒	☐	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	☐	☐	☐	☒

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5.9.1 Environmental Setting

5.9.1.1 Operational Chemicals

As described in Section 3.1, *Project Location and Existing Site Conditions*, the WPCF provides secondary treatment of domestic, commercial, and industrial wastewater for the City of Hayward. The overall treatment process consists of primary treatment (screening, grit and scum removal, primary sedimentation, flow equalization, and odor and air emission abatement), secondary biological treatment (a biological trickling filter/solids contact process), final sedimentation, and chlorine disinfection (i.e., sodium hypochlorite). Treatment processes for solids and sludge generated at the WPCF include receiving facilities for fats, oils, and grease, thickening, anaerobic digestion, and solar drying beds. Effluent from the secondary treatment process is disinfected in an earthen channel west of the treatment facilities. The channel conveys the chlorinated effluent to the Hayward Effluent Pump Station, which is then pumped to the EBDA pipeline and discharged to a deepwater outfall in San Francisco Bay.

Sludge produced at the WPCF is thickened, anaerobically digested, dried in outdoor beds, and stored for up to two years in a field adjacent to the drying beds. The City hauls dried biosolids approximately once a year to an authorized disposal site for use as alternative daily landfill cover or disposal under a contract with Waste Management. Polymer is incorporated to facilitate dewatering during the thickening process as part of the sludge treatment process. Following anaerobic digestion, the treated sludge is conveyed and deposited onto drying and winter beds.

The WPCF also produces tertiary-treated recycled water serving industrial and landscaping water users within the service area (City of Hayward 2023). The recycled water treatment process includes the use of chemicals in the treatment process.

The Operations Center includes an analytical laboratory for testing. Chemicals used at the laboratory include 1-liter to 4-liter bottles of hydrochloric acid, hydrofluoric acid, nitric acid, sulfuric acid, sodium hydroxide, potassium chloride, magnesium chloride, potassium permanganate, silver nitrate, potassium bromate, pyridine barbituric acid, boric acid, sulfamic acid, phenylarsine oxide, acetate buffer, potassium iodide, iodine, oxalic acid, concentrated cyanide, mercury, and other metal standards (City of Hayward 2023). The largest quantity of any of the chemicals at any given time is four liters.

5.9.1.2 Existing Hazardous Building Materials

As described in Section 3.1, *Project Location and Existing Site Conditions*, the WPCF was initially constructed in 1954. The existing Operations Center on the Project site was constructed in the 1970s and expanded in the 1980s and again in the 1990s when the laboratory was expanded. Therefore, some structures may have building materials that predate the late 1970s. After the late 1970s, USEPA placed bans on the use of hazardous building materials, such as asbestos-containing materials (ACM) and lead-based paint (LBP) in construction materials.

On-Site Sources of Contamination

The Department of Toxic Substances Control (DTSC) maintains the EnviroStor website, and the State Water Resources Control Board (SWRCB) maintains the GeoTracker website, both of which track known hazardous materials release (spill) sites, collectively referred to as the Hazardous Waste and Substances Sites (Cortese) List. The Project site is included on the Government Code § 65962.5 hazardous materials list (also referred to as the Cortese List) for the operation of the WPCF, which has a Waste Discharge Requirements (WDR) permit (see below in *Regulatory Setting*, *Local*, *WDR*).

In addition, the Project site is listed for a former leaking 1,000-gallon gasoline underground storage tank (UST) that was removed in 1989, along with associated piping and contaminated soil and groundwater (RWQCB 2022). The former UST was located just south of the Maintenance Building (Building 03B on Figure 3-3). No holes were noted in the UST. The direction of groundwater flow varied from west to southwest towards the Bay. The Regional Water Quality Control Board (RWQCB), the overseeing regulatory agency, closed the case on June 30, 2022, and issued a No Further Action letter. Case closure means that RWQCB concluded this site does not pose a risk to people or the environment. However, RWQCB also stated that:

> *"There is residual petroleum-contaminated soil and groundwater at the Source Property that could pose an unacceptable risk during future construction and excavation activities, the installation of water wells and utilities, or a change to a more sensitive land use. Contractors conducting subsurface activities should be prepared to encounter petroleum-impacted soil and groundwater. Any encountered pollution should be managed properly to avoid threats to human health or the environment. Proper management may include sampling, risk assessment, additional cleanup work, mitigation measures, or some combination of these tasks."*

Furthermore, a Phase I Environmental Site Assessment was prepared for the Project site and confirmed there is residual petroleum-contaminated soil and groundwater at the site that could pose an unacceptable risk during future construction and excavation activities, the installation of water wells and utilities, or a change to a more sensitive land use (AEI 2024).

Nearby Offsite Hazardous Materials Sites

SWRCB and DTSC maintain publicly accessible websites that identify and track the status of sites that have released hazardous materials. Given the west to southwest groundwater flow direction at the Project site, the hazardous materials release websites were checked for nearby hazardous materials release sites located upgradient (east) of the Project site that could have the potential to affect the Project site. There are no hazardous materials release sites within 0.5 miles of the Project site (SWRCB/DTSC 2023).

5.9.1.3 Proximity to Schools

The Project site is not located within 0.25 miles of an existing or proposed school. The nearest school is California Crosspoint Academy, located approximately 0.9 miles east of the Project site.

5.9.1.4 Proximity to Airports

The Project site is approximately 1.6 miles southwest of the Hayward Executive Airport. Additionally, Oakland International Airport is located 6.4 miles north of the Project site.

5.9.1.5 Wildland Fires

A wildland fire is any non-structure fire that occurs in vegetation or natural fuels. The Project site is in a highly urbanized setting with no nearby wildlands. According to the California Department of Forestry and Fire Protection (CAL FIRE) Fire Hazard Severity Zone Maps of Alameda County, the Project site is not located within or near a very high fire hazard severity zone (CAL FIRE 2008, 2023).

5.9.2 Regulatory Framework

5.9.2.1 Federal

The primary federal agencies with responsibility for hazardous materials management include USEPA, the U.S. Department of Labor Occupational Safety and Health Administration (Fed/OSHA), and the U.S. Department of Transportation (USDOT). Federal laws, regulations, and responsible agencies are summarized in **Table 5.9-1**.

State and local agencies often have either parallel or more stringent rules than federal agencies. In most cases, state law mirrors or overlaps federal law and enforcement of these laws is the responsibility of the state or of a local agency to which enforcement powers are delegated. For these reasons, the requirements of the law and its enforcement are discussed under either the State or local agency section.

TABLE 5.9-1
FEDERAL LAWS AND REGULATIONS RELATED TO HAZARDOUS MATERIALS MANAGEMENT

Classification	Law or Responsible Federal Agency	Description
Hazardous Materials Management	Community Right-to-Know Act of 1986 (also known as Title III of the Superfund Amendments and Reauthorization Act (SARA))	Imposes requirements to ensure that hazardous materials are properly handled, used, stored, and disposed of and to prevent or mitigate injury to human health or the environment in the event that such materials are accidentally released.
Hazardous Waste Handling	Resource Conservation and Recovery Act of 1976 (RCRA)	Under RCRA, USEPA regulates the generation, transportation, treatment, storage, and disposal of hazardous waste from “cradle to grave.”
	Hazardous and Solid Waste Act	Amended RCRA in 1984, affirming and extending the “cradle to grave” system of regulating hazardous wastes. The amendments specifically prohibit the use of certain techniques for the disposal of some hazardous wastes.
Hazardous Materials Transportation	USDOT	USDOT has the regulatory responsibility for the safe transportation of hazardous materials. The USDOT regulations govern all means of transportation except packages shipped by mail (49 CFR).
	U.S. Postal Service (USPS)	USPS regulations govern the transportation of hazardous materials shipped by mail.
Occupational Safety	Occupational Safety and Health Act of 1970	Fed/OSHA sets standards for safe workplaces and work practices, including the reporting of accidents and occupational injuries (29 CFR 1910).
Fire Code	2000 Uniform Fire Code and Standards	The Uniform Fire Code establishes standards for fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, wine caves, hazardous materials storage and use, provisions intended to protect and assist first responders, industrial processes, and many other general and specialized fire-safety elements for new and existing buildings and premises.
Structural and Building Components (Hazardous Building Materials [ACM, LBP, and PCBs])	Toxic Substances Control Act	Regulates the use and management of hazardous building materials, and sets forth detailed safeguards to be followed during the disposal of such items.
	USEPA	The US EPA monitors and regulates hazardous materials used in structural and building components and their effects on human health.

5.9.2.2 State

The primary state agencies with responsibility for hazardous materials management in the region include DTSC and RWQCB within the California Environmental Protection Agency (Cal EPA), California Occupational Safety and Health Administration (Cal/OSHA), California Department of Health Services (CDHS), California Highway Patrol (CHP), and California Department of Transportation (Caltrans). State laws, regulations, and responsible agencies are summarized in **Table 5.9-2**.

5.9.2.3 State Regulations Applicable to Hazardous Building Materials

From the above-listed regulations, the use and removal of hazardous building materials is subject to the following regulations specific to the demolition and renovation of structures. These regulations would be applicable to the Project if any removal of buildings or structures included hazardous materials.

TABLE 5.9-2
STATE LAWS AND REGULATIONS RELATED TO HAZARDOUS MATERIALS MANAGEMENT

Classification	Law or Responsible State Agency	Description
Hazardous Materials Management	Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program); CUPA (Health and Safety Code Sections 25404 et seq)	In January 1996, Cal EPA adopted regulations, which implemented a Unified Program at the local level. The agency responsible for implementation of the Unified Program is called the Certified Unified Program Agency (CUPA), which for the City of Hayward is the Hayward Fire Department (HFD).
	California Fire Code, Title 24, Chapter 9 of the California Code of Regulations	The California Fire Code regulates the storage and handling of hazardous materials, including the requirement for secondary containment, separation of incompatible materials, and preparation of spill response procedures.
Hazardous Waste Handling	California Hazardous Materials Release Response Plan and Inventory Law of 1985; CUPA	The California Hazardous Materials Release Response Plan and Inventory Law of 1985 (Business Plan Act) requires that businesses that store hazardous materials on-site prepare a Hazardous Materials Business Plan (HMBP) and submit it to the local CUPA, which in this case is the HFD.
	California Hazardous Waste Control Act; DTSC	Under the California Hazardous Waste Control Act, California Health and Safety Code, Division 20, Chapter 6.5, Article 2, Section 25100, et seq., DTSC regulates the generation, transportation, treatment, storage, and disposal of hazardous waste in California. The hazardous waste regulations establish criteria for identifying, packaging, and labeling hazardous wastes; dictate the management of hazardous waste; establish permit requirements for hazardous waste treatment, storage, disposal, and transportation; and identify hazardous wastes that cannot be disposed of in landfills. DTSC is also the administering agency for the California Hazardous Substance Account Act. California Health and Safety Code, Division 20, Chapter 6.8, Sections 25300 et seq., also known as the State Superfund law, providing for the investigation and remediation of hazardous substances pursuant to State law.

Classification	Law or Responsible State Agency	Description
Hazardous Materials Transportation	Titles 13, 22, and 26 of the California Code of Regulations	Regulates the transportation of hazardous waste originating in and passing through the state, including requirements for shipping, containers, and labeling.
	CHP and Caltrans	These two state agencies are primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies.
Occupational Safety	Cal/OSHA Regulations (Title 8 CCR)	Cal/OSHA has primary responsibility for developing and enforcing workplace safety regulations in California. Because California has a federally approved OSHA program, it is required to adopt regulations that are at least as stringent as those found in Title 29 of the Code of Federal Regulations (CFR). Cal/OSHA standards are generally more stringent than federal regulations. Concerning the use of hazardous materials in the workplace require employee safety training, safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation.
Construction Storm Water General Permit (Construction General Permit; Order 2022-0057-DWQ, NPDES No. CAS000002)	RWQCB	Dischargers whose project disturbs one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one of more acres, are required to obtain coverage under the *NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities* (Construction General Permit. Construction activity subject to this permit includes clearing, grading, grubbing, and other disturbances to the ground such as excavation and stockpiling, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of a facility. The Construction General Permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) that includes specific Best Management Practices (BMPs) designed to prevent sediment and pollutants from contacting stormwater from moving offsite into receiving waters. The BMPs fall into several categories, including erosion control, sediment control, waste management and good housekeeping, and are intended to protect surface water quality by preventing the off-site migration of eroded soil and construction-related pollutants from the construction area
Municipal Separate Storm Sewer System (MS4) Permit NPDES No. CAS612008 and Order No. R2-2022-0018 (RWQCB 2022) and Order No. R2-2023-0019 (RWQCB 2023	RWQCB	The MS4 permit requires permittees of the San Francisco Bay Region Municipal Regional Permit, including Hayward to reduce pollutants and runoff flows from new development and redevelopment using BMPs to the maximum extent practical. The MS4 permittee also has its own development standards, also known as Low Impact Development (LID)/post-construction standards that include a hydromodification element. The MS4 permit requires specific design concepts for LID/post-construction BMPs in the early stages of a project during the entitlement and CEQA process and the development plan review process.
Underground Infrastructure	California Code of Regulations Sections 4216–4216.9	Sections 4216–4216.9 “Protection of Underground Infrastructure” requires an excavator to contact a regional notification center (e.g., Underground Services Alert or Dig Alert) at least two days prior to excavation of any subsurface installations. Any utility provider seeking to begin a project that could damage underground infrastructure can call Underground Service Alert, the regional notification center for southern California. Underground Service Alert will notify the utilities that may have buried lines within 1,000 feet of the project. Representatives of the utilities are then notified and are required to mark the specific location of their facilities within the work area prior to the start of project activities in the area.

Asbestos-Containing Material (ACM)

Asbestos, a naturally occurring fibrous material, was used as a fireproofing and insulating agent in building construction before such uses were terminated due to liability concerns in the late 1970s. State-level agencies, in conjunction with USEPA and OSHA, regulate removal, abatement, and transport procedures for ACM. Releases of asbestos from industrial, demolition, or construction activities are prohibited by these regulations and monitoring is required for employees performing activities that could expose them to asbestos. Additionally, the regulations include warnings that must be heeded and practices that must be followed to reduce the risk for asbestos emissions and exposure. Finally, the Bay Area Air Quality Management District (BAAQMD) must be notified prior to the onset of demolition or construction activities with the potential to release asbestos. The following regulations apply to the removal and disposal of ACM: Code of Federal Regulations (CFR) Title 40, Part 61, Subpart M (Asbestos National Emission Standards for Hazardous Air Pollutants [NESHAP]); California Code of Regulations (CCR) Title 8, Sections 1529 and 5208; and BAAQMD Regulation 11, Rule 2. BAAQMD Rule 2 provides detailed requirements for the definition of materials that qualify as ACM, qualifications for ACM contractors, and procedures for testing, containment, removal, and disposal.

Lead-Based Paint (LBP)

Among its numerous uses and sources, lead can be found in paint, water pipes, solder in plumbing systems, and in soils around buildings and structures painted with LBP. Old peeling paint can contaminate near surface soil, and exposure to residual lead can have adverse health effects, especially in children. Cal/OSHA's Lead in Construction Standard is contained in CCR Title 8, Section 1532.1. The regulations address all of the following areas: permissible exposure limits (PELs); exposure assessment; compliance methods; respiratory protection; protective clothing and equipment; housekeeping; medical surveillance; medical removal protection; employee information, training, and certification; signage; record keeping; monitoring; and agency notification. The following regulations apply to the removal and disposal of LBP: Title IV, Toxic Substances Control Act, Sections 402, 403, and 404; Title 8 CCR Section 1532.1; and BAAQMD Regulation 11, Rule 1. In addition, the California Department of Public Health (CDPH) requires that LBP removal actions prepare and submit CDPH Form 8551, Abatement of Lead Hazards Notification, and CDPH Form 8552, Lead Hazard Evaluation Report to the CDPH.

Polychlorinated Biphenyls

Polychlorinated Biphenyls (PCBs) are mixtures of 200-plus individual chlorinated compounds (known as congeners) (DTSC 2022). In the past, PCBs were used in many applications such as coolants and lubricants in transformers, capacitors, and other electrical equipment. The manufacture of PCBs ended in the U.S. in the late 1970s after it was determined that they can cause harmful effects to human health and the environment. PCBs can be found in sources such as electrical transformers, fluorescent light ballasts and electrical devices with PCB capacitors, hydraulic oils, and building materials. PCBs are toxic, highly persistent in the environment, and bioaccumulate. There are no known natural sources of PCBs.

USEPA prohibited the use of PCBs in the majority of new electrical equipment and fluorescent light ballasts starting in 1979, and initiated a phase-out for much of the existing PCB-containing equipment (USEPA 2021). The inclusion of PCBs in electrical equipment and the handling of those PCBs are regulated by the provisions of the Toxic Substances Control Act, 15 U.S.C. Section 2601 et seq. (TSCA). Relevant regulations include labeling and periodic inspection requirements for certain types of PCB-containing equipment and outline highly specific safety procedures for their disposal. The State of California likewise regulates PCB-laden electrical equipment and materials contaminated above a certain threshold as hazardous waste; these regulations require that such materials be treated, transported, and disposed of accordingly. At lower concentrations for non-liquids, RWQCB may exercise discretion over the classification of such wastes. The following regulations apply to the removal and disposal of PCBs: Resource Conservation and Recovery Act: 4 CFR 761; Toxic Substances Control Act: U.S. Code Title 15, Section 2695; and 22 CCR Section 66261.24.

Mercury

Mercury may be present in mercury switches and compact fluorescent light bulbs (CFLs) and other tubes (DTSC 2005, 2010). A mercury switch is an electrical switch that opens and closes a circuit when a small amount of the liquid metal mercury connects metal electrodes to close the circuit. Since mercury is a toxic heavy metal, devices containing mercury switches must be treated as hazardous waste for disposal. Because of current regulations, most modern applications have eliminated mercury in switches. In the United States, USEPA regulates the disposition and release of mercury. Individual states and localities may enact further regulations on the use or disposition of mercury. The following regulations apply to the removal and disposal of mercury switches: 22 CCR Sections 66262.11, 66273 et seq., and 67426.1 through 67428.1.

Universal Waste

Universal waste is hazardous waste that has less stringent requirements for management and disposal. Common examples of universal waste include televisions, computers, computer monitors, batteries, and fluorescent lamps. Universal wastes are hazardous upon disposal but pose a lower risk to people and the environment than other hazardous wastes. State and federal regulations identify which unwanted products are universal wastes and provide simple rules for handling and recycling of them. Universal waste must be disposed of in accordance with the DTSC Universal Waste Rule (DTSC 2010). These regulations are found in the CCR Title 22, Division 4.5, Chapter 23. Universal waste, including those that contain mercury, must either be sent directly to an authorized recycling facility or to a universal waste consolidator for shipment to an authorized recycling facility. If the wastes are not to be recycled, then the waste must be managed as hazardous waste rather than as universal waste. This includes notifying DTSC, using a manifest and a registered hazardous waste hauler, complying with shorter accumulation times, and shipping only to an authorized hazardous waste disposal facility.

5.9.2.4 Local

National Pollutant Discharge Elimination System (NPDES) Permit No. CA0037869; Waste Discharge Requirements Order No. R2-2017-0016)

The operations of and discharge from the WPCF is regulated by RWQCB according to the EBDA's National Pollutant Discharge Elimination System (NPDES) permit (NPDES Permit No. CA 0037869; Waste Discharge Requirements [WDR] Order No. R2-2017-0016) (RWQCB

2017). The WDR specifies discharge prohibitions, the effluent limitations and discharge specifications, and provisions for operations, monitoring, and reporting.

Alameda County Emergency Operations Plan (EOP)

The Alameda County Sheriff's Office Of Homeland Security and Emergency Services (OHSES) adopted an Emergency Operations Plan (EOP) in 2012 (Alameda County 2012). The plan aligns with the National Incident Management System (NIMS) and the California Standardized Emergency Management System (SEMS). It facilitates multi-agency and multi-jurisdictional coordination during emergency operations, public information functions, and resource management.

The plan provides Emergency Operations Center (EOC) responders with procedures, documentation, and checklists to effectively manage emergencies, and it also provides detailed information of supplemental requirements such as public information, damage assessment, and recovery operations. The EOP does not identify specific emergency response or evacuation routes; the routes depend on the location and nature of the emergency. The EOP would apply to the Project if road closures or restrictions of major arterial roadways were to occur.

Hayward Municipal Code SEC. 3-8.19 (Hazardous Materials Management Plan)

Adopted in 1985, pursuant to California Health and Safety Code Section 25502, the City assumes the responsibility for the implementation of Chapter 6.95 of Division 20 of the California Health and Safety Code. Each applicant for a permit pursuant to this Article shall file a written plan, for City's approval, to be known as a Hazardous Materials Management Plan (HMMP), which shall demonstrate the safe storage and handling of hazardous materials. The HMMP may be amended at any time with the consent of the City. The HMMP shall be a public record except as otherwise specified. Approval of the HMMP shall mean that the HMMP has provided adequate information for the purposes of evaluating the permit approval. Such approval shall not be understood to mean that the City has made an independent determination of the adequacy of that which is described in the HMMP. The HMMP would apply to Project construction involving the use of small quantities of hazardous materials and the storage and handling of hazardous materials during operation.

City of Hayward 2040 General Plan Policies

The following policies from the City's General Plan (City of Hayward 2014) have been adopted for the purpose of reducing or avoiding impacts related to hazards and hazardous materials and are applicable to this Project:

City of Hayward 2040 Policies Relevant to Hazards and Hazardous Materials

Policy HAZ-6.1	The City shall maintain its status as a Certified Unified Program Agency and implement the City's Unified Hazardous Materials and Hazardous Waste Management Program, which includes: • Hazardous Materials Release Response Plans and Inventories (Hazardous Materials Business Plans - HMBP); • California Accidental Release Prevention (CalARP) Program; ♣ Underground Storage Tank (UST) Program; • Above-ground Petroleum Storage Act (APSA) Program, including Spill Prevention, Control, and Countermeasure (SPCC) Plans; • Hazardous Waste Generator Program;

City of Hayward 2040 Policies Relevant to Hazards and Hazardous Materials	
	• On-site Hazardous Waste Treatment (Tiered Permit) Program; and • California Fire Code Hazardous Material Management Plans (HMMP) and Hazardous Materials Inventory Statements (HMIS).
Policy HAZ-6.2	The City shall require site investigations to determine the presence of hazardous materials and/or waste contamination before discretionary project approvals are issued by the City. The City shall require appropriate measures to be taken to protect the health and safety of site users and the greater Hayward community.
Policy HAZ-6.3	The City shall direct the Fire Chief (or their designee) and the Planning Director (or their designee) to evaluate all project applications that involve hazardous materials, electronic waste, medical waste, and other hazardous waste to determine appropriate permit requirements and procedures.
Policy HAZ-6.4	The City shall review applications for commercial and industrial uses that involve the use, storage, and transport of hazardous materials to determine the need for buffer zones or setbacks to minimize risks to homes, schools, community centers, hospitals, and other sensitive uses.
Policy HAZ-6.7	The City shall coordinate with State, Federal, and local agencies to develop and promote best practices related to the use, storage, transportation, and disposal of hazardous materials.
Policy HAZ-6.8	The City shall maintain designated truck routes for the transportation of hazardous materials through the City of Hayward.
Policy HQL-7.1	The City shall support sustainability practices that promote clean water, healthy soils, and healthy ecosystems.
Policy HQL-7.2	The City shall reduce or eliminate, as feasible, the use of pesticides and herbicides that negatively impact human health on City properties, especially in parks and publicly accessible open spaces.

5.9.3 Discussion

a), b) *Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials.* **Less-than-Significant Impact**.

Construction

The Project would require the demolition of various facilities and systems at the WPCF to accommodate the proposed improvements, including the existing Administration Building, WTF, PE EQ basin, selected yard piping, selected yard electrical, and various site improvements (paving, fencing, storm drains, etc.). As discussed above in the *Environmental Setting*, the existing buildings on the Project site predate the late 1970s regulatory bans on the use of hazardous building materials, such as ACM, LBP, PCBs, and mercury. As a result, the existing development at the Project site may contain hazardous building materials. Demolition of existing structures could expose construction workers and the environment to hazardous building materials if not managed appropriately.

As described above in the *Regulatory Framework*, the testing, handling, removal, and disposal of hazardous building materials would be conducted in accordance with existing federal, State, and local regulations. Demolition activities that may disturb or require the removal of hazardous building materials are required to be inspected and/or tested for the presence of hazardous building materials. If present at concentrations above regulatory action levels, hazardous building materials must be managed and disposed of in accordance with the existing laws and regulations described in the *Regulatory*

Framework. The required compliance with the numerous laws and regulations that govern the transportation, use, handling, and disposal of hazardous building materials would reduce the potential to create hazardous conditions due to the use or accidental release of hazardous materials and would render this impact less than significant.

Construction of the Project would involve using small quantities of hazardous materials commonly used during construction activities, such as fuels, oils and lubricants, solvents and cleaners, cements and adhesives, paints and thinners, degreasers, cement and concrete, and asphalt mixtures. The routine use or an accidental spill of hazardous materials could result in inadvertent releases, which could adversely affect construction workers, the public, and the environment.

Construction activities would be required to comply with numerous hazardous materials regulations described in the *Regulatory Framework*, designed to ensure that hazardous materials would be transported, used, stored, and disposed of in a safe manner to protect worker safety, and to reduce the potential for a release of construction-related fuels or other hazardous materials into the environment, including stormwater and downstream receiving water bodies. Contractors would be required to prepare and implement HMBPs that would require that hazardous materials used for construction be used properly and stored in appropriate containers with secondary containment to contain a potential release. The California Fire Code would also require measures for the safe storage and handling of hazardous materials.

As described in more detail in *Geology and Soils*, construction contractors would be required to prepare a SWPPP for construction activities that would list the hazardous materials proposed for use during construction; describe spill prevention measures, equipment inspections, equipment and fuel storage; protocols for responding immediately to spills; and describe BMPs for controlling site runoff.

In addition, the transportation of hazardous materials would be regulated by the USDOT, Caltrans, and the CHP. Together, federal and state agencies determine driver-training requirements, load labeling procedures, and container specifications designed to minimize the risk of accidental release during transportation.

Finally, in the event of an accidental spill that could release hazardous materials at the Project site, a coordinated response would occur at the federal, state, and local levels, including the local fire department hazardous materials response team, to respond to and assess the situation, as needed.

The required compliance with the numerous laws and regulations discussed above that govern the transportation, use, handling, and disposal of hazardous materials would limit the potential for creation of hazardous conditions due to the use or accidental release of hazardous materials and would render this impact less than significant.

Operation

Storage and use of hazardous materials at the site during Project operations could result in the accidental release of small quantities of hazardous materials, which could affect people or the environment. Once construction is complete, the Preliminary and Secondary Treatment Improvements would result in an additional 48,000 gallons of chemical storage at the facility and two additional bi-weekly truck trips to provide alkalinity chemicals (sodium hydroxide) used in the BNR process. In addition, the sodium hypochlorite tank serving the 3W system will be upsized from 1,000 gallons to 2,500 gallons. However, operation and maintenance of the Project would be similar to existing conditions, including the new Administration Building and PE EQ Facility. Chemicals that would be stored on-site would be the same as the existing chemicals described above in the *Environmental Setting*. If these materials are not properly stored or handled, they could result in a spill or release.

As discussed above, in the construction-related impacts, the Project would be required to comply with numerous existing regulations that are in place to safeguard against the potential release of hazardous materials during the use, transportation, and disposal of these materials. These regulations would also be applicable during the operation of the Project. Compliance with these existing regulations would reduce the potential impacts.

For these reasons, the Project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. This impact would be less than significant.

c) *Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.* **No Impact.**

Construction and Operation

The Project site is not within 0.25 miles of an existing or proposed school. The nearest school is the California Crosspoint Academy, approximately 0.9 miles east of the Project Site. The Project would not emit hazardous emissions or handle hazardous materials within 0.25 miles of a school; as such, there would be no impact.

d) *Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 and, as a result, would it create a significant hazard to the public or the environment.* **Less than Significant with Mitigation.**

Construction

As discussed above, in the *Environmental Setting*, the Project site is listed on the Government Code Section 65962.5 hazardous materials list (Cortese List). As discussed in the *Environmental Setting*, the UST has been removed. However, the presence of residual petroleum-contaminated soil and groundwater has been confirmed , which could expose workers and the environment to hazardous materials, resulting in a significant impact. To mitigate this condition, the City shall implement Mitigation Measure HAZ-1, as described below. With the implementation of Mitigation Measure HAZ-1, the residual petroleum-contaminated soil and groundwater, if still present, will be removed, and the impact would be less than significant.

Mitigation Measure HAZ-1: Site Management Plan.

The City will require the construction contractor for the Project to develop and implement a Site Management Plan (SMP) or similar document to manage excavation of the area of possible residual petroleum-contaminated soil and groundwater. The SMP shall be prepared before construction to reduce or eliminate exposure risks to human health and the environment, specifically, potential risks associated with the presence of contaminated materials associated with the possible residual petroleum-contaminated soil and groundwater. At a minimum, the SMP shall include the following: (1) excavation procedures to determine whether the residual petroleum-contaminated soil and groundwater are still present; (2) residual petroleum-contaminated soil and groundwater removal procedures, including stockpile management and dust control; (3) proper disposal procedures of the residual petroleum-contaminated soil and groundwater and contaminated materials, if any; (4) monitoring, reporting, and regulatory oversight notifications; and (5) a health and safety plan for each contractor and subcontractor working at the site that addresses the safety and health hazards with the requirements and procedures for employee protection. The health and safety plan will also outline proper septic tank and soil handling procedures and health and safety requirements to minimize worker and public exposure to contaminated soil during construction. The SMP shall be prepared prior to approval of construction documents and provided to the City for review and approval. Measures in the SMP shall be included in approved construction plans and implemented during construction activities.

Operation

Once construction is complete, the residual petroleum-contaminated soil and groundwater, if still present, would have been removed through the SMP, and there would be no impact.

e) *For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area.* **No Impact.**

Construction and Operation

The nearest airport to the Project site is the Hayward Executive Airport (Airport), approximately 1.6 miles northeast of the Project site. The Project site is within the Airport Influence Area for the Hayward Executive Airport as delineated in the Airport's Land Use Compatibility Plan (ALUCP) (ESA 2012). Accordingly, ALUCP's noise and safety compatibility policies would apply to the Project. The applicability of ALUCP noise policies to the Project is discussed in Section 5.13, Noise, which identifies the Project site as outside of the 60 CNEL noise contour for both airports. The Project Site is in Safety Zone 7, Other Airport Environments outside Zones 1 – 6, but within the Airport Influence Area. There are no restrictions on the intensity of new non-residential activities within Safety Zone 7, and all industrial use is permitted. Water treatment within Safety Zone 7 is conditional; however, as described in Chapter 3, Project Description, the Project would operate similarly to the current conditions and would not require additional wastewater treatment. Therefore, the Project would not result in a safety hazard or excessive noise for people working in the Project area, and no impact would occur.

f) *Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.* **Less-than-Significant Impact**.

Construction and Operation

The Project would construct and operate new and improved facilities and treatment processes. However. the Project would not increase the residential population in the Project vicinity. The Project would require two additional bi-weekly truck trips to provide alkalinity chemicals (sodium hydroxide) used in the BNR process. Construction employees and delivery trucks would result in a minor increase in vehicle trips in the Project vicinity during Project construction. The Alameda County EOP does not designate specific evacuation routes to be used in the case of an emergency, as these would be coordinated by local law enforcement and emergency services (Alameda County 2012). However, the operation of the WPCF would not require road closures and would not obstruct any major arterial roadways. The Project would not interfere with an emergency response plan or emergency evacuation plan; the impact would be less than significant.

g) *Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.* **No Impact**.

Construction and Operation

As discussed above in the *Environmental Setting*, the Project site is not within a mapped fire hazard severity zone. Therefore, relative to wildland fires, there would be no impact.

5.10 Hydrology and Water Quality

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
X. HYDROLOGY AND WATER QUALITY — Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i) result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☒	☐
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
iv) impede or redirect flood flows?	☐	☐	☒	☐
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

5.10.1 Environmental Setting

5.10.1.1 Project Site

The Project site borders marshlands approximately 2.3 miles from the east shoreline of the San Francisco Bay. As discussed in Section 3.1.2, *Existing WPCF Operations*, most of the treated effluent is discharged to an offshore deep-water outfall pipeline in San Francisco Bay. Some treated water is recycled for various industrial, commercial, or landscaping uses. All stormwater collected within the WPCF boundaries is captured and routed into the WPCF treatment system. Potable water for the WPCF is provided by the City of Hayward. The Project site is in Federal Emergency Management Agency (FEMA) Zone X, defined by FEMA as an "area of minimal flood hazard" (FEMA 2021).

The Project site is within the Santa Clara Valley Groundwater Basin, East Bay Plain Subbasin, designated by the California Department of Water Resources (DWR) as a medium-priority basin for groundwater sustainability planning (DWR 2020). The groundwater sustainability agency in the Project area is the City of Hayward, which has management and regulatory responsibilities for a portion of the East Bay Plain Subbasin (City of Hayward 2023). Although the City does not use groundwater as a regular water supply, the City maintains groundwater wells that are critical to the City's ability to provide water service during an earthquake or other water supply emergency. The City is taking on responsibility for ensuring the long-term sustainable management and protection of its groundwater resources under the provisions of the Sustainable Groundwater Management Act of 2014. The groundwater depth near the Project site is estimated to be as shallow as approximately 2 feet below the ground surface, based on current groundwater level measurements collected for the Groundwater Sustainability Plan (LSCE Team 2022).

A tsunami is a series of waves generated in a body of water by a rapid seismic disturbance that vertically displaces the water. An underwater fault rupture that produces an earthquake, or underwater landslides (typically triggered by earthquakes) can cause tsunamis (City of Hayward 2014). The San Francisco tide gauge has recorded numerous tsunamis throughout its operation history, with the 1964 Alaska tsunami causing the most significant impact on the West Coast of the United States. A portion of the Project site is within the regional tsunami hazard area (CGS 2021). The inundation hazard zone extends from the drying beds at the western end of the Project area to the truck access entrance on Enterprise Avenue. Seiches are oscillation hazards associated with enclosed large bodies of water that can occur during intense wind events, atmospheric pressure changes, or earthquakes. The closest enclosed water body is the San Francisco Bay, located approximately 1 mile west of the Project site.

5.10.2 Regulatory Framework

5.10.2.1 Federal

Clean Water Act

The federal Clean Water Act (CWA) and subsequent amendments, under the enforcement authority of the U.S. Environmental Protection Agency (USEPA), was enacted "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." The purpose of the CWA is to protect and maintain the quality and integrity of the nation's waters by requiring states to develop and implement state water plans and policies. The CWA gave the USEPA the authority to implement pollution control programs such as setting wastewater standards for industry. In California, implementation and enforcement of the National Pollutant Discharge Elimination System (NPDES) program is conducted through the California State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCBs). The CWA also sets water quality standards for surface waters and established the NPDES program to protect water quality through various sections of the CWA, including Sections 401, 402, 404, and 303(d) that are implemented and regulated by the SWRCB and the nine RWQCBs. This is applicable to the Project because onsite storage and use of chemicals could pollute surface water and/or groundwater due to spills or inundation at the site if a flood occurs.

Section 402

The 1972 amendments to the Federal Water Pollution Control Act established the NPDES permit program to control discharges of pollutants from point sources (Section 402). The 1987 amendments to the CWA created a new section of the CWA devoted to stormwater permitting

(Section 402[p]). The USEPA has granted the SWRCB primacy in administering and enforcing the provisions of CWA and NPDES through the local RWQCBs. NPDES is the primary federal program that regulates point-source and non-point-source discharges to waters of the United States. The SWRCB issues both general and individual permits for discharges to surface waters, including for both point-source and non-point-source discharges. This is applicable to the Project because the Project would disturb more than 1 acre during construction.

National Pollutant Discharge Elimination System (NPDES) Permit

The NPDES permit system was established in the CWA to regulate municipal and industrial point discharges to surface waters of the U.S. Each NPDES permit for point discharges contains limits on allowable concentrations of pollutants contained in discharges. Section 402 of the CWA contains general requirements regarding NPDES permits. The CWA was amended in 1987 to require NPDES permits for non-point source (i.e., stormwater) pollutants in discharges. Stormwater sources are diffuse and originate over a wide area rather than from a definable point. The goal of NPDES stormwater regulations is to improve the quality of stormwater discharged to receiving waters to the “maximum extent practicable” through the use of structural and non-structural Best Management Practices (BMPs). BMPs can include the development and implementation of various practices including educational measures (workshops informing public of what impacts results when household chemicals are dumped into storm drains), regulatory measures (local authority of drainage facility design), public policy measures, and structural measures (filter strips, grass swales and detention ponds). The NPDES permits that apply to activities for the WPCF are described under State, Regional, and Local regulations below.

Federal Emergency Management Agency (FEMA)

Under Executive Order 11988, the FEMA is responsible for management of floodplain areas defined as the lowland and relatively flat areas adjoining inland and coastal waters subject to a one (1) percent or greater chance of flooding in any given year (the 100-year floodplain). Most of the Project site borders a 100-year floodplain, with the drying beds at the western end of the Project area within a 100-year floodplain. FEMA’s overall mission is to support citizens and first responders to ensure that the United States builds, sustains, and improves capabilities to prepare for, protect against, respond to, recover from, and mitigate all hazards. With regard to flooding, FEMA provides information, guidance, and regulation associated with flood prevention, mitigation, and response. Under Executive Order 11988, FEMA requires that local governments covered by the federal flood insurance program pass and enforce a floodplain management ordinance that specifies minimum requirements for any construction within the 100-year floodplain. Through its Flood Insurance and Mitigation Administration, FEMA manages the National Flood Insurance Program (NFIP), which includes flood insurance, floodplain management, and flood hazard mapping functions. FEMA determines flood elevations and floodplain boundaries and distributes the FIRM maps used in the NFIP. These maps identify the locations of special flood hazard areas, including 100-year floodplains.

Federal regulations governing development in a floodplain are set forth in the Code of Federal Regulations (CFR) Title 44, Part 60. Those regulations enable FEMA to require municipalities participating in the NFIP to adopt certain flood hazard reduction standards for construction and development in 100-year floodplains.

5.10.2.2 State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Division 7 of the Water Code Section 13000 et sec. “Porter-Cologne”) is the primary water quality control law in California. Porter-Cologne established the SWRCB and divided the state into nine regional basins, each overseen by a RWQCB. The nine RWQCBs have the primary responsibility for the coordination and control of water quality within their respective jurisdictional boundaries. Porter-Cologne requires the RWQCBs to establish water quality objectives while acknowledging that water quality may be changed to some degree without unreasonably affecting beneficial uses. Water quality objectives are limits or levels of water quality constituents or characteristics established for the purpose of protecting beneficial uses. Designated beneficial uses, together with the corresponding water quality objectives, also constitute water quality standards under the federal CWA. Therefore, the water quality objectives form the regulatory references for meeting state and federal requirements for water quality control. Designated beneficial uses for water bodies in the Project area are described in the Regional regulatory section below (under Water Quality Control Plan for the San Francisco Bay Basin discussion).

National Pollutant Discharge Elimination System Construction General Permit

Construction for the Project would disturb more than 1 acre of land surface, potentially affecting the quality of stormwater discharges into waters of the United States. The Project would therefore be subject to the NPDES *General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities* (Order 2022-0057-DWQ, NPDES No. CAS000002). Please see the description of this Permit in the Geology and Soils section above.

5.10.2.3 Regional and Local

Water Quality Control Plan for the San Francisco Bay Basin

The San Francisco Bay RWQCB regulates water quality in accordance with the Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan). The Basin Plan lists the beneficial uses that the San Francisco Bay RWQCB has identified for local aquifers, streams, marshes, rivers, and the San Francisco Bay, as well as the water quality objectives and criteria that must be met to protect these uses. The San Francisco Bay RWQCB implements the Basin Plan by issuing and enforcing waste discharge requirements, including permits for nonpoint sources such as the urban runoff discharged by a city’s stormwater drainage system. The Basin Plan also describes watershed management programs and water quality attainment strategies. Old Alameda Creek, the closest surface water to the Project site is listed on the CWA 303(d) list for trash. NPDES Permit No. CA0037869; Waste Discharge Requirements [WDR] Order No. R2-2017-0016).

The operations of and discharge from the WPCF is regulated by the RWQCB according to the EBDA's NPDES permit (NPDES Permit No. CA 0037869; WDR Order No. R2-2017-0016) (RWQCB 2017). The WDR specifies discharge prohibitions, the effluent limitations and discharge specifications, and provisions for operations, monitoring, and reporting.

City of Hayward Municipal Code Chapter 10, Article 8, Grading and Clearing

This chapter of the Hayward Municipal Code includes plans and policies concerning the protection of both natural and man-made environmental features when grading and clearing activities are undertaken. This article requires a permit for certain grading or clearing activities. An applicant for a grading permit must submit a site map and grading plan that describes the location and specifications for all proposed erosion and sediment control measures and the location and graphic representation of all existing and proposed drainage facilities, along with a hydrology map prepared by a Registered Civil Engineer and hydraulic calculations. Applicants may also be required to submit an Interim Erosion and Sediment Control Plan.

City of Hayward Municipal Code Chapter 11, Article 5, Stormwater Management and Urban Runoff Control

This chapter of the Hayward Municipal Code includes regulations for public utilities and infrastructure in the City of Hayward. The Article prohibits the impairment or obstruction of the natural flow of stormwaters in a channel, pipe, or storm drain system unless an encroachment permit or grading permit has been issued by the Director of Public Works. The chapter also addresses stormwater quality in accordance with the requirements of the NPDES permit (Order No. R2-2015-0049), prohibits the discharge of non-stormwater into the city's storm drain system, and requires the reduction of pollutants in stormwater discharges by implementing stormwater treatment measures for regulated projects and significant redevelopment projects.

City of Hayward 2040 General Plan Policies

Policies in the City of Hayward 2040 General Plan have been adopted for the purpose of avoiding or reducing hydrology and water quality impacts from development projects (City of Hayward 2014). Policies applicable to the Project are listed below.

City of Hayward 2040 Policies Relevant to Hydrology and Water Quality

Policy NR-6.2	The City shall prohibit groundwater withdrawals in industrial and commercial areas near the Bay shoreline which could result in saltwater intrusion into freshwater aquifers.
Policy NR-6.3	The City shall ensure that dredging and grading activities do not contribute to sedimentation of saltwater sloughs or marshes.
Policy NR-6.4	The City shall minimize grading and, where appropriate, consider requiring onsite retention and settling basins.
Policy NR-6.6	The City shall promote stormwater management techniques that minimize surface water runoff and impervious ground surfaces in public and private developments, including requiring the use of Low Impact Development (LID) techniques to best manage stormwater through conservation, onsite filtration, and water recycling.
Policy NR-6.8	The City shall continue to comply with the San Francisco Bay Region National Pollutant Discharge Elimination System (NPDES) Municipal Regional Stormwater Permit
Policy NR-6.12	The City shall encourage the installation and use of dual plumbing systems in new buildings to recycle greywater.

City of Hayward 2040 Policies Relevant to Hydrology and Water Quality	
Policy NR-6.13	The City shall coordinate with the East Bay Municipal Utility District and the Hayward Area Recreation and Park District to advance water recycling programs, including using treated wastewater to irrigate parks, golf courses, and roadway landscaping and encouraging rainwater catchment system-wide and greywater usage techniques in new buildings.
Policy NR-6.14	The City shall use native or drought-tolerant vegetation in the landscaping of all public facilities.
Policy NR-6.16	The City shall continue to implement the Bay-Friendly Water Efficient Landscape Ordinance.
Policy HQL-7.4	The City shall use green and non-toxic cleaning supplies in all public buildings, and shall encourage schools, hospitals, non-profits, and local business to use green and non-toxic cleaning supplies.
Policy HAZ-2.8	The City shall coordinate with the Hayward Area Recreation and Park District (HARD), the East Bay Regional Parks District (EBRPD), and the Alameda County Flood Control and Water Conservation District to efficiently evacuate shoreline parks during potential tsunami events.

5.10.3 Discussion

a) *Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.* **Less-than-Significant Impact**.

Construction

The Project would include demolition of various facilities and systems at the WPCF, construction of new structures, tree removal, landscaping, connection to municipal water service, stormwater conveyance, and associated appurtenances upon the Project site. As described in Chapter 3, *Project Description*, the disturbance area for the new Administration Building and Laboratory includes approximately 2.6 acres (114,000 square feet), and construction would include proposed excavations up to 5 feet deep. The disturbance area for the PE EQ Facility includes approximately 4.2 acres (184,500 square feet), and construction would include proposed excavations up to 10 feet deep. The disturbance area for the Preliminary and Secondary Treatment Improvements includes approximately 9.05 acres (394,500 square feet). The proposed excavations for the BNR facility and Final Clarifier No. 3 would be up to 35 feet deep. Construction for the grit facility would include proposed excavations up to 15 feet.

Excavation is anticipated to require groundwater dewatering, based on the groundwater depth of 2 feet near the Project site. In addition, demolition, excavation, and other soil-disturbing activities have the potential to mobilize sediment and other pollutants that could be present on the existing site. In the event of uncontrolled runoff, water quality violations could result in significant impacts.

Construction activities associated with the Project would include soil disturbance upon more than one acre of land. Therefore, coverage under the State Construction General Permit and implementation of a SWPPP would be required. The SWPPP would include specific BMPs and performance standards to control runoff associated with construction soil disturbing activities to prevent sediment and other pollutants from leaving the site and entering storm drains and water bodies. The BMPs would also include managing the use of chemicals (e.g., fuels and oils) to prevent releases.

The Project would be required to comply with regulatory requirements, which could include soil testing prior to off-hauling debris and excavated soil materials. All grading and clearing activities must comply with City Municipal Code Chapter 10, Article 8 (Grading and Clearing), to minimize potential impacts to water quality. Other specific regulatory requirements include preparing and implementing the hazardous materials management plan, spill prevention countermeasure plan, and associated compliance measures, which would be in effect during the construction of the Project. These measures would limit the release of contaminants that could otherwise adversely affect groundwater or receiving waters and impacts would be less than significant.

Operation

Following construction, the site operations would comply with the terms of the WPCF NPDES permit, which specifies the level of treatment and discharge limitations. In addition, and as discussed above in the *Environmental Setting*, all stormwater generated within the WPCF boundary is captured and routed via site drains into the WPCF treatment system. The treated effluent water is either discharged to the outfall in San Francisco Bay or recycled. A small portion of the runoff in landscaped areas immediately adjacent to Whitesell Street would be directed into the existing storm drainage system serving Whitesell Street since that area is not part of the treatment process area covered by the discharge permit. With the compliance with the NPDES WDR permit, the Project would not violate discharge requirements or otherwise compromise surface water or groundwater quality. Impacts would be less than significant.

b) *Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.* **Less-than-Significant Impact**.

Construction and Operation

A consideration of groundwater supply and recharge includes the estimated use of groundwater for the construction and operation of the Project and the overall alteration of the site's groundwater recharge capability. The Project is in the Santa Clara Groundwater Basin, East Bay Plain Subbasin, which DWR identifies as a medium-priority groundwater basin under the SGMA. The subbasin is not in a critical overdraft condition. The Project would not entail any change in land use or generate an increase in demand for groundwater resources compared to existing conditions. Therefore, the Project would not substantially decrease groundwater supplies during construction or operation.

The Project would involve removing existing pavement and placing new impervious surfaces, resulting in an estimated net increase of approximately 169,000 square feet of impervious surfaces on the Project site, which is on a 36.4-acre parcel and a 1.64-acre parcel. This condition change is relatively modest compared to the overall groundwater recharge area for the East Bay Plain Subbasin. As applicable, the Project must comply with the General Plan policies listed above, requiring consideration of groundwater-related impacts. Furthermore, the Project site is outside an identified groundwater recharge priority area, and the subbasin is currently stable concerning groundwater levels. Impacts associated with groundwater supplies and recharge would be less than significant.

c.i, ii, iii, iv) *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would (i) result in substantial erosion or siltation on- or off-site; (ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; (iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or (iv) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would impede or redirect flood flows.* **Less-than-Significant Impact**.

Construction

The construction at the Project site would alter drainage patterns and involve a net increase of impervious surface area, as noted under criterion b) above. The Project would not transform San Francisco Bay, Lower (as identified by the SWRCB as the area of San Francisco Bay south of Oakland International Airport), or other surface waters; it would alter the existing drainage patterns on the Project site by removing and replacing existing structures, and by constructing additional impervious surfaces. However, the altered drainage patterns would not cause substantial erosion or generate runoff to existing stormwater drainage facilities such that the current capacity of such facilities would be exceeded.

As the Project would involve more than one (1) acre of ground disturbance, coverage under the Construction General Permit and SWPPP would be required. The BMPs implemented as part of the SWPPP would capture runoff potentially generated during construction, effectively reducing erosion, siltation/sedimentation, and limiting runoff. Therefore, with the implementation of these regulatory controls, construction impacts would be limited and less than significant.

Operation

The design of the Project would be in accordance with the WPCF WDR permit requirements. As noted in Section 3.2.4, *Infrastructure Improvements*, stormwater runoff from the area surrounding the new Administration Building would connect to the three existing and new storm drain catch basins east of the new Administration Building and discharge into the existing facility stormwater system. Stormwater runoff from new paved areas serving the PE EQ Facility and the Preliminary and Secondary Treatment Improvements would be captured and directed to the treatment process under the existing NPDES permit.

Consequently, although the Project would alter existing drainage patterns on-site, the Project would not impede or redirect the flow of San Francisco Bay, Lower[16], or any surface water. Moreover, the Project is in a zone of minimal flood hazard. Because the Project would not impede or redirect flood flows or generate runoff conditions in a manner that would exceed the capacities of existing storm drains, the resulting impact would be less than significant.

d) *In flood hazard, tsunami, or seiche zones, risk or release of pollutants due to project inundation.* **Less-than-Significant Impact**.

Construction and Operation

As discussed in the Environment Setting, the Project site is in FEMA Zone X, an "area of minimal flood hazard." If inundation occurred at the Project site during a flood, improperly stored lubricants and oils, sodium hypochlorite, and other operation and maintenance chemicals could be released, resulting in surface water or groundwater pollution. However, as described in Section 5.9, *Hazards and Hazardous Materials*, the Project would adhere to regulatory standards for storing, handling, and transporting hazardous substances. The Project would implement specific protocols for hazardous materials management, spill response, secondary containment, and prevention would be implemented. Adherence to these regulatory controls would limit impacts to less than significant.

If a tsunami were to occur during construction or operations, a release of pollutants could arise if there is no secure storage or appropriate management of construction equipment and materials. Project construction would require the implementation of a SWPPP, which would include measures for handling and storing hazardous materials to minimize the potential for any inadvertent release. To reduce the possibility of releasing hazardous materials, the SWPPP would specify BMPs for hazardous materials storage, such as using dedicated storage areas and secure storage containers. Implementing appropriate BMPs would prevent the release of substantive quantities of pollutants. Project operations would require compliance with the existing NPDES WDR permit. Nonetheless, a tsunami could cause a release of hazardous materials.

The historical record of tsunami waves along the San Francisco coast, with approximately 71 events occurring since 1854 and none causing notable damage since 1964, suggests that the likelihood of occurrence is low. Moreover, existing warning systems allow for early detection and public alert of tsunami events from faraway sources. These systems can provide advance notice, which, depending on the time available, would allow construction workers to evacuate and remove hazardous materials and heavy equipment from the inundation zone. Therefore, despite the Project site being within a tsunami inundation hazard area, with the implementation of a SWPPP with hazardous materials storage requirements, compliance with the NPDES WDR permit and

16 Identified as San Francisco Bay, Lower by the SWRCB as the area of San Francisco Bay south of Oakland International Airport.

local General Plan policies listed above, and considering the low probability of a tsunami occurring during the construction period and tsunami warning systems, the risk of pollutant release due to inundation by tsunami waves is considered less than significant.

As discussed above in the *Environmental Setting*, the Project site is not located close enough to a large water body that would be susceptible to a seiche.

Concerning the Project site location and the implementation of regulatory controls during construction and operation, the overall risk for release of contaminants in the event of flooding would be less than significant.

e) *Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.* **Less-than-Significant Impact**.

Construction and Operation

As discussed under question a) above, the Project would adhere to the Construction General Permit and NPDES WDR permit regulatory controls during construction, operation, and maintenance. With adherence to the BMPs in the SWPPP designed to limit runoff during construction and the required implementation of a site-specific stormwater management plan and other measures required for regulated projects, water quality impacts would be limited. Long-term maintenance of the Project site would include keeping the site clean and free of debris, reducing the risk of litter (trash inputs), and preventing toxic contamination of surface and groundwater or other water quality exceedances. Finally, the Project would continue to produce recycled water, which would be consistent with the goals of the Basin Plan.

Similarly, as described in question b) above, the Project would not deplete groundwater resources and would not appreciably increase impervious surface area such that the groundwater recharge capacity of the basin would be altered. The Project is generally in conformance with sustainable groundwater management and would not conflict with or obstruct the implementation of the Santa Clara Basin Groundwater Management Plan. Impacts under this criterion would be less than significant.

5.11 Land Use and Planning

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
XI. LAND USE AND PLANNING — Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

5.11.1 Environmental Setting

The Project is located within an area of commercial, industrial, and open space uses. The Project site is a flat, irregularly shaped lot surrounded by fencing and landscaping. The site's General Plan Land Use designation is the Industrial Technology and Innovation Corridor (IC). The Zoning for the Project site is General Industrial (IG).

5.11.2 Regulatory Framework

5.11.2.1 Local

City of Hayward Municipal Code Section 10-1 – Zoning Ordinance

The City of Hayward Zoning Ordinance intends to promote public health, safety, and general welfare and preserve and enhance the aesthetic quality of the City by providing regulations to ensure an appropriate mix of land uses in an orderly manner. The City of Hayward Zoning Ordinance contains regulations for each zoning district in the City and new developments proposed to occur within the City, including regulations governing the location, height, and size of buildings and structures hereafter erected, enlarged, or altered, and to regulate and determine the area, depth, and width of yards, setback areas, and other open spaces.

City of Hayward 2040 General Plan Policies

Policies in the City of Hayward 2040 General Plan have been adopted to avoid or mitigate land use impacts from development projects (City of Hayward 2014). Policies applicable to the Project are listed below.

City of Hayward 2040 Policies Relevant to Land Use	
Policy LU-1.7	The City shall maintain and implement commercial, residential, industrial, and hillside design guidelines to ensure that future development complies with General Plan goals and policies.
Policy LU-1.8	The City shall maintain and implement green building and landscaping requirements for private and public-sector development to: • Reduce the use of energy, water, and natural resources. • Minimize the long-term maintenance and utility expenses of infrastructure, buildings, and properties. • Create healthy indoor environments to promote the health and productivity of residents, workers, and visitors. • Encourage the use of durable, sustainably sourced, and/or recycled building materials. • Reduce landfill waste by promoting practices that reduce, reuse, and recycle solid waste.
Policy LU-4.9	Locate and design utilities to avoid or minimize impacts to environmentally sensitive areas and habitats.
Policy LU-6.6	The City shall encourage property owners to upgrade existing buildings, site facilities, and landscaped areas to improve the economic viability of properties and to enhance the visual character of the Industrial Technology and Innovation Corridor.
Policy LU-9.1	The City shall ensure that all City-owned facilities are designed to be compatible in scale, mass, and character with the neighborhood, district, or corridor in which they are located.
Policy PFS-1.5	The City shall ensure that public facilities, such as utility substations, water storage and treatment plants, and pumping stations are located, designed, and maintained so that noise, light, glare, or odors associated with these facilities will not adversely affect nearby land uses. The City shall require these facilities to use building and landscaping materials that are compatible with or screen them from neighboring properties.

5.11.3 Discussion

a) *Would the Project physically divide an established community?* **No Impact.**

Construction and Operation

The Project would be built entirely within the confines of the existing WPCF property line boundary, and it would not impede movement across public rights-of-way. The Project is proposed on a developed site surrounded by commercial, industrial, and open space uses. Following construction, the Project would not include any physical barriers or obstacles to circulation restricting existing movement patterns between the Project site and the surrounding uses. Therefore, the development at the Project site would not physically divide an established community, and there would be no impact.

b) *Would the Project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?* **No Impact.**

Construction and Operation

The General Plan land use designation of the Project site is IC, a category typically used to designate a variety of warehouses, office buildings, research and development facilities, manufacturing plants, business parks, and corporate campus buildings (City of Hayward 2014). The Project intends to support the City's wastewater treatment plant activities. Therefore, Project construction and operation would not conflict with the

City's land use management policies, plans, or regulations adopted to avoid or mitigate an environmental effect. The Project would not cause a significant environmental impact due to a conflict with any other land use plan, policy, or regulation adopted to avoid or mitigate an environmental effect. For these reasons, there would be no impact.

5.12 Mineral Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
XII. MINERAL RESOURCES — Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒

5.12.1 Environmental Setting

Under the Surface Mining and Reclamation Act of 1975 (SMARA), the State Mining and Geology Board has designated the La Vista Quarry area as the only site in Hayward containing mineral deposits of regional significance for aggregate (City of Hayward 2014). The La Vista Quarry area is located approximately 8.5 miles east of the Project site. There are no mineral resources in the Project area. Neither the State Geologist nor the State Mining and Geology Board has classified any other areas in Hayward as containing mineral deposits that are of statewide significance or for which the significance requires further evaluation. Besides the La Vista Quarry area cited above, Hayward does not have mineral deposits subject to SMARA.

5.12.2 Discussion

a, b) *Would the Project 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? Would the Project 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?* **No Impact**.

Construction and Operation

As described above in Setting, the La Vista Quarry area is the only designated mineral resource recovery site in Hayward, and is approximately 8.5 miles from the Project site. Given this distance from the Project site, construction of the Project would not result in the loss of availability of known mineral resources classified as having regional or statewide significance and would not result in the loss of availability of a locally-important mineral resource recovery site, and there would be no impact.

5.13 Noise

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

5.13.1 Environmental Setting

Sound is mechanical energy transmitted by pressure waves through a medium such as air. Noise can be defined as unwanted sound. Sound is characterized by various parameters that include the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). In particular, the sound pressure level has become the most common descriptor used to characterize the loudness of an ambient sound level. Sound pressure level is measured in decibels (dB), with 0 dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain.

The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. As a consequence, during assessments of potential noise impacts, sound is measured using an electronic filter that deemphasizes the frequencies below 1,000 Hertz[17] and above 5,000 Hertz in a manner corresponding to the human ear's decreased sensitivity to low and extremely high frequencies instead of the frequency mid-range. This method of frequency weighting is referred to as *A-weighting* and is expressed in units of A-weighted decibels (dBA).[18]

5.13.1.1 Effects of Noise on People

The effects of noise on people fall into three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction.
- Interference with activities such as speech, sleep, and learning.
- Physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers in industrial plants generally experience noise in the last category. There is no completely satisfactory way to

[17] Hertz is a unit of frequency equivalent to one cycle per second.
[18] All noise levels reported herein reflect A-weighted decibels unless otherwise stated.

measure the subjective effects of noise, or the corresponding reactions of annoyance and dissatisfaction. A wide variation exists in individual thresholds of annoyance; different tolerances to noise tend to develop based on individuals' past experiences with noise.

Thus, an important way to predict a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called "ambient noise" level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it. With regard to increases in A-weighted noise levels, the following relationships occur:

- In carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived.
- Outside of the laboratory, a 3 dBA change is considered a just-perceivable difference when the change in noise is perceived but does not cause a human response.
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected.
- A 10 dBA change is subjectively heard as approximately a doubling in loudness and can cause adverse response.

The human ear perceives sound in a nonlinear fashion; hence, the decibel scale was developed. Because the decibel scale is nonlinear, two noise sources do not combine in a simple additive fashion, rather logarithmically. For example, if two identical noise sources produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA.

5.13.1.2 Noise Attenuation

Stationary "point" sources of noise, including stationary mobile sources such as idling vehicles, attenuate (lessen) at a rate of 6 to 7.5 dBA per doubling of distance from the source, depending on environmental conditions (e.g., atmospheric conditions and noise barriers, either vegetative or manufactured). Widely distributed noises, such as a large industrial facility spread over many acres or a street with moving vehicles (a "line" source), would typically attenuate at a lower rate, approximately 3 to 4.5 dBA per doubling of distance from the source (also depending on environmental conditions) (Caltrans 2013). Noise from large construction sites would have characteristics of both point and line sources, so attenuation would generally range between 4.5 and 7.5 dBA per doubling of distance.

5.13.1.3 Vibration

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Several different methods are used to quantify vibration (FTA 2018):

- *Peak particle velocity* (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings.
- The *root mean square* (RMS) amplitude is most frequently used to describe the effect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal.

- Decibel notation, expressed as *vibration decibels* (VdB), is commonly used to measure RMS. The decibel notation acts to compress the range of numbers required to describe vibration.

Typically, groundborne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration.

5.13.1.4 Existing Ambient Noise Environment

The noise environment in the area surrounding the Project site is characterized by industrial land uses including distribution warehouses, a power plant, and a solid waste transfer station. Consequently, the noise environment is dominated by heavy duty truck operations on local roadways and stationary noise sources associated with the existing WPCF, the power plant, and solid waste transfer station on Enterprise Avenue. Noise modeling for arterial roadways conducted for the City of Hayward General Plan Noise Element indicates that the roadside noise levels along Clawiter Road, approximately 0.5 miles east of the Project site, are approximately 69 dBA from traffic noise sources, while roadside noise levels along Industrial Boulevard at Depot Road, approximately 0.7 miles northeast of the Project site, adjacent to the nearest noise-sensitive receptor are approximately 71 dBA.

5.13.1.5 Sensitive Receptors

Human response to noise varies considerably from one individual to another. Effects of noise at various levels can include interference with sleep, concentration, and communication; physiological and psychological stress; and hearing loss. Given these effects, some land uses are considered more sensitive to ambient noise levels than others. In general, residences, schools, hotels, hospitals, and nursing homes are considered to be the most sensitive to noise. Commercial and industrial uses are considered the least noise-sensitive. The closest sensitive receptor to the Project site includes the Hayward Navigation Center (transitional housing) approximately 720 feet north of the WPCF and residential apartments (The Dutton) located approximately 0.8 miles to the east.

5.13.2 Regulatory Setting

5.13.2.1 Federal

Federal Transit Administration (FTA)

The FTA is the federal agency that has published a guidance document for assessing operational and construction noise and vibration impact assessment Transit Noise and Vibration Impact Assessment methodology for general assessment of construction noise. This guidance contains methodology reference noise levels for construction equipment and criteria for assessing construction related noise and vibration impacts. With respect to construction noise, this guidance entails a process for calculating the hourly dBA, L_{eq} for each stage of construction considering (1) the reference noise emission level at 50 feet for equipment to be used for each stage of construction, (2) the usage factor for each piece of equipment, and (3) the distance between construction centerline and receptors. The General Assessment Methodology entails determining the resultant noise levels for the two noisiest pieces of equipment expected to be used in each stage of construction.

5.13.2.2 Local

City of Hayward 2040 General Plan

The City of Hayward's 2040 General Plan Policy Document outlines the City's goals to address noise generated within the City with the overriding goal to minimize human exposure to excessive noise and ground vibration. The following Policies are relevant to the Project:

City of Hayward 2040 Policies Relevant to Noise

Policy Haz 8.3: Incremental Noise Impacts of Commercial and Industrial Development:	The City shall consider the potential noise impacts of commercial and industrial developments that are located near residences and shall require noise mitigation measures as a condition of project approval.
Policy Haz 8.13: Utilities	The City shall require the evaluation of public facilities (e.g., utility substations, water storage facilities, and pumping stations) to determine potential noise impacts on surrounding uses and identify appropriate mitigation measures.
Policy Haz 8.20: Construction Noise Study	The City may require development projects subject to discretionary approval to assess potential construction noise impacts on nearby sensitive uses and to minimize impacts on those uses, to the extent feasible.
Policy Haz 8.21: Construction and Maintenance Noise Limits	The City shall limit the hours of construction and maintenance activities to the less sensitive hours of the day (7:00am to 7:00pm Monday through Saturday and 10:00am to 6:00 pm on Sundays and holidays).
Policy Haz 8.22	The City shall require a vibration impact assessment for proposed projects in which heavy- duty construction equipment would be used (e.g., pile driving, bulldozing) within 200 feet of an existing structure or sensitive receptor. If applicable, the City shall require all feasible mitigation measures to be implemented to ensure that no damage or disturbance to structures or sensitive receptors would occur.

City of Hayward Municipal Code

The City of Hayward's Municipal Code Section 4-1.01 through 4-1.04 address noise generation within the City. Specifically, Section 4-1.03.1 (b) sets noise limits for commercial and industrial properties. Except for commercial and industrial property abutting residential property, no person shall produce or allow to be produced by human voice, machine, device, or any other combination of same, on commercial or industrial property, a noise level at any point outside of the property plane that exceeds 70 dBA.

Additionally, Section 4-1.03.4 addresses construction noise. Unless otherwise provided pursuant to a duly-issued permit or a condition of approval of a land use entitlement, the construction, alteration, or repair of structures and any landscaping activities, occurring between the hours of 10 a.m. and 6 p.m. on Sundays and holidays, and 7 a.m. and 7 p.m. on other days, shall be subject to the following:

- No individual device or piece of equipment shall produce a noise level exceeding 83 dBA at a distance of 25 feet from the source. If the device or equipment is housed within a structure on the property, the measurement shall be made outside the structure at a distance as close as possible to 25 feet from the equipment; and
- The noise level at any point outside of the property plane shall not exceed 86 dBA.

However, Section 4-1.03.1(c) provides an exemption for noise generating activities of the City of Hayward.

With regard to vibration, Section 10-1.1607(L) addresses performance standards applicable to industrial properties and requires that no vibration shall be produced that is transmitted through the ground and is discernible without the aid of instruments by a reasonable person at the lot lines of the site. Vibrations from temporary construction, demolition, and vehicles that enter and leave the subject parcel (e.g., construction equipment, trains, trucks, etc.) are exempt from this standard. Because the Project is located with the City, it would be subject to the noise limits set forth in the municipal code.

5.13.3 Discussion

a) *Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?* **Less-than-Significant Impact** .

Construction

The Project would result in three separate construction phases that would overlap. Construction of the Administration Building would commence in January of 2025 and take 2 years to complete. Construction of the PE EQ Facility would commence in October of 2025 and take 2 years to complete. Construction of the Preliminary and Secondary Treatment Improvements would commence in October of 2025 and take 4.5 years to complete. Consequently, construction of all three components would occur simultaneously starting in October of 2025 and occur simultaneously for 15-months which would be the period of greatest construction activity.

The noisiest construction activities are typically associated with demolition and grading activities. However, construction of the of the PE EQ tanks, BNR tanks, final clarifier, and grit facility would require installation of a deep pile foundation which may involve impact pile driving.

Table 5.13-2 shows typical noise levels produced by various types of construction equipment that would typically be used for the Project construction that would occur at reference distances of 25 feet and 50 feet (reference distance) from the source. Noise levels at and near the construction site would fluctuate depending on the particular type, number, and duration of uses of various pieces of construction equipment at any given time. As can be seen from the data in Table 5.13-2, most standard construction equipment operates at a noise level greater than 83 dBA at 25 feet.

TABLE 5.13-2
TYPICAL NOISE LEVELS FROM CONSTRUCTION EQUIPMENT

Construction Equipment	Noise Level (dBA, L_{max} at 25 feet)	Noise Level (dBA, L_{max} at 50 feet)
Dump Truck	83	77
Concrete Saw	96	90
Crane	87	81
Forklift (Gradall)	89	83
Front End Loader	86	80
Grader	91	85
Scraper	90	84
Excavator	87	81
Diesel Generator	87	81
Dozer	88	82
Tractor	90	84
Backhoe	84	78
Auger Drill Rig	90	84
Pumps	87	81
Concrete Pumper	87	81
Concrete Truck	85	79
Compactor	89	83
Off-Highway Truck	91	85
Impact Pile Driver	107	101

SOURCE: FTA 2018.

The FTA methodology for general assessment of construction noise entails a process for calculating the hourly dBA, L_{eq} for each stage of construction considering (1) the reference noise emission level at 50 feet for equipment to be used for each stage of construction, (2) the usage factor for each piece of equipment, and (3) the distance between construction centerline and receptors. This methodology entails determining the resultant noise levels for the two noisiest pieces of equipment expected to be used in each stage of construction.

The total increase in noise from the concurrent/overlapping operation of several pieces of equipment was calculated for major construction phases of the Project. The Roadway Construction Noise Model (RCNM) was used to estimate noise generated by the proposed construction activities.

Table 5.13-3 presents the results of the RCNM modelling of construction showing the predicted noise levels at the nearest property line of the nearest off-site land use for each Project element. Predicted noise values in Table 5.13-3 represent a worst-case analysis when the two noisiest pieces of equipment are in operation at the point of the

TABLE 5.13-3
DAYTIME NOISE LEVELS FROM CONSTRUCTION

Representative Receptor	Existing Daytime Noise Level (dBA, L_{eq})	Loudest Two Noise Sources	Reference Noise Level (dBA)[a]	Distance to Property Plane[b] (feet)	Usage Factor	Adjusted L_{eq} Level at Property Plane (dBA)[c]	Exceed 86 dBA L_{eq} Daytime Standard?	Distance to receptor (feet)	Noise Level at Nearest Noise-Sensitive Receptor (dBA)
Administration Building Demolition Phase									
The Dutton Apartments	—	Concrete saw	90	205	20%	69	No	2,200	50
The Dutton Apartments	—	Dozer	85	205	40%	64	No	2,200	45
The Dutton Apartments	*71*	*Combined Total*	*NA*	*205*	*NA*	*70*	*No*	*2,200*	*51*
Hayward Navigation Center	—	Concrete saw	90	205	20%	69	No	1,300	*54*
Hayward Navigation Center	—	Dozer	85	205	40%	64	No	1,300	49
Hayward Navigation Center	*71*	*Combined Total*	*NA*	*205*	*NA*	*70*	*No*	1,300	*56*
PE EQ Demolition Phase									
The Dutton Apartments	—	Concrete saw	90	75	20%	79	No	2,200	50
The Dutton Apartments	—	Dozer	85	75	40%	74	No	2,200	45
The Dutton Apartments	*71*	*Combined Total*	*NA*	*75*	*NA*	*80*	*No*	2,200	*51*
Hayward Navigation Center	—	Concrete saw	90	75	20%	79	No	1,520	52
Hayward Navigation Center	—	Dozer	85	75	40%	74	No	1,520	48
Hayward Navigation Center	*71*	*Combined Total*	*NA*	*75*	*NA*	*80*	*No*	1,520	*54*
PE EQ Foundation Construction Phase									
The Dutton Apartments	—	Pile Driver	101	75	20%	91	Yes	2,200	61
The Dutton Apartments	—	Loader	79	75	40%	72	No	2,200	42
The Dutton Apartments	*71*	*Combined Total*	*NA*	*75*	*NA*	*91*	*Yes*	2,200	*50*
Hayward Navigation Center	—	Pile Driver	101	75	20%	91	Yes	1,520	65
Hayward Navigation Center	—	Loader	79	75	40%	72	No	1,520	46

Representative Receptor	Existing Daytime Noise Level (dBA, L_{eq})	Loudest Two Noise Sources	Reference Noise Level (dBA)[a]	Distance to Property Plane[b] (feet)	Usage Factor	Adjusted L_{eq} Level at Property Plane (dBA)[c]	Exceed 86 dBA L_{eq} Daytime Standard?	Distance to receptor (feet)	Noise Level at Nearest Noise-Sensitive Receptor (dBA)
Hayward Navigation Center	*71*	*Combined Total*	*NA*	*75*	*NA*	*91*	*Yes*	1,520	*65*
Preliminary and Secondary Treatment Improvements Pile Driving (BNR tanks, final clarifier, and grit facility)									
The Dutton Apartments	—	Pile Driver	101	75	20%	91	No	2,200	61
The Dutton Apartments	—	Loader	79	75	40%	72	No	2,200	42
The Dutton Apartments	*71*	*Combined Total*	*NA*	75	*NA*	*91*	*No*	2,200	*62*
Hayward Navigation Center	—	Pile Driver	101	75	20%	91	No	1,520	65
Hayward Navigation Center	—	Loader	79	75	40%	72	No	1,520	46
Hayward Navigation Center	*71*	*Combined Total*	*NA*	75	*NA*	*91*	*No*	1,520	*65*

NOTES:

a. L_{max} at 50 feet

b. Distance between approximate location of equipment and WPCF property line.

c. The L_{eq} level is adjusted for distance to the property plane of the source and percentage of usage.

construction site closest to the nearest property line, as this would occur only for a short percentage of the overall construction period. As can be seen in Table 5.13-3, noise levels generated during construction activities at the property line would be below the 86 dBA noise standard for construction for all phases except for pile driving for the PE EQ tanks, BNR tanks, final clarifier, and grit facility. It is noted, however, that Section 4-1.03.1(c) provides an exemption for noise generating activities of the City of Hayward.

This table also shows the noise level at the nearest noise-sensitive receptors: The Dutton Apartments, approximately 0.8 miles (2,200 feet) to the east of the Project site and the Hayward Navigation Center, approximately 720 feet to the north of the Project site and proposed trenching and paving work areas. Construction noise would be attenuated by distance to well below existing daytime traffic noise levels of 69 dBA, and would therefore not generate a substantial temporary increase in ambient noise levels in excess of standards.

Although pile driving activities may occasionally exceed the 86 dBA noise standard at the property line for construction, because (a) Section 4-1.03.1(c) provides an exemption for noise generating activities of the City of Hayward and (b) these activities would not result in a substantial temporary increase in ambient noise levels at the nearest noise-sensitive receptors, these occasional noise increases at the industrial property line would be considered a less than significant impact.

Operation

Noise-generating stationary sources of the Project include a new primary effluent pump station at an existing facility 80 feet north of the property line along Enterprise Avenue and four new blowers to be located within a new masonry building also approximately 80 feet north of the property line along Enterprise Avenue. While there would be a new 25 horsepower fan installed for odor handling at the new Grit Removal Facility, this fan would generate a modest noise level of 70 dBA or less and would be replacing several existing fans of greater horsepower.

The City of Hayward's Municipal Code Section 4-1.03.1(b) sets noise limits for commercial and industrial properties. Because there are no residential properties abutting the Project site, the applicable noise standard prohibits a noise level at any point outside of the property line that exceeds 70 dBA by a machine, device, or any combination of same, on commercial or industrial property.

A typical aeration blower generates a noise level of 90 dBA at 10 feet (MBA 2008). At a distance of 80 feet and assuming 20 dBA of noise reduction from the masonry building structure, noise from five blowers operating simultaneously would be reduced to 59 dBA, well below the 70 dBA noise standard at the property line.

New pumps for the new primary effluent pump station would be submersible and would generate a modest noise level of approximately 56 dBA at 30 feet (ESA 2019). The pumps would be located within an existing structure that would conservatively offer

20 dBA of attenuation. Assuming simultaneous operation of two pumps, the pump station would generate a noise level of 36 dBA at the property line well below the 70 dBA noise standard.

With respect to noise impacts at the nearest noise-sensitive receptor (The Dutton Apartments), located approximately 0.8 miles (2,200 feet) to the east of the Project site, attenuation with distance would reduce the operational noise to below 30 dBA. This noise level contribution would not be noticeable to the nearest residential receptors and the impact would be less than significant both in terms of consistency with the noise ordinance and effects on noise-sensitive receptors.

b) *Generation of excessive groundborne vibration or groundborne noise levels?* **Less-than-Significant Impact**.

Construction

With regard to vibration, Section 10-1.1607(L) of the City's municipal code addresses performance standards applicable to industrial properties and requires that no vibration shall be produced that is transmitted through the ground and is discernible without the aid of instruments by a reasonable person at the lot lines of the site. However, vibrations from temporary construction, demolition, and vehicles that enter and leave the subject parcel (e.g., construction equipment, trains, trucks, etc.) are exempt from this standard.

For adverse human reaction, the analysis applies the "strongly perceptible" threshold of 0.9 inch per second (in/sec) PPV for transient sources. For risk of architectural damage to historic buildings and structures, the analysis applies a threshold of 0.3 in/sec PPV to assess damage risk for all standard buildings. There are no historic structures in the vicinity of the Project site that could be adversely affected by vibration related to Project construction.

Construction of the Project would involve the use of pile drivers, drill rigs, excavators, graders, cranes, loaders, and tractors. The use of a pile driver would be expected to generate the highest vibration levels during construction. Vibration levels of pile drivers are typically 0.65 in/sec PPV at 25 feet (FTA 2018). Under typical propagation conditions, vibration levels at 125 feet (the nearest off-site structure) would be approximately 0.058 in/sec PPV, which is well below the FTA's criteria of 0.30 in/sec PPV for building damage. Therefore, this impact would be less than significant.

Operation

Operation of the Project would not include any activities that would generate significant levels of vibration. Therefore, it is not anticipated that Project operation would expose the nearest sensitive receptor or structure to vibration levels that would result in annoyance.

c) *For a project located within the vicinity of a private airstrip or 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 expose people residing or working in the project area to excessive noise levels?* **No Impact**.

Construction and Operation

The Hayward Executive Airport is located approximately 1.6 miles northeast of the Project site. Additionally, Oakland International Airport is located 6.4 miles north of the Project site. The Airport Land Use Compatibility Plan for Hayward Executive Airport indicates that the Project site is outside of the 60 CNEL noise contour for both airports (ESA 2012). Therefore, the Project would not expose people working in the Project area to excessive noise levels, and no impact would occur.

5.14 Population and Housing

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
XIV. POPULATION AND HOUSING — Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

5.14.1 Environmental Setting

Based on the Department of Finance information, the City of Hayward's population was estimated to be 159,800 in January 2023 (DOF 2023). As of November 2023, employment in the City was approximately 72,700 (EDD 2023).

A project can induce substantial population growth by 1) proposing new housing beyond projected or planned development levels, 2) generating demand for housing as a result of new businesses, 3) extending roads or other infrastructure to previously undeveloped areas, or 4) removing obstacles to population growth (e.g., expanding capacity of a wastewater treatment plant beyond that necessary to serve planned growth).

5.14.2 Regulatory Setting

5.14.2.1 Local

City of Hayward 2040 General Plan Policies

Policies in the City of Hayward 2040 General Plan have been adopted to avoid or mitigate population and housing impacts from development projects (City of Hayward 2014). Policies applicable to the Project are listed below.

City of Hayward 2040 Policies Relevant to Population and Housing

Policy LU-1.7	The City shall maintain and implement commercial, residential, industrial, and hillside design guidelines to ensure that future development complies with General Plan goals and policies.
Policy HQL-7.5	The City shall avoid locating new sensitive uses such as schools, childcare centers, and senior housing, to the extent feasible, in proximity to sources of pollution, odors, or near existing businesses that handle toxic materials. Where such uses are located in proximity to sources of air pollution, odors, or toxic materials, the City shall encourage building design, construction safeguards, and technological techniques to mitigate the negative impacts of hazardous materials and/or air pollution on indoor air quality
Policy NR-2.18	The City shall require development projects to implement all applicable best management practices that will reduce exposure of new sensitive receptors (e.g., hospitals, schools, daycare facilities, elderly housing, and convalescent facilities) to odors, toxic air contaminants (TAC) and fine particulate matter (PM2.5).

5.14.3 Discussion

a) *Would the Project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?* **No Impact**.

Construction and Operation

The Project would construct new and improved facilities and treatment processes. The operation of the new Administration Building would be similar to existing conditions and would accommodate up to twelve new workers. The new Administration Building would provide a workspace for administrative, engineering, and laboratory staff and a workspace for operations, maintenance, and inspection staff, like existing operations. Up to twelve new workers would be needed to operate the new Project components. No housing is proposed as part of the Project. The Project would not create any new housing or businesses and would not extend any roads or infrastructure. Further, the Project would account for increased flows and loads to the WPCF due to projected population growth through 2048. While the WPCF would serve more people, the wastewater volume would not exceed the WPCF's rated capacity. As a result, the Project would not result in direct or indirect unplanned growth. There would be no impact.

b) *Would the Project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?* **No Impact**.

Construction and Operation

The Project site does not contain any residential structures. Therefore, the Project would not demolish or otherwise remove any existing housing units or necessitate the construction of replacement housing elsewhere. There would be no impact.

5.15 Public Services

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
XV. PUBLIC SERVICES —				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:				
i) Fire protection?	☐	☐	☐	☒
ii) Police protection?	☐	☐	☐	☒
iii) Schools?	☐	☐	☐	☒
iv) Parks?	☐	☐	☐	☒
v) Other public facilities?	☐	☐	☐	☒

5.15.1 Environmental Setting

The HFD responds to all fires, hazardous materials spills, and medical emergencies within the City (City of Hayward 2023). Police protection services are provided to the Project site by the Hayward Police Department (HPD). The Hayward Area Recreation and Park District (HARD) operates the City's regional and neighborhood parks. The East Bay Regional Parks District, spanning Alameda and Contra Costa counties, is a sprawling network of parklands (East Bay Regional Park District 2024). Industrial uses bound the Project site to the north, south, and east, and open space uses to the west bordering the East Bay Regional Park District lands and the marsh. The Project site is within the Hayward Unified School District, which serves over 19,000 students (HUSD 2023). The Hayward Public Library Department serves the City of Hayward.

5.15.2 Regulatory Framework

5.15.2.1 Local

City of Hayward 2040 General Plan Policies

The City of Hayward 2040 General Plan policies have been adopted to avoid or mitigate public service impacts from development projects (City of Hayward 2014). Policies applicable to the Project are listed below.

City of Hayward 2040 Policies Relevant to Public Services	
Policy HQL-5.3	The City shall promote urban design principles that support active use of public spaces in neighborhoods, commercial areas, and employment centers at all times of day. Active use of public spaces provides “eyes-on-the-street” to enhance public safety in these areas.
Policy HQL-5.4	The City shall improve safety and the perception of safety by requiring adequate lighting, street visibility, and defensible spaces within new development projects.
Policy M-4.3	The City shall develop a roadway system that is redundant (i.e., includes multiple alternative routes) to the extent feasible to ensure mobility in the event of emergencies.
Policy CS-3.4	The City shall require new development projects to have adequate water supplies to meet the fire suppression needs of the project without compromising existing fire suppression services to existing uses.

5.15.3 Discussion

a.i–v) *Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services: fire protection, police protection, schools, parks, other public facilities?* **No Impact**.

Construction and Operation

The Project would construct new and improved wastewater treatment facilities and processes but would not intensify the use of the Project site or generate additional occupants in the area. The Project would not significantly increase employment within the City or result in the construction of residential uses. The Project would not increase the demand for fire or police protection services. The construction of the new facilities and site improvements would not result in additional residential development, which would generate new school-aged children in the Hayward Unified School District schools such that new school facilities would be required. Additionally, the Project would not result in the increased use of existing parks, libraries, or other public facilities such that expansion of these facilities within the City would be required. Therefore, the Project would result in no impact to these public services.

5.16 Recreation

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
XVI. RECREATION —				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

5.16.1 Environmental Setting

Industrial uses bound the Project site to the north, south, and east, and open space uses to the west bordering the East Bay Regional Park District lands and the marsh. Park and recreation facilities near the Project site include Rancho Arroyo Park, located approximately 1.6 miles east of the Project site, and the Hayward Shoreline Interpretive Center, located approximately 1.6 miles south of the Project site. San Francisco Bay Trail is located approximately 1.4 miles to the south, at its nearest point. There is no direct access between Rancho Arroyo Park, the Hayward Shoreline Interpretive Center, and the Project site. In addition, the Project site is not publicly accessible and is limited to use by City staff.

5.16.2 Discussion

a, b) *Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?* **No Impact**.

Construction and Operation

The Project would construct new and improved wastewater treatment facilities at the Project site. As discussed in Section 5.14, *Population and Housing*, the Project would not significantly increase employment within the City. The Project would also not result in the construction of residential uses. As such, the Project would not result in the increased use of existing parks such that substantial physical deterioration of the facility would occur or be accelerated, nor would it result in the need for expansion of parks and recreation facilities within the City, nor would it directly impact the bordering East Bay Regional Park District lands and the marsh, nor the nearby Rancho Arroyo Park, Hayward Shoreline Interpretive Center, and San Francisco Bay Trail. Therefore, there would be no impact on recreation-related facilities.

5.17 Transportation

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
XVII. TRANSPORTATION — Would the project:				
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	☐	☐	☐	☒
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☐	☒
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d) Result in inadequate emergency access?	☐	☐	☒	☐

5.17.1 Environmental Setting

5.17.1.1 Roadway Network and Site Access

The Project site is located entirely within the City and bounded by two-lane local roads with Depot Road to the north and Enterprise Avenue to the south, both with a posted speed limit of 25 miles per hour (mph). Access to the Project site is through the existing main WPCF access gate from Whitesell Street. Whitesell Street is also a two-lane local road with a posted speed limit of 30 mph that intersects the Project area.

The nearest highway to the Project site is Highway 92, which is approximately ½ mile south, near the eastern shoreline of the San Francisco Bay. Highway 92 (also known as State Route 92) is an approximately 28-mile east–west corridor that extends from the City to the coast of the Pacific Ocean at Half Moon Bay. The posted speed limit varies between 55 to 65 mph throughout Highway 92.

5.17.1.2 Public Transit, Bicycle, and Pedestrian Facilities

The Alameda-Contra Costa Transit District provides an all-day east–west bus route, Line 86 Winton – Industrial – Tennyson, that traverses along Depot Road approximately 0.3 miles north from the northern end of the Project site. There are no public transit stops along Whitesell Street adjacent to the Project site. The Capitol Corridor Amtrak Station is located approximately 4.7 miles northeast of the Project site, and the Hayward Bay Area Rapid Transit (BART) Station is located approximately 5.5 miles northeast of the Project site.

The nearest bicycle facility intersects the Project site and is a Class II Bicycle Lane[19] that traverses north–south through Whitesell Street. There is a Class III Bicycle Route[20]

19 Class II Bicycle Lanes are on-street bikeways that provide a designated right-of-way for the exclusive or semi-exclusive use of bicycles.

20 Class III Bicycle Routes provide a right-of-way designated by signs or permanent markings and shared with motorists.

approximately 0.2 miles north of the Project site along Depot Road and another a Class III Bicycle Route approximately 0.6 miles south of the Project site along Breakwater Avenue

The nearest pedestrian facility is a public sidewalk network that intersects the Project site through Whitesell Street, which is linked to Enterprise Avenue to the southeast and through to Depot Road to the north. There are also several crosswalks in the Project's vicinity, specifically at the intersection of Enterprise Avenue and Whitesell Street, an east–west crosswalk approximately 300 feet north of the intersection of Enterprise Avenue and Whitesell Street, and at the intersection of Whitesell Street and Depot Road.

5.17.2 Regulatory Setting

5.17.2.1 Federal

No federal laws, regulations, or policies relate to transportation and traffic for the Project.

5.17.2.2 State

The California Department of Transportation (Caltrans) manages the state highway system and ramp interchange intersections. Caltrans manages highway, bridge, and rail transportation planning, construction, and maintenance. The Project site is bounded by local roads; therefore, there are no state laws, regulations, or policies related to transportation and traffic that would be applicable to the Project.

5.17.2.3 Local

City of Hayward 2040 General Plan Policies

The Mobility Element of the City of Hayward 2040 General Plan (General Plan) establishes goals and policies to improve mobility of people and goods within and through the city, which focuses on a balanced transportation network that supports and encourages walking, bicycling, and transit ridership. Applicable policies from the Mobility Element of the General Plan to the Project are listed below.

City of Hayward 2040 Policies Relevant to Transportation

Policy M-1.1	The City shall provide a safe and efficient transportation system for the movement of people, goods, and services through, and within Hayward.
Policy M-2.5	The City shall review and comment on development applications in Alameda County and adjoining cities which may impact Hayward's transportation systems, and shall suggest solutions to reduce negative effects on local circulation and mobility.
Policy M-3.3	The City shall balance the needs of all travel modes when planning transportation improvements and managing transportation use in the public right-of-way.
Policy M-3.7	The City shall consider the needs of all transportation users in the review of development proposals to ensure on-site and off-site transportation facility improvements complement existing and planned land uses.
Policy M-3.10	The City shall develop safe and convenient bikeways and pedestrian crossings that reduce conflicts between pedestrians, bicyclists, and motor vehicles on streets, multi-use trails, and sidewalks.
Policy M-5.6	The City shall strive to improve pedestrian safety at intersections and mid-block locations by providing safe, well-marked pedestrian crossings, bulb-outs, or median refuges that reduce crossing widths, and/or audio sound warnings.

City of Hayward 2040 Policies Relevant to Transportation	
Policy M-7.9	The City shall require developers of large projects to identify and address, as feasible, the potential impacts of their projects on AC Transit ridership and bus operations as part of the project review and approval process.
Policy M-7.10	The City shall work with transit providers to incorporate transit facilities into new private development and city project designs including incorporation of transit infrastructure (i.e., electricity, fiber-optic cable, etc.), alignments for transit route extensions, and new station locations.
Policy M-11.2	The City shall require trucks to use designated routes and shall prohibit trucks on local streets to address traffic operations and safety concerns in residential neighborhoods.

City of Hayward Transportation Impact Analysis Guidelines

The city's Transportation Impact Analysis Guidelines (TIAG) is comprehensive guide that:

- Outlines the review procedure and document requirements for development projects, city transportation projects, and General Plan amendments.
- Provides the screening criteria, adopted thresholds of significance, pre-approved mitigations, and monitoring requirements within the context of the California Environmental Quality Act (CEQA).
- Provides the criteria and project characteristics used to determine when a Local Transportation Analysis (LTA) is required.
- Outlines project attributes to be considered when determining impacts to the local transportation system.
- Provides the appropriate methodologies, procedures, and processes for mitigating impacts to the local transportation system within the City of Hayward.

As discussed below, the TIAG, in accordance with Senate Bill 743 and CEQA Guidelines Section 15064.3(b), provides guidance on the appropriate level of transportation analysis the Project would be applicable to. Further, the TIAG is linked to the Mobility Element of the General Plan through the concepts of sustainable and/or active transportation, complete streets, and strategic considerations of all transportation modes.

5.17.3 Discussion

a) *Would the project conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?* **No Impact.**

Construction and Operation

The Project would not involve any new or modified land uses that would generate long-term vehicle trips or other features that may affect the local or regional transportation system. Site access for the Project would be through the existing WPCF main access gate from Whitesell Street and new access-controlled vehicle and pedestrian gates at 24401 Whitesell Street where the new public entrance and parking lot is located. There are also two existing access gates on Enterprise Avenue both east of Whitesell and west of Whitesell near the southern end of Enterprise Avenue. Access during construction would be through the existing vehicle gates on both sides of Whitesell Street as well as the two gates on Enterprise. In addition, a new access-controlled gate and driveway would be constructed just south of Whitesell Street along Enterprise Avenue to provide access to the new grit facility.

Project construction would only temporarily increase local roadway traffic due to the transport and delivery of construction equipment and materials, as well as daily worker trips. Once the Project is in operation, it is anticipated that the Administration Building and PE EQ Facility would be similar to existing conditions and the Project would accommodate up to twelve new workers. Operations and maintenance of the PE EQ would be similar to existing conditions and is not expected to require additional workers or additional truck trips. Operations and maintenance for the proposed Preliminary and Secondary Treatment Improvements would be similar to existing operations. Preliminary and Secondary Treatment Improvement would require two additional bi-weekly truck trips to provide alkalinity chemicals (sodium hydroxide) used in the BNR process and up to twelve new workers would be required to operate the new BNR process.

The Project would only temporarily increase traffic during construction and would result in only a minor increase in vehicle trips during Project operations. In the long term, the Project would operate in a similar manner to existing conditions and would continue to comply with existing programs, plans, ordinances, and policies related to transportation. The Project would neither directly nor indirectly eliminate existing or planned alternative transportation corridors or facilities (e.g., bike paths, lanes, etc.), including changes in polices or programs that support alternative transportation, nor construct facilities in locations in which future alternative transportation facilities may be planned. Therefore, the Project would not conflict with a program plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities, and there would be no impact.

b) *Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?* **No Impact.**

Construction and Operation

In accordance with Senate Bill 743, CEQA Guidelines Section 15064.3(b) indicates that vehicle miles traveled (VMT) is the most appropriate measure for identifying transportation impacts. VMT is a measure of the total number of miles driven to or from a development. In December 2020, the City adopted VMT screening criteria according to CEQA Guidelines Section 15064.3(b). Based on the applicable screening criteria defined in the city's TIAG, a detailed CEQA transportation analysis would not be required if a Project meets one of the City's screens and all screening criteria for that screen.

Based on the TIAG, the Project would classify as a local serving public facility for which operation of such facilities is considered to have a less-than-significant impact related to VMT. Further, the Project's land uses would operate in the same manner that it operated prior to Project construction. Therefore, the Project would not conflict with or be inconsistent with CEQA Guidelines Section 15064.3(b) or the VMT criteria set forth in the city's TIAG, and would have no impact.

c) *Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?* **No Impact.**

Construction and Operation

As discussed in Section 3.2.3, *Access*, proposed improvements to transportation infrastructure would be limited to the construction of a new access-controlled gate and driveway at the southern boundary of the Project site along Enterprise Avenue which would provide access to the new grit facility (a component of Preliminary and Secondary Treatment Improvements), as well as a new gate for public entry to the parking lot near the proposed Administration Building. As stated above, Enterprise Avenue is posted with a speed limit of 25 miles per hour and does not serve through-traffic (i.e., vehicle travel speeds are currently low on this roadway segment). Whitesell Street is a two-lane local road with a posted speed limit of 30 mph.

The Project would not introduce any new improvements to the transportation system including roadways, bicycle, pedestrian, or transit facilities that would have the potential to introduce hazardous conditions. As discussed above, and in Section 3.2.3, Access, the Project would use both new and existing entrance and exit points for construction/vendor trips. The proposed driveway on the southeastern corner of the Project site along Enterprise Avenue, would be placed in an area that has a low posted speed limit and currently experiences low volumes of traffic. The proposed gate along Whitesell Street would be constructed next to an existing curb cut, which is accessible through an existing dedicated left-turn lane and or right for southbound traffic, and therefore, would not introduce a new transportation feature.

The Project would also not introduce an incompatible land use to the Project site. The Project would improve the operation of existing municipal facilities and does not propose changes to the type of land use that would occur on the site. For this reason, the Project would not have any impact related to an increase of hazard due to the introduction of an incompatible land use.

d) *Result in inadequate emergency access?* **Less-than-Significant Impact.**

Construction and Operation

As described in Chapter 3, as part of construction for the PE EQ Facility and Preliminary and Secondary Treatment Improvements, new pipes would be installed to supplement or replace existing pipes, as well as electrical duct banks and associated electrical wiring, to interconnect the treatment facilities within the WPCF. Construction of these Project components would require temporary roadway closures for one lane along Enterprise Avenue and one lane along Whitesell Street. Construction of the Administration Building would require several short-term temporary lane closures along Whitesell Street to accommodate utility construction.

While slow-moving construction-related vehicles in combination with temporary lane closures could have the potential to slow traffic and create congestion that can temporarily interfere with emergency response, the transportation infrastructure surrounding the Project site provides numerous entry points to land uses in the Project area. In addition, the Project area, which is zoned as General Industrial, does not experience heavy traffic volumes that could create such congestion. While temporary closures along Whitesell Street and Enterprise Avenue may temporarily impede or slow emergency access relative to existing conditions, implementation of Project construction would be required by law to yield to responding emergency vehicles. Emergency vehicles would be able to use the open lane opposite the temporarily closed lane. As such, the Project would not significantly disrupt circulation or conflict with an established route for evacuation during an emergency. For these reasons, the Project would have a less-than-significant impact related to adequate emergency access.

5.18 Tribal Cultural Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
XVIII. TRIBAL CULTURAL RESOURCES —				
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources. Code Section 5020.1(k), or	☐	☒	☐	☐
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

5.18.1 Environmental Setting

The California Native American Heritage Commission (NAHC) was contacted on December 11, 2023, to request a search of the NAHC's Sacred Lands File (SLF) and a list of Native American representatives who may have knowledge of tribal cultural resources in the Project Area, or interest in the Project. On December 18, 2023, the NAHC provided a list of eighteen Native American representatives from eight tribes who may have knowledge of tribal cultural resources in the Project area or be interested in the Project. The SLF search was negative for sacred sites within 0.5 miles of the Project area (NAHC 2023).

Formal notification was sent electronically to the eighteen representatives identified by the NAHC on December 22, 2023. See Section 5.5, *Cultural Resources*, above for a summary of the NWIC records search, background research, and archaeological sensitivity analysis.

On December 27, 2023, Andrew Galvan of The Ohlone Tribe responded to the City and requested information regarding the NAHC SLF search results, records search results, and archaeological mitigation recommendations. The City communicated preliminary results and responses to these questions to Mr. Galvan on January 2, 2024. On January 6, 2024, Galvan responded to the City with gratitude.

On January 4, 2024, Nichole Rhodes, on behalf of Kanyon Sayers-Roods of Indian Canyon Mutsun, responded to the City and requested tribal consultation and archaeological mitigation recommendations. A request for information about potentially eligible cultural sites near the Project was communicated by the City to Ms. Rhodes on January 4, 2024. The City followed up on April 1, 2024, with a subsequent email reiterating the request for additional information from Ms. Rhodes. No response has been received as of July 26, 2024.

On January 5, 2024, Desiree Vigil of The Ohlone Indian Tribe responded to the City acknowledging receipt of the letter.

On January 9, 2024, Corrina Gould of the Confederated Villages of Lisjan responded to the City and requested information regarding the NAHC SLF search results, records search results, and any additional archaeological reports. On January 10, 2024, the City communicated that the requested materials would be provided upon finalization of the CEQA review.

5.18.2 Regulatory Setting

5.18.2.1 State

Native American Heritage Commission

The NAHC was created by statute in 1976. It is a nine-member body appointed by the governor to identify and catalog cultural resources (i.e., places of special religious or social significance to Native Americans, and known graves and cemeteries of Native Americans on private lands) in California. The NAHC is responsible for preserving and ensuring accessibility of sacred sites and burials, ensuring the disposition of Native American human remains and burial items, maintaining an inventory of Native American sacred sites located on public lands, and reviewing current administrative and statutory protections related to these sacred sites. Sacred lands documented in the NAHC's sacred lands file may constitute a tribal cultural resource. Additionally, the NAHC maintains a list of relevant Tribes and tribal representatives for consultation.

California Public Resources Code and Tribal Cultural Resources

In 2014, the California Legislature enacted Assembly Bill (AB) 52, which added provisions to the Public Resources Code regarding the evaluation of impacts on tribal cultural resources under CEQA, and requirements to consult with California Native American tribes. In particular, AB 52 requires lead agencies to analyze project impacts on tribal cultural resources separately from archaeological resources (PRC Sections 21074 and 21083.09). AB 52 defines "tribal cultural resources" in PRC Section 21074 and requires lead agencies to engage in additional consultation procedures with respect to California Native American tribes (PRC Sections 21080.3.1, 21080.3.2, and 21082.3).

A *tribal cultural resource* is defined in PRC Section 21074 as either a site, feature, place, or cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

1. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC Section 5020.1(k); or
2. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in PRC Section 5024.1(c). In applying the criteria set forth in PRC Section 5024.1(c), the lead agency shall consider the significance of the resource to a California Native American tribe.

AB 52-compliant tribal consultation is required to determine if there are tribal cultural resources that may be impacted by a project.

California Public Resources Code Sections 5097.98 and 5097.99

PRC Section 5097.98 (reiterated in CEQA Guidelines Section 15064.5(e)) identifies steps to follow in the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery. PRC Section 5097.99 prohibits obtaining or possessing any Native American artifacts or human remains that are taken from a Native American grave or cairn (stone burial mound). If Native American human remains are identified during Project construction or operation, this regulation would apply.

California Health and Safety Code Section 7050.5

California Health and Safety Code Section 7050.5 protects human remains by prohibiting the disinterment, disturbance, or removal of human remains from any location other than a dedicated cemetery. If human remains are identified during Project construction or operation, this regulation would apply.

5.18.2.2 Local

City of Hayward Historical Preservation Ordinance Article 11

The City of Hayward has created Historical Preservation Ordinance Article 11. See Section 5.5, *Cultural Resources*, above for a full description of this ordinance.

5.18.3 Discussion

a.i) *Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:(i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources. Code Section 5020.1(k).* **Less than Significant with Mitigation Incorporated**

Construction and Operation

Based on the results of a records search at the Northwest Information Center (NWIC) of the California Historical Resources Information System on December 12, 2023 (File No. 23-0820), no known tribal cultural resources have been previously recorded within the Project Area. Therefore, no such resources either listed or determined eligible for listing in the California Register or included in a local register of historical resources as defined in PRC Section 5020.1(k), pursuant to PRC Section 21074(a)(1), would be affected by the Project.

Operation and maintenance of the Project would cause no impact to tribal cultural resources because no ground disturbance would occur at depths greater than those reached during construction.

However, if any previously unrecorded archaeological resource were identified during Project construction-related ground-disturbing construction activities and were found to qualify as a tribal cultural resource pursuant to PRC Section 21074(a)(1) (determined to be eligible for listing in the California Register or in a local register of historical resources), any impacts of the proposed project on the resource could be potentially significant. Any such potentially significant impacts would be reduced to a less-than-significant level by implementing **Mitigation Measure CUL-1: Cultural Resources Awareness Training** (see Section 5.5, *Cultural Resources*), and compliance with the City's Historic Preservation Ordinance.

a.ii) *Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:(ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.* **Less than Significant with Mitigation Incorporated**

Construction and Operation

Based on the results of a records search at the Northwest Information Center (NWIC) of the California Historical Resources Information System on December 12, 2023 (File No. 23-0820), the City of Hayward did not determine any resource that could potentially be affected by the proposed Project to be a tribal cultural resource significant pursuant to criteria set forth in PRC Section 5024.1(c). Therefore, the Project is not anticipated to affect any such resources.

Operation and maintenance of the Project would cause no impact to tribal cultural resources because no ground disturbance would occur at depths greater than those reached during construction.

However, if any previously unrecorded archaeological resource were identified during Project construction-related ground-disturbing construction activities and were found to qualify as a tribal cultural resource pursuant to PRC Section 21074(a)(1) (determined to be eligible for listing in the California Register or in a local register of historical resources), any impacts of the proposed project on the resource could be potentially significant. Any such potentially significant impacts would be reduced to a less-than-significant level by implementing **Mitigation Measure CUL-1, Cultural Resources Awareness Training** (see Section 5.5, *Cultural Resources*), and compliance with the City's Historic Preservation Ordinance.

5.19 Utilities and Service Systems

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
XIX. UTILITIES AND SERVICE SYSTEMS — Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

5.19.1 Environmental Setting

The following are the utilities and services providers for the Project site:

- **Wastewater Treatment:** The Hayward collection system includes about 320 miles of sewer mains, nine sewage lift stations, and 4.2 miles of force mains. Sewer systems from the City of Hayward route to the WPCF. The East Bay Dischargers Authority disposes of treated wastewater from the City (City of Hayward 2014). Adjacent to the new Administration Building at the Project site is an existing sewer maintenance hole main on Whitesell Street, which the City owns.

- **Water Service:** Adjacent to the new Administration Building at the Project site is an existing 12-inch potable water main on Whitesell Street, which the City owns. The WPCF also produces tertiary treated recycled water that is used to offset a portion of the potable water demands of the City serving industrial and landscaping water users within the service area. In addition to the tertiary treated recycled water system, the WPCF has three other water (W) type systems in place: 1W, 2W and 3W, further described in *Chapter 3, Project Description*.

- **Storm Drainage:** Stormwater runoff from the WPCF is directed to three locations: the primary effluent equalization basin, the SWPS, and the WPCF headworks. The system that drains to the equalization basin collects the runoff from the northwest portion of the WPCF and near the Enterprise Avenue entrance to the WPCF. Stormwater directed to the equalization basins flows by gravity back to the SWPS. The drainage area that collects and directs stormwater runoff to the SWPS directly is the smallest and it includes the areas around

Digesters No. 2 and 3, located at the central and northern portion of the WPCF. The remaining drainage areas on the WPCF site and the area west of Whitesell Street drain to the headworks.

- **Solid Waste:** Solid waste services in the City are managed by Waste Management - Alameda County. Solid waste from the WPCF first goes to the Davis Street Resource Recovery Complex in San Leandro. It is then transferred to a larger truck and brought to the Altamont Landfill outside of Livermore (City of Hayward 2023a).
- **Electricity and Communications:** PG&E supplies electricity to the WPCF through its existing power distribution network. The WPCF's SCADA fiber optic communication network provides telecommunication services, allowing for monitoring and control capabilities.

5.19.2 Regulatory Setting

5.19.2.1 State

Assembly Bill 939 (1989)

The California Integrated Waste Management Act of 1989, or AB 939, established the California Integrated Waste Management Board (CalRecycle), which required all California counties to prepare Integrated Waste Management Plans and mandated that local jurisdictions divert from the landfill at least 50 percent of solid waste generated beginning January 1, 2000.

Assembly Bill 341 (2011)

AB 341 sets forth the requirements of the statewide mandatory commercial recycling program for businesses that generate four or more cubic yards of commercial solid waste per week and multi-family dwellings with five or more units in California. AB 341 sets a statewide goal of 75 percent disposal reduction by 2020 and beyond.

Assembly Bill 1826 (2014)

AB 1826 sets forth the requirements of the statewide mandatory commercial organics recycling program for businesses and multi-family dwellings with five or more units that generate two or more cubic yards of commercial solid waste per week. AB 1826 sets a statewide goal for a 50 percent reduction in organic waste disposal by 2020 and 75 percent organics diversion by 2025.

Assembly Bill 1383 (2016)

SB 1383 establishes targets to achieve a 50 percent reduction in the level of the statewide disposal of organic waste from the 2014 level by 2020 and a 75 percent reduction by 2025. The bill grants CalRecycle the regulatory authority required to achieve the organic waste disposal reduction targets. It establishes an additional target: at least 20 percent of currently disposed edible food will be recovered for human consumption by 2025.

California Green Building Standards Code Compliance for Construction, Waste Reduction, Disposal and Recycling

In January 2010, the State of California adopted the California Green Building Standards Code ("CALGreen"), establishing mandatory green building standards for all buildings in California. The code covers five categories: planning and design, energy efficiency, water efficiency and conservation, material conservation and resources efficiency, and indoor environmental quality. These standards include the following mandatory set of measures, as well as more rigorous voluntary guidelines, for new construction projects to achieve specific green building performance levels:

- Reducing indoor water use by 20 percent;
- Reducing wastewater by 20 percent;
- Recycling and/or salvaging 65 percent of nonhazardous construction and demolition ("C&D") debris or meeting the local construction and demolition waste management ordinance, whichever is more stringent; and
- Providing readily accessible areas for recycling by occupants.

5.19.2.2 Local

City of Hayward Municipal Code Section 5-10 – Construction and Demolition Debris Waste Reduction and Recycling Requirements

This Article was adopted to supplement the provisions of the California Integrated Waste Management Act of 1989, the Alameda County Waste Reduction and Recycling Act of 1990 (Measure D), the California Green Building Standards Code (CALGreen), and the City of Hayward's landfill diversion goals. This Article's intent is to divert building materials from landfills and process and return the materials into the economic mainstream, thereby conserving natural resources and stimulating markets for recycled and salvaged materials. Compliance with the provisions of this Article requires submission of a Waste Management Plan (WMP) prior to permit approval and submission of a WMP Summary Report to the Compliance Officer prior to final inspection for all building and/or demolition permits issued for Covered Projects.

The Project would require demolishing various facilities and mechanical systems at the WPCF to accommodate the proposed improvements. As a result, the Project would be considered a Covered Project subject to the provisions of this Article.

City of Hayward 2040 General Plan Policies

The City of Hayward 2040 General Plan policies have been adopted to avoid or mitigate utilities and service system impacts from development projects. Policies applicable to the Project are listed below.

City of Hayward 2040 Policies Relevant to Utilities & Service Systems	
Policy LU-1.8	The City shall maintain and implement green building and landscaping requirements for private and public-sector development to: • Reduce the use of energy, water, and natural resources. • Minimize the long-term maintenance and utility expenses of infrastructure, buildings, and properties. • Create healthy indoor environments to promote the health and productivity of residents, workers, and visitors. • Encourage the use of durable, sustainably sourced, and/or recycled building materials. • Reduce landfill waste by promoting practices that reduce, reuse, and recycle solid waste
Policy NR-4.2	The City shall collaborate with partner agencies, utility providers, and the business community to support a range of energy efficiency, conservation, and waste reduction measures, including the development of green buildings and infrastructure, weatherization programs, installation of energy efficient appliances and equipment in homes and offices, promotion of energy efficiency retrofit programs, use of green power options, and heightened awareness of the benefits of energy efficiency and conservation issues.
Policy NR-6.8	The City shall continue to comply with the San Francisco Bay Region National Pollutant Discharge Elimination System (NPDES) Municipal Regional Stormwater Permit.
Policy NR-6.14	The City shall use native or drought-tolerant vegetation in the landscaping of all public facilities.
Policy NR-6.16	The City shall continue to implement the Bay-Friendly Water Efficient Landscape Ordinance.
Policy PFS-2.7	The City shall continue to improve energy efficiency of City buildings and infrastructure through implementation of the Municipal Green Building Ordinance, efficiency improvements, equipment upgrades, and installation of clean, renewable energy systems.
Policy PFS-4.4	The City shall operate and maintain the WPCF to ensure that wastewater discharge meets all applicable NPDES permit provisions.
Policy PFS-5.1	The City shall work with the Alameda County Flood Control and Water Conservation District to expand and maintain major stormwater drainage facilities to accommodate the needs of existing and planned development

5.19.3 Discussion

a) *Would the Project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?* **Less-than-Significant Impact.**

Construction and Operation

The Project includes utility infrastructure installation and improvements; however, this would tie into the existing WPCF infrastructure as follows:

- **Water:** The Project would involve separating, reconnecting, and installing water service connections to the existing 12-inch potable water main in Whitesell Street, which the City owns.
- **Sewer:** Sanitary sewer connections for the new Administration Building would be to the existing sewer maintenance hole southwest of the new Administration Building. No new sewer connections or sewer line upgrades are proposed as part of the PE EQ facility or the Preliminary and Secondary Treatment Improvements.
- **Storm Drainage:** Stormwater runoff from the area surrounding the new Administration Building would connect to existing and new storm drain catch basins

on site and discharge into the existing sewer manhole located in the southwest corner of the new Administration Building. Surface runoff in the triangular parcel north of the Administration Building will be captured and directed to a sanitary sewer so it can be treated with sewage through the WPCF as required by the WPCF's discharge permit. A small portion of the runoff in landscaped areas immediately adjacent to Whitesell Street will be directed into the existing storm drainage system serving Whitesell Street since that area is not part of the treatment process area covered by the discharge permit. Stormwater runoff from new paved areas serving the PE EQ Facility and the Preliminary and Secondary Treatment Improvements would be captured and directed to the treatment process per the existing NPDES permit.

- **Electricity and telecommunications:** No natural gas connections or new outside utility (PG&E) power lines are proposed for the new Administration Building. In addition, the Project would install new solar photovoltaic power generation equipment on a canopy over the parking lot west of the new administration building. The new Administration Building's SCADA equipment room would connect to the WPCF's fiber optic communication network. The existing power distribution network within the WPCF would power the Administration Building, PE EQ Facility, and Preliminary and Secondary Treatment improvements. The PE EQ Facility and the Preliminary and Secondary Treatment Improvements would also include connections to the existing SCADA network.

Additionally, to enable construction of the new BNR facilities simultaneously with the new PE EQ Facility the Project would utilize two existing winter sludge drying beds for temporary PE equalization storage. PE flow would be intercepted upstream of the existing PE EQ basin by temporary diesel-powered pumps. Additional temporary diesel-powered pumps would be installed at the drying beds to return flow to the treatment process using the same pipeline. The temporary diesel-powered pumps would convey flow to and from the winter sludge drying beds through a temporary pipeline. The winter sludge drying beds are anticipated to be used during Project construction under wet weather conditions, adding up to three times a year with plant operators diverting up to three million gallons of primary effluent each event. Each diversion would last approximately four hours to manage peak wet weather flows for other WPCF operational and maintenance needs during construction. [21]

The installation and improvements of the Project utility infrastructure would not require the relocation or construction of additional utility infrastructure not owned or operated by the City as part of the WPCF operations, such as PG&E, which would have significant environmental impacts beyond those proposed as part of the Project analyzed in this Initial Study. As such, the Project would result in a less-than-significant impact.

b) *Would the Project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?* **Less-than-Significant Impact.**

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21 Assumes three engines operating for approximately four hours in a given day; with the potential need for up to four engines operating up to twelve hours in a given day.

Construction and Operation

As Chapter 3, *Project Description*, describes, a new potable water service would connect to the new Administration Building while replacing an existing service. The operations of the Project would be similar to current conditions, and the number of employees using the site would not increase significantly over existing conditions. With up to twelve new workers anticipated, this would equate to an additional demand of approximately 25 gallons per person per shift for sanitary water use (EPA, 2023) This would equate to approximately 300 gallons of wastewater per day. This increase in wastewater would be easily accommodated by the WPCF, which has an average dry weather flow capacity of 18.5 million gallons per day. During the construction of the Project, utility water would be required for dust control; an existing WPCF system would be utilized for this purpose. The slight increase in the demand for water during construction would be insignificant. Therefore, existing water supplies at the WPCF would be sufficient to enable the construction of the Project and meet any foreseeable future operational needs during normal, dry, and multiple dry years. As such, this impact is considered less than significant.

c) *Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?* **Less-than-Significant Impact.**

Construction and Operation

As described in Chapter 3, *Project Description*, the Project would operate similarly to the current conditions and would not require additional wastewater treatment. As discussed above, the addition of up to twelve new workers would not result in a substantial increase in potable water demand. As such, the Project would not exceed the City's allocated capacity at the WPCF. Therefore, the development of the Project would have a less-than-significant impact on wastewater treatment capacity.

d) *Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?* **Less-than-Significant Impact.**

Construction and Operation

During construction, the proposed Project would generate construction-related waste and debris. The operation and maintenance of the Project would be similar to the existing conditions of the WPCF. The Project is not expected to increase operational wastes requiring disposal.

The contractor would recycle recyclable construction materials to the extent feasible. Non-recyclable materials would be taken to the Altamont Landfill located in Livermore or another nearby landfill to be determined by the contractor and disposed of per applicable regulatory requirements. The Altamont Landfill has 65,400,000 tons of remaining landfill capacity (CalRecycle 2019). The Project would generate a relatively limited volume of solid waste during construction. No additional solid waste from Project operations is anticipated. Available landfill capacity would not be noticeably affected by the Project. As such, this impact is considered less than significant.

e) *Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?* **Less-than-Significant Impact.**

Construction and Operation

During construction, the Project would generate construction-related debris. However, the amount of waste sent to the landfill would be minimized through compliance with the following regulations:

- **City of Hayward Municipal Code Section 5-10 –** Construction and Demolition Debris Waste Reduction and Recycling Requirements. Compliance with the provisions of this Article requires submission of a WMP prior to permit approval and submission of a WMP Summary Report to the Compliance Officer prior to final inspection for all building and/or demolition permits issued for Covered Projects.
- **CDD Review and Final –** requires non-hazardous debris generated during the construction of the newly designed building to be diverted at 75 percent, a higher diversion requirement than the state CALGreen Code.

Operation of the Project would be similar to existing operation and maintenance activities at the WPCF. The Project is not anticipated to increase operational wastes requiring disposal. The City will continue to use Waste Management of Alameda County for collection and disposal of all non-hazardous solid waste generated.

For these reasons, impacts associated with solid waste generation and regulations related to solid waste during Project construction and operation would be less than significant.

5.20 Wildfire

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
XX. WILDFIRE — If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☒
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

5.20.1 Environmental Setting

The Project site is in a Local Responsibility Area (LRA) not defined as a Very High Fire Hazard Severity Zone (VHFHSZ). The Project site is approximately 10 miles southwest of a local responsibility defined as a VHFHSZ (CAL FIRE 2008) and over 10 miles west of a State Responsibility Area (SRA) defined as a High Fire Hazard Severity Zone (HFHSZ) (CAL FIRE 2023). The Project site is in an area not designated as a wildland-urban interface (USFS 2020). The Project site is within an urbanized area, is relatively flat, and adjacent to commercial, industrial, and open space uses.

5.20.2 Regulatory Framework

5.20.2.1 State

Public Resources Code Section 4201 – 4204

Sections 4201 through 4204 of the California Public Resources Code direct CAL FIRE to map Fire Hazard Severity Zones (FHSZ) within SRAs based on relevant factors such as fuels, terrain, and weather. Mitigation strategies and building code requirements to reduce wildland fire risks to buildings within SRAs are based on these zone designations.

Government Code Section 51175 – 51189

Sections 51175 through 51189 of the California Government Code directs CAL FIRE to recommend FHSZs within LRAs. Local agencies must designate VHFHSZs in their jurisdiction within 120 days of receiving recommendations from CAL FIRE and may include additional areas not identified by CAL FIRE as VHFHSZs.

5.20.2.2 Local

City of Hayward 2040 General Plan Policies

The City of Hayward 2040 General Plan policies have been adopted to avoid or mitigate wildfire impacts from development projects (City of Hayward 2014). The policies relate to wildfire hazards in hillside areas or wildland-urban interface areas, which do not pertain to the Project.

5.20.3 Discussion

a-d) *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project: Substantially impair an adopted emergency response plan or emergency evacuation plan? Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire? Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment? Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?* **No Impact**.

Construction and Operation

The Project would construct new and improved wastewater treatment facilities and processes at the Project site. The Project would not exacerbate wildfire risks due to slope, prevailing winds, and other factors due to the Project site's urbanized location away from natural areas susceptible to wildfire. The Project site is not within an area of moderate, high, or very high fire hazard severity for the Local Responsibility Area, nor does it contain areas of moderate, high, or very high fire hazard severity for the State Responsibility Area. Due to the Project site's urbanized location and lack of interface with any natural areas susceptible to wildfire, the Project would not require the installation or maintenance of associated wildfire suppression or related infrastructure. The Project would also not expose people or structures to significant wildfire risks, given its highly urban location away from natural areas susceptible to wildfire. It would not include new, expanded, or more intensive uses that could increase wildfire risk. Therefore, there would be no impact related to wildfire.

5.21 Mandatory Findings of Significance

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
XXI. MANDATORY FINDINGS OF SIGNIFICANCE —				
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☒	☐	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

5.21.1 Discussion

a) *Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?* **Less than Significant Impact with Mitigation**.

Based upon background research, site visits, and the analysis contained herein, with implementation of mitigation measures identified in this Initial Study and listed below, the Project does not have the potential to 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. Any potential short-term increases in potential effects to the environment associated with dust emissions and potential hazardous materials exposure during construction, and long-term effects on the environment during Project operation, are mitigated to a less-than-significant level, as described throughout the Initial Study.

Mitigation Measure AIR-1: Implement BAAQMD Basic Construction Mitigation Measures (see Section 5.3, *Air Quality*, above).

Mitigation Measure BIO-1: Nesting Birds (see Section 5.4, *Biological Resources*, above).

Mitigation Measure BIO-2: Bat Survey (see Section 5.4, *Biological Resources*, above).

Mitigation Measure CUL-1: Cultural Resources Awareness Training (see Section 5.5, *Cultural Resources*, above).

Mitigation Measure HAZ-1: Site Management Plan (see section 5.9, *Hazards and Hazardous Materials*, above).

b) *Does the project have impacts that are individually limited but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?* **Less than Significant Impact with Mitigation**

In accordance with CEQA Guidelines Section 15183, the environmental analysis in this Initial Study was conducted to determine if there were any Project-specific effects that are peculiar to the Project or its site. In addition to this requirement, Section 15065(a)(3) states that a lead agency shall find that a project may have a significant effect on the environment where there is substantial evidence that the project has potential environmental effects "that are individually limited, but cumulatively considerable."[22] If cumulative impacts could occur, cumulative analysis asks whether the project's contribution to the significant cumulative impact would be cumulatively considerable.

As discussed in the Initial Study Checklist above, individual project-related significant impacts have been identified for the Project, all of which would be mitigated to less-than-significant levels through implementation of the mitigation measures described in the Initial Study Checklist. The Project has limited impacts on the physical environment and most of the impacts associated with implementation of the Project would occur during construction, and thus would be short-term.

The potential for Project-generated impacts to contribute to a significant cumulative impact would arise if they are located within the same geographic area. In addition to the geographic scope, cumulative impacts can be determined by timing of the other projects relative to the Project. Schedule is particularly important for construction-related impacts. For a group of projects to generate cumulative construction impacts, they must be temporally as well as spatially proximate. The Switchgear Rehabilitation Project, an electrical improvements project[23] is located at the WPCF, and is anticipated to be under construction at the same time as the Project.

Construction of the Switchgear Rehabilitation Project, in conjunction with the Project, could cause wind-blown dust that would contribute particulate matter into the local

22 *Cumulatively considerable* is defined in Section 15065(a)(3) of the CEQA Guidelines as "the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects."

23 This project was determined to be categorically exempt from CEQA pursuant to CEQA Guidelines Section 15301 as a minor alteration to an existing facility.

atmosphere. As described in Section 5.3, Air Quality, Implementation of the mitigation measure **AIR-1: Implement BAAQMD Basic Construction Mitigation Measures**, which includes appropriate construction emission management practices and control measures to reduce impacts from fugitive dust, would ensure that short-term air quality construction-related impacts are less-than-significant. Therefore, there would be no significant cumulative impact associated with dust.

Construction of this other project, in conjunction with the Project, could result in affects to the same biological resources as the Project, primarily to nesting birds and bats, in the short term. Impacts from the Project would be reduced to less than significant levels through implementation of mitigation measures **BIO-1: Nesting Birds** and **BIO-2: Bat Survey**. Therefore, there would be no significant cumulative impact to biological resources.

The Project would not result in impacts to agricultural and forestry resources, mineral resources, population and housing, public services, recreation, and wildfire; therefore, the Project would not contribute to cumulative impacts to these resources. The Project's impacts to cultural and tribal cultural resources, hazards and hazardous materials, and geology and soils are site specific and, therefore, would not contribute to a significant cumulative impact to those resources.

Implementation of the Project would marginally contribute to criteria pollutants and global GHG emissions. As discussed in Section 5.3 *Air Quality,* and Section 5.8 *Greenhouse Gas Emissions*, the Project's individual criteria pollutant and GHG emissions was below the BAAQMD threshold criteria and therefore would be a less than significant impact and not have a cumulatively considerable contribution to air quality or GHG emissions. The Project would not result in significant emissions of criteria air pollutants or GHGs and, therefore, would not result in a cumulatively considerable impact.

Based on the above discussion, the Project would not have cumulatively considerable contributions to significant cumulative impacts.

c) *Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?* **Less than Significant Impact with Mitigation Incorporated**.

Impacts to air quality, water quality, and hazardous materials by the Project could directly affect human beings, and all impacts discussed above could indirectly affect human beings. However, compliance with applicable federal, state, and local regulations as discussed in this Initial Study, and implementation of the identified mitigation measures would reduce these impacts to less than significant levels., as described throughout the Initial Study. This Initial Study has identified no other direct or indirect adverse effects on human beings.

Mitigation Measure AIR-1: Implement BAAQMD Basic Construction Mitigation Measures (see Section 5.3, *Air Quality*, above).

Mitigation Measure HAZ-1: Site Management Plan (see section 5.9, *Hazards and Hazardous Materials*, above).

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CHAPTER 6
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CHAPTER 7
Report Preparers

City of Hayward

Public Works and Utilities and Development Services – Planning Department
3700 Enterprise Ave
Hayward, CA 94545

- Suzan England, PE, Utilities Engineering Manager
- Kyle Carbert, PE, Senior Utilities Engineer
- Steve Kowalski, Associate Planner

Engineering

Brown & Caldwell
201 North Civic Drive, Suite 300
Walnut Creek, CA 94596

- Michael Walkowiak, PE, Managing Principal
- Seppi Henneman, PE, Engineer

Environmental Consultant

Environmental Science Associates (ESA)
575 Market Street, Suite 3700
San Francisco, CA 94105

- Alisa Moore, Project Director
- Meryka Dirks, Project Manager
- Zachary Martin, Deputy Project Manager, Social Resource Sections, Geology and Soils, Hazards, Hydrology and Water Quality Analyst
- Cheri Velzy, Air Quality, Health Risk Assessment, Energy, Greenhouse Gas Emissions Lead
- Ed Warner, Air Quality, Health Risk Assessment, Energy, Greenhouse Gas Emissions Analyst
- Brian Pittman, Biological Resources Lead
- Liza Ryan, Biological Resources Analyst
- Estrella Silva, Biological Resources Analyst
- Heidi Koenig, Cultural and Tribal Cultural Resources Lead
- Ashleigh Sims, Cultural and Tribal Cultural Resources Analyst

- Melissa Grijalva-Foreman, Cultural and Tribal Cultural Resources Analyst
- Johanna Kahn, Historic Resources Analyst
- Becky Urbano, Historic Resources Lead
- Amy Langford, Historic Resources Analyst
- Michael Burns, Geology and Soils, Hazards, Hydrology and Water Quality Lead
- Jonathan Teofilo, Transportation Lead
- Vince Molina, Transportation Analyst

Appendix A

Air Quality and GHG Modeling Files

Results Summary - Hayward WPCF - Total Project Cumulative Air Emissions

Updated: 4-Jun Reflects May 30, 2024 update, off-model pump calcs from 6/4

Average Daily Construction-related Criteria Pollutant Emissions

Project Construction Year	Average Daily Emissions (pounds per day)						
	ROG	**NOX**	**Exhaust PM10**	**Exhaust PM2.5**	**CO**	**Fugitive PM10**	**Fugitive PM2.5**
2024	1.6	15.8	0.7	0.6	16.0	0.8	0.2
2025	4.3	34.3	1.2	1.1	35.3	2.6	0.7
2026	10.8	24.2	0.9	0.8	31.3	0.5	0.1
BAAQMD Thresholds of Significance	*54*	*54*	*82*	*54*	*N/A*	*N/A*	*N/A*
Threshold Exceeded?	**No**	**No**	**No**	**No**			

Annual Construction-related Criteria Pollutant Emissions

Project Construction Year	Annual Emissions (tons per year)								
	ROG	**NOX**	**Exhaust PM10**	**Exhaust PM2.5**	**CO**	**Fugitive PM10**	**Fugitive PM2.5**	**PM10 total**	**PM2.5 total**
2024	0.0	0.2	0.0	0.0	0.2	0.0	0.0	0.0	0.0
2025	0.3	2.0	0.1	0.1	2.1	0.1	0.0	0.2	0.1
2026	0.6	1.1	0.0	0.0	1.3	0.0	0.0	0.1	0.0

	MTCO2e
Admin Building	
2024	30.8
2025	220.1
PE EQ	
2025	86.9
2026	32.4
Phase II Improvements	
2025	260.5
2026	215.9

Construction Year	CO_2e metric tons/year
2024	31
2025	568
2026	248
Total	**846**
Amortized	**28**

NOTES:

$MTCO_2e$ = metric tons of carbon dioxide equivalent

Construction-related GHG emissions were amortized over 30 years, which is a commonly accepted method for including construction emissions as part of the Project's average annual emissions.

2026 emissions include diesel pump emissions from 6 high-flow events.

SOURCE: Data compiled by Environmental Science Associates in 2024 (Appendix A)

Results Summary - Hayward WPCF - Administrative Building

Updated: 31-May Updated schedule to begin 12/3/24, CalEEMod default construction schedule

Average Daily Construction-related Criteria Pollutant Emissions

Project Construction Year	**Average Daily Emissions (pounds per day)**						
			Exhaust	**Exhaust**		**Fugitive**	**Fugitive**
	ROG	**NOX**	**PM10**	**PM2.5**	**CO**	**PM10**	**PM2.5**
2024	1.6	15.8	0.7	0.6	16.0	0.8	0.2
2025	2.1	8.9	0.3	0.3	9.9	0.2	0.1
BAAQMD Thresholds of Signifi	*54*	*54*	*82*	*54*	*N/A*	*N/A*	*N/A*
Threshold Exceeded?	**No**	**No**	**No**	**No**			

NOTE: Average daily emissions = [annual emissions (tons)] * [2000 (lbs/ton)] / [calculated number of workdays during the year (days)]

5.1 Construction Schedule

Construction Phase	**Start Date**	**End Date**
Demolition	12/3/2024	12/31/2024
Site Preparation	1/1/2025	1/3/2025
Grading	1/4/2025	1/9/2025
Building Construction	1/10/2025	10/17/2025
Paving	10/18/2025	11/1/2025
Architectural Coating	11/2/2025	11/16/2025

Year	**Start**	**End**	**Workdays**
2024	12/3/2024	12/31/2024	21
2025	1/1/2025	11/16/2025	228

lbs/ton 2000

CalEEMod Outputs

2.2 Construction Emissions by Year, Unmitigated

Year	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily - Summer (Max)																		
2025	1.313547972	1.0929419	9.07691	10.3523606	0.0200854	0.3295579	0.082842662	0.41240059	0.3032992	0.02047265	0.3237718		1956.786861	1956.7869	0.0779699	0.0307376	0.4952914	1968.391198
Daily - Winter (Max)																		
2024	2.021238714	1.66984953	16.59032	16.8578347	0.0288038	0.6857372	0.896677208	1.58241444	0.6319947	0.16828793	0.8002826		3349.610765	3349.6108	0.142984	0.1438748	0.0552772	3396.115321
2025	23.56005311	23.5330277	51.8886	27.628175	0.2246144	1.1487992	10.84125643	11.9900557	1.1038802	3.45558192	4.5594621		33281.88178	33281.882	1.7298731	5.0408585	1.8039853	34829.10842
Average Daily																		
2024	0.110745739	0.09149389	0.907981	0.9227778	0.0015783	0.0375746	0.04886654	0.08644118	0.0346298	0.00915464	0.0437845		183.5660522	183.56605	0.0078324	0.0078835	0.0504815	186.1616408
2025	1.427189056	1.28952348	5.564651	6.18719336	0.0127896	0.2002332	0.137541488	0.33777465	0.18453	0.04534492	0.2298749		1314.051069	1314.0511	0.0548086	0.045186	0.2895162	1329.176218
Annual																		
2024	0.020211097	0.01669764	0.165707	0.16840695	0.000288	0.0068574	0.008918144	0.01577552	0.0063199	0.00167072	0.0079907		30.39145479	30.391455	0.0012967	0.0013052	0.0083578	30.8211841
2025	0.260462003	0.23533804	1.015549	1.12916279	0.0023341	0.0365426	0.025101321	0.06164387	0.0336767	0.00827545	0.0419522		217.5561503	217.55615	0.0090742	0.0074811	0.0479327	220.0602914

Results Summary - Hayward WPCF - PE EQ Facility

Updated: 4-Jun CalEEMod defaults for everything, updated start date to 9/15/25 (same as Phase II Improvements), added temporary pump emissions in 2026 calculated off-model to account for max PPD impact

Average Daily Construction-related Criteria Pollutant Emissions

Project Construction Year	**Average Daily Emissions (pounds per day)**						
			Exhaust	**Exhaust**		**Fugitive**	**Fugitive**
	ROG	**NOX**	**PM10**	**PM2.5**	**CO**	**PM10**	**PM2.5**
2025	0.6	6.4	0.2	0.2	7.4	0.4	0.1
2026	5.5	12.7	0.5	0.5	17.6	0.1	0.0
BAAQMD Thresholds of Signifi	*54*	*54*	*82*	*54*	*N/A*	*N/A*	*N/A*
Threshold Exceeded?	**No**	**No**	**No**	**No**			

NOTE: Average daily emissions = [annual emissions (tons)] * [2000 (lbs/ton)] / [calculated number of workdays during the year (days)]
2026 includes impact from operating 3 temporary pumps for 4 hours

5.1 Construction Schedule

Construction Phase	**Start Date**	**End Date**
Demolition	9/15/2025	9/29/2025
Site Preparation	9/30/2025	10/1/2025
Grading	10/2/2025	10/4/2025
Building Construction	10/5/2025	2/22/2026
Paving	2/23/2026	3/2/2026
Architectural Coating	3/3/2026	3/10/2026

Year	**Start**	**End**	**Workdays**
2025	9/15/2025	12/31/2025	78
2026	1/1/2026	3/10/2026	49

lbs/ton 2000

CalEEMod Outputs

2.2 Construction Emissions by Year, Unmitigated

Year	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily - Summer (Max)																		
2025	6.808088033	2.33386971	102.75668	45.2449223	0.5463646	1.7510714	22.08447501	23.8355464	1.7340565	5.976857402	7.7109139		82471.49356	82471.4936	4.34309378	13.1617863	181.29629	86683.5795
Daily - Winter (Max)																		
2025	6.679448303	2.23064928	108.32515	45.6330677	0.5463646	1.7510714	22.08447501	23.8355464	1.7340565	5.976857402	7.7109139		82510.99768	82510.9977	4.34342448	13.1618965	4.712231	86546.54068
2026	46.65120524	46.6254574	4.9436647	7.17776312	0.01271	0.1900592	0.144663512	0.32373001	0.1749604	0.033908896	0.1986501		1453.104577	1453.10458	0.05812826	0.02686433	0.0142009	1462.575386
Average Daily																		
2025	0.153883449	0.12009496	1.3750236	1.58806209	0.004013	0.0493236	0.087549009	0.13687258	0.0457331	0.025705296	0.0714384		512.0864082	512.086408	0.02330245	0.04106141	0.2567831	525.1620516
2026	0.714869019	0.70270828	0.5827478	0.83975734	0.0014593	0.0224827	0.010534726	0.03301746	0.0206951	0.002575608	0.0232707		165.9033952	165.903395	0.00659014	0.00296055	0.0242576	166.9746499
Annual																		
2025	0.028083729	0.02191733	0.2509418	0.28982133	0.0007324	0.0090016	0.015977694	0.02497925	0.0083463	0.004691217	0.0130375		84.78174879	84.7817488	0.00385799	0.00679818	0.0425134	86.94657077
2026	0.130463596	0.12824426	0.1063515	0.15325572	0.0002663	0.0041031	0.001922588	0.00602569	0.0037769	0.000470048	0.0042469		27.46720035	27.4672004	0.00109107	0.00049015	0.0040161	27.6445588

Construction

Off-Road Equipment EF

Conversion	1	g =	0.0022	lbs
	1	ton =	2000	lbs
	1	ton =	0.907	MT

Emission factor units are in g/bhp-hr 2026

Equipment	*Fuel*	*Tier*	*HP*	*TOG*	*ROG*	*NOx*	*CO*	*SO_2*	*PM10E*	*PM2.5E*	*CO_2*	*CH_4*	*N_2O*	*CO_2e*
Temporary Pumps														
Pumps	*Diesel*	*Tier 3*	*75−119.9*	*0.09*	*0.09*	*2.74*	*3.7*	*0.007*	*0.11*	*0.1*	*568*	*0.023*	*0.005*	

SOURCE: CalEEMod 2022.1.1.24

	HP	TOG	ROG	NOx	CO	SO_2	PM10E	PM2.5E	CO_2	CH_4	N_2O	CO_2e
Deutz D914L6 - lbs/hr	116	0.02	0.02	0.70	0.94	0.00	0.03	0.03	144.95	0.01	0.00	145.48
Deutz D914L6 - lbs/day for 3 engines @ 4 hrs/event each		0.28	0.28	8.39	11.33	0.02	0.34	0.31	1739.44	0.07	0.02	1745.77
Deutz D914L6 - ton/year for 3 events/year		4.13E-04	4.13E-04	1.26E-02	1.70E-02	3.22E-05	5.05E-04	4.59E-04	2.61	1.06E-04	2.30E-05	2.62
Convert ton/year to MT/year for CO2e												2.38

Technical data

Engine type		D 914 L6	TCD 914 L6
No. of cylinders		6	6
Bore/stroke	mm | in	102/132 |4.0/5.2	102/132 |4.0/5.2
Capacity	l | cu in	6.5 |397	6.5 |397
Compression ratio		21:1	19:1
Nominal speeds	min^{-1} | rpm	2300	2300

Power output[1]		D 914 L6	TCD 914 L6
Power output as per ISO 14396	kW | hp	86.5 |116	129.9 |174.2
at speed	min^{-1} | rpm	2300	2300
Max. torque	Nm | lb/ft	375 |276.6	650 |479.4
at speed	min^{-1} | rpm	1500	1600
Minimum idling speed	min^{-1} | rpm	650 - 700	650 - 700
Specific fuel consumption[2]	g/kWh | lb/hph	220 |0.362	220 |0.362
Weight as per DIN 70020 Part 7A[3]	kg | lb	420 |926	510 |1124

1) Gross capacity data without deduction of fan capacity
2) Best full load consumption without cooling system refers to diesel with a density of 0.835 kg/dm³ at 15°C | 6.96 lb/US gallon at 60° F.
3) Without starter/dynamo, cooler and fluids but with flywheel and flywheel housing.

The data on this data sheet are for information purposes only and are not binding values. The data in the quotation is definitive.

Client-provided datasheet for Deutz D914L6

https://assets.grpumps.com/spec_sheets/0451645.pdf

Results Summary - Hayward WPCF - Winter Beds, Pipeline, and Pumps

Updated: 30-May Project info for schedule, equipment, and contruction VMT.

Average Daily Construction-related Criteria Pollutant Emissions

Project Construction Year	Average Daily Emissions (pounds per day)						
	ROG	**NOX**	**Exhaust PM10**	**Exhaust PM2.5**	**CO**	**Fugitive PM10**	**Fugitive PM2.5**
2025	0.3	2.8	0.1	0.1	3.1	0.4	0.1
2026	0.2	1.9	0.1	0.1	2.2	0.3	0.1
BAAQMD Thresholds of Signifi	*54*	*54*	*82*	*54*	*N/A*	*N/A*	*N/A*
Threshold Exceeded?	**No**	**No**	**No**	**No**			

NOTE: Average daily emissions = [annual emissions (tons)] * [2000 (lbs/ton)] / [calculated number of workdays during the year (days)]

5.1 Construction Schedule

Construction Phase	**Start Date**	**End Date**		**Year**	**Start**	**End**	**Workdays**
Site Preparation	10/1/2025	1/1/2026	5	2025	10/1/2025	12/31/2025	66
Grading	10/1/2025	1/1/2026	5	2026	1/1/2026	1/1/2026	1
			5				
			5				
			5				
			5		2000		

CalEEMod Outputs

2.2 Construction Emissions by Year, Unmitigated

Year	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily - Summer (Max)																		
Daily - Winter (Max)																		
2025	0.334992876	0.25515775	2.878634	3.15567067	0.0087338	0.1087221	0.36340611	0.47212817	0.1011079	0.081681204	0.1827891		1223.271323	1223.27132	0.0555573	0.1274062	0.054396904	1262.681698
2026	0.314939488	0.2363712	2.654298	3.11528291	0.0087321	0.0963611	0.36340611	0.45976719	0.0862084	0.081681204	0.1678896		1207.685974	1207.68597	0.0551957	0.123877	0.051418318	1246.032633
Average Daily																		
2025	0.060375336	0.04600189	0.51425	0.56596594	0.0015724	0.0195742	0.06464115	0.08421537	0.0182034	0.01450927	0.0327127		220.2665766	220.266577	0.0099707	0.0229381	0.163208488	227.5146077
2026	0.000617355	0.00046326	0.005151	0.00607449	1.709E-05	0.0001886	0.00070262	0.00089119	0.0001687	0.000157709	0.0003264		2.363678578	2.36367858	0.000108	0.0002417	0.001672683	2.440087317
Annual																		
2025	0.011018499	0.00839534	0.093851	0.10328878	0.000287	0.0035723	0.01179701	0.01536931	0.0033221	0.002647942	0.0059701		36.46764543	36.4676454	0.0016508	0.0037977	0.027021028	37.66763969
2026	0.000112667	8.4544E-05	0.00094	0.00110859	3.119E-06	3.441E-05	0.00012823	0.00016264	3.079E-05	2.8782E-05	5.957E-05		0.391333963	0.39133396	1.788E-05	4.002E-05	0.000276932	0.403984302

Results Summary - Hayward WPCF - Phase II Improvements

Updated: 30-May CalEEMod defaults for everything, updated start date to 9/15/25 (same as PE EQ)

Average Daily Construction-related Criteria Pollutant Emissions

Project Construction Year	**Average Daily Emissions (pounds per day)**						
			Exhaust	**Exhaust**		**Fugitive**	**Fugitive**
	ROG	**NOX**	**PM10**	**PM2.5**	**CO**	**PM10**	**PM2.5**
2025	1.4	16.1	0.5	0.5	14.8	1.6	0.4
2026	4.5	9.7	0.3	0.3	11.6	0.2	0.1
BAAQMD Thresholds of Signifi	*54*	*54*	*82*	*54*	*N/A*	*N/A*	*N/A*
Threshold Exceeded?	**No**	**No**	**No**	**No**			

NOTE: Average daily emissions = [annual emissions (tons)] * [2000 (lbs/ton)] / [calculated number of workdays during the year (days)]

5.1 Construction Schedule

Construction Phase	**Start Date**	**End Date**		**Year**	**Start**	**End**	**Workdays**
Demolition	9/15/2025	10/13/2025	5	2025	9/15/2025	12/31/2025	78
Site Preparation	10/14/2025	10/18/2025	5	2026	1/1/2026	10/1/2026	196
Grading	10/19/2025	10/27/2025	5				
Building Construction	10/28/2025	9/1/2026	5				
Paving	9/2/2026	9/16/2026	5				
Architectural Coating	9/17/2026	10/1/2026	5		2000		

CalEEMod Outputs

2.2 Construction Emissions by Year, Unmitigated

Year	TOG	ROG	NOx	CO	SO_2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO_2	$NBCO_2$	CO_2T	CH_4	N_2O	R	CO_2e
Daily - Summer (Max)																		
2025	1.857660733	1.53012353	14.93781	15.9610488	0.0292919	0.583962	1.34278505	1.92674702	0.5384725	0.238223263	0.7766958		3415.339731	3415.33973	0.1460401	0.1554732	2.236288386	3467.558025
2026	65.29935131	65.2728102	10.46531	12.6122325	0.0249836	0.3641197	0.23385191	0.59797157	0.3352889	0.057791096	0.39308		2632.319476	2632.31948	0.1031256	0.0633732	1.307009367	2655.089832
Daily - Winter (Max)																		
2025	7.978800885	3.08202817	122.4653	53.9708553	0.6019501	2.1203554	24.0772213	26.1975767	2.082581	6.450639593	8.5332206		90213.33166	90213.3317	4.7267505	14.116541	5.050442525	94543.27994
2026	65.299004	65.272376	10.49647	12.5274581	0.0249836	0.3641197	0.23385191	0.59797157	0.3352889	0.057791096	0.39308		2620.451566	2620.45157	0.1039939	0.0638073	0.03395558	2642.099948
Average Daily																		
2025	0.397998844	0.30159692	3.438895	3.16533628	0.0101033	0.111912	0.34433186	0.45624388	0.1041481	0.09478483	0.1989329		1304.146915	1304.14692	0.0617802	0.1330615	0.824333882	1346.168083
2026	2.532650354	2.4068972	5.191729	6.24278793	0.0123003	0.1812936	0.11382151	0.29511515	0.1669329	0.028067638	0.1950005		1293.537712	1293.53771	0.0510712	0.0307346	0.27678795	1304.250197
Annual																		
2025	0.072634789	0.05504144	0.627598	0.57767387	0.0018438	0.0204239	0.06284056	0.08326451	0.019007	0.017298231	0.0363053		215.9164047	215.916405	0.0102284	0.0220299	0.136477881	222.8734885
2026	0.46220869	0.43925874	0.947491	1.1393088	0.0022448	0.0330861	0.02077242	0.05385851	0.0304652	0.005122344	0.0355876		214.15993	214.15993	0.0084554	0.0050885	0.045825404	215.9335041

Hayward WPCF - Admin Building 0530 UPDATE Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Hayward WPCF - Admin Building 0530 UPDATE
Construction Start Date	12/3/2024
Operational Year	2027
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.30
Precipitation (days)	30.0
Location	37.634527979106366, -122.12947046698942
County	Alameda
City	Hayward
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1695
EDFZ	1
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.24

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description

General Office Building	21.8	1000sqft	0.50	21,800	14,190	—	—	Administration Building
Parking Lot	23.7	1000sqft	0.54	0.00	0.00	—	—	Employee and visitor parking

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.31	1.09	9.08	10.4	0.02	0.33	0.08	0.41	0.30	0.02	0.32	—	1,957	1,957	0.08	0.03	0.50	1,968
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	23.6	23.5	51.9	27.6	0.22	1.15	10.8	12.0	1.10	3.46	4.56	—	33,282	33,282	1.73	5.04	1.80	34,829
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.43	1.29	5.56	6.19	0.01	0.20	0.14	0.34	0.18	0.05	0.23	—	1,314	1,314	0.05	0.05	0.29	1,329
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.26	0.24	1.02	1.13	< 0.005	0.04	0.03	0.06	0.03	0.01	0.04	—	218	218	0.01	0.01	0.05	220

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.31	1.09	9.08	10.4	0.02	0.33	0.08	0.41	0.30	0.02	0.32	—	1,957	1,957	0.08	0.03	0.50	1,968
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	2.02	1.67	16.6	16.9	0.03	0.69	0.90	1.58	0.63	0.17	0.80	—	3,350	3,350	0.14	0.14	0.06	3,396
2025	23.6	23.5	51.9	27.6	0.22	1.15	10.8	12.0	1.10	3.46	4.56	—	33,282	33,282	1.73	5.04	1.80	34,829
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.11	0.09	0.91	0.92	< 0.005	0.04	0.05	0.09	0.03	0.01	0.04	—	184	184	0.01	0.01	0.05	186
2025	1.43	1.29	5.56	6.19	0.01	0.20	0.14	0.34	0.18	0.05	0.23	—	1,314	1,314	0.05	0.05	0.29	1,329
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.02	0.02	0.17	0.17	< 0.005	0.01	0.01	0.02	0.01	< 0.005	0.01	—	30.4	30.4	< 0.005	< 0.005	0.01	30.8
2025	0.26	0.24	1.02	1.13	< 0.005	0.04	0.03	0.06	0.03	0.01	0.04	—	218	218	0.01	0.01	0.05	220

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.79	0.77	0.08	1.71	< 0.005	< 0.005	0.19	0.20	< 0.005	0.05	0.05	18.4	230	249	1.86	0.03	0.74	304
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.62	0.61	0.09	0.71	< 0.005	< 0.005	0.19	0.19	< 0.005	0.05	0.05	18.4	214	233	1.86	0.03	0.07	288

Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.70	0.69	0.09	1.15	< 0.005	< 0.005	0.19	0.19	< 0.005	0.05	0.05	18.4	217	236	1.86	0.03	0.35	291
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.13	0.13	0.02	0.21	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	3.04	36.0	39.0	0.31	< 0.005	0.06	48.2

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.09	0.08	0.07	0.76	< 0.005	< 0.005	0.19	0.19	< 0.005	0.05	0.05	—	212	212	0.01	0.01	0.68	215
Area	0.70	0.69	0.01	0.95	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.90	3.90	< 0.005	< 0.005	—	3.91
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—	7.42	14.5	21.9	0.76	0.02	—	46.5
Waste	—	—	—	—	—	—	—	—	—	—	—	10.9	0.00	10.9	1.09	0.00	—	38.2
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.05	0.05
Total	0.79	0.77	0.08	1.71	< 0.005	< 0.005	0.19	0.20	< 0.005	0.05	0.05	18.4	230	249	1.86	0.03	0.74	304
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.09	0.08	0.09	0.71	< 0.005	< 0.005	0.19	0.19	< 0.005	0.05	0.05	—	200	200	0.01	0.01	0.02	203
Area	0.53	0.53	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—	7.42	14.5	21.9	0.76	0.02	—	46.5
Waste	—	—	—	—	—	—	—	—	—	—	—	10.9	0.00	10.9	1.09	0.00	—	38.2
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.05	0.05

Total	0.62	0.61	0.09	0.71	< 0.005	< 0.005	0.19	0.19	< 0.005	0.05	0.05	18.4	214	233	1.86	0.03	0.07	288
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.09	0.08	0.08	0.69	< 0.005	< 0.005	0.19	0.19	< 0.005	0.05	0.05	—	201	201	0.01	0.01	0.29	204
Area	0.62	0.61	< 0.005	0.47	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.92	1.92	< 0.005	< 0.005	—	1.93
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—	7.42	14.5	21.9	0.76	0.02	—	46.5
Waste	—	—	—	—	—	—	—	—	—	—	—	10.9	0.00	10.9	1.09	0.00	—	38.2
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.05	0.05
Total	0.70	0.69	0.09	1.15	< 0.005	< 0.005	0.19	0.19	< 0.005	0.05	0.05	18.4	217	236	1.86	0.03	0.35	291
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.02	0.01	0.01	0.13	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	33.3	33.3	< 0.005	< 0.005	0.05	33.8
Area	0.11	0.11	< 0.005	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.32	0.32	< 0.005	< 0.005	—	0.32
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—	1.23	2.40	3.62	0.13	< 0.005	—	7.69
Waste	—	—	—	—	—	—	—	—	—	—	—	1.81	0.00	1.81	0.18	0.00	—	6.33
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01
Total	0.13	0.13	0.02	0.21	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	3.04	36.0	39.0	0.31	< 0.005	0.06	48.2

3. Construction Emissions Details

3.1. Demolition (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.92	1.61	15.6	16.0	0.02	0.67	—	0.67	0.62	—	0.62	—	2,494	2,494	0.10	0.02	—	2,502
Demolition	—	—	—	—	—	—	0.60	0.60	—	0.09	0.09	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.85	0.88	< 0.005	0.04	—	0.04	0.03	—	0.03	—	137	137	0.01	< 0.005	—	137
Demolition	—	—	—	—	—	—	0.03	0.03	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.16	0.16	< 0.005	0.01	—	0.01	0.01	—	0.01	—	22.6	22.6	< 0.005	< 0.005	—	22.7
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.04	0.46	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	102	102	< 0.005	< 0.005	0.01	104
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.06	0.02	0.97	0.37	< 0.005	0.01	0.20	0.21	0.01	0.05	0.07	—	754	754	0.04	0.12	0.04	790
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.65	5.65	< 0.005	< 0.005	0.01	5.73
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	41.3	41.3	< 0.005	0.01	0.04	43.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.94	0.94	< 0.005	< 0.005	< 0.005	0.95
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.83	6.83	< 0.005	< 0.005	0.01	7.17

3.3. Site Preparation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.56	1.31	12.1	12.1	0.02	0.56	—	0.56	0.52	—	0.52	—	2,065	2,065	0.08	0.02	—	2,072
Dust From Material Movement	—	—	—	—	—	—	2.55	2.55	—	1.19	1.19	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.01	0.01	0.07	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.3	11.3	< 0.005	< 0.005	—	11.4
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.87	1.87	< 0.005	< 0.005	—	1.88
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.26	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	60.2	60.2	< 0.005	< 0.005	0.01	61.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	2.33	0.67	39.8	15.2	0.21	0.59	8.23	8.82	0.59	2.25	2.84	—	31,157	31,157	1.64	5.02	1.80	32,696
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.33	0.33	< 0.005	< 0.005	< 0.005	0.34
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.21	0.08	< 0.005	< 0.005	0.04	0.05	< 0.005	0.01	0.02	—	171	171	0.01	0.03	0.16	179
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.06	0.06	< 0.005	< 0.005	< 0.005	0.06
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	28.3	28.3	< 0.005	< 0.005	0.03	29.7

3.5. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.80	1.51	14.1	14.5	0.02	0.64	—	0.64	0.59	—	0.59	—	2,455	2,455	0.10	0.02	—	2,463
Dust From Material Movement	—	—	—	—	—	—	2.76	2.76	—	1.34	1.34	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.15	0.16	< 0.005	0.01	—	0.01	0.01	—	0.01	—	26.9	26.9	< 0.005	< 0.005	—	27.0
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.45	4.45	< 0.005	< 0.005	—	4.47
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.34	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	80.3	80.3	< 0.005	< 0.005	0.01	81.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.89	0.89	< 0.005	< 0.005	< 0.005	0.90
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.15	0.15	< 0.005	< 0.005	< 0.005	0.15
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.28	1.07	8.95	10.0	0.02	0.33	—	0.33	0.30	—	0.30	—	1,801	1,801	0.07	0.01	—	1,807
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.28	1.07	8.95	10.0	0.02	0.33	—	0.33	0.30	—	0.30	—	1,801	1,801	0.07	0.01	—	1,807
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.70	0.58	4.90	5.50	0.01	0.18	—	0.18	0.17	—	0.17	—	987	987	0.04	0.01	—	990
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.89	1.00	< 0.005	0.03	—	0.03	0.03	—	0.03	—	163	163	0.01	< 0.005	—	164
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.27	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	60.4	60.4	< 0.005	< 0.005	0.24	61.4
Vendor	0.01	< 0.005	0.12	0.05	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	95.2	95.2	< 0.005	0.01	0.26	99.6
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.24	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	56.0	56.0	< 0.005	< 0.005	0.01	56.8
Vendor	0.01	< 0.005	0.12	0.05	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	95.2	95.2	< 0.005	0.01	0.01	99.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.13	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	30.9	30.9	< 0.005	< 0.005	0.06	31.4
Vendor	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	52.2	52.2	< 0.005	0.01	0.06	54.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.12	5.12	< 0.005	< 0.005	0.01	5.20
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.64	8.64	< 0.005	< 0.005	0.01	9.03
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Paving (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.59	0.49	4.63	6.50	0.01	0.20	—	0.20	0.19	—	0.19	—	992	992	0.04	0.01	—	995
Paving	0.14	0.14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.13	0.18	< 0.005	0.01	—	0.01	0.01	—	0.01	—	27.2	27.2	< 0.005	< 0.005	—	27.3
Paving	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.50	4.50	< 0.005	< 0.005	—	4.51
Paving	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.04	0.43	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	100	100	< 0.005	< 0.005	0.01	102
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.77	2.77	< 0.005	< 0.005	0.01	2.81
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.46	0.46	< 0.005	< 0.005	< 0.005	0.47

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Architectural Coating (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	0.88	1.14	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	23.4	23.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.66	3.66	< 0.005	< 0.005	—	3.67
Architectural Coatings	0.64	0.64	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.61	0.61	< 0.005	< 0.005	—	0.61

Architect Coatings	0.12	0.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.2	11.2	< 0.005	< 0.005	< 0.005	11.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.31	0.31	< 0.005	< 0.005	< 0.005	0.31
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.05	0.05	< 0.005	< 0.005	< 0.005	0.05
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Office Building	0.09	0.08	0.07	0.76	< 0.005	< 0.005	0.19	0.19	< 0.005	0.05	0.05	—	212	212	0.01	0.01	0.68	215
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.09	0.08	0.07	0.76	< 0.005	< 0.005	0.19	0.19	< 0.005	0.05	0.05	—	212	212	0.01	0.01	0.68	215
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Office Building	0.09	0.08	0.09	0.71	< 0.005	< 0.005	0.19	0.19	< 0.005	0.05	0.05	—	200	200	0.01	0.01	0.02	203
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.09	0.08	0.09	0.71	< 0.005	< 0.005	0.19	0.19	< 0.005	0.05	0.05	—	200	200	0.01	0.01	0.02	203
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Office Building	0.02	0.01	0.01	0.13	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	33.3	33.3	< 0.005	< 0.005	0.05	33.8
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.02	0.01	0.01	0.13	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	33.3	33.3	< 0.005	< 0.005	0.05	33.8

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Office Building	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Office Building	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Office Building	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.47	0.47	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.06	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.17	0.16	0.01	0.95	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.90	3.90	< 0.005	< 0.005	—	3.91
Total	0.70	0.69	0.01	0.95	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.90	3.90	< 0.005	< 0.005	—	3.91
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.47	0.47	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.06	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.53	0.53	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.09	0.09	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.02	0.01	< 0.005	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.32	0.32	< 0.005	< 0.005	—	0.32
Total	0.11	0.11	< 0.005	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.32	0.32	< 0.005	< 0.005	—	0.32

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Office Building	—	—	—	—	—	—	—	—	—	—	—	7.42	14.5	21.9	0.76	0.02	—	46.5
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	7.42	14.5	21.9	0.76	0.02	—	46.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Office Building	—	—	—	—	—	—	—	—	—	—	—	7.42	14.5	21.9	0.76	0.02	—	46.5
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	7.42	14.5	21.9	0.76	0.02	—	46.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Office Building	—	—	—	—	—	—	—	—	—	—	—	1.23	2.40	3.62	0.13	< 0.005	—	7.69
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	1.23	2.40	3.62	0.13	< 0.005	—	7.69

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Office Building	—	—	—	—	—	—	—	—	—	—	—	10.9	0.00	10.9	1.09	0.00	—	38.2
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	10.9	0.00	10.9	1.09	0.00	—	38.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Office Building	—	—	—	—	—	—	—	—	—	—	—	10.9	0.00	10.9	1.09	0.00	—	38.2
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	10.9	0.00	10.9	1.09	0.00	—	38.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Office Building	—	—	—	—	—	—	—	—	—	—	—	1.81	0.00	1.81	0.18	0.00	—	6.33
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	1.81	0.00	1.81	0.18	0.00	—	6.33

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.05	0.05
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.05	0.05
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.05	0.05
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.05	0.05
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Remove	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	12/3/2024	12/31/2024	5.00	20.0	—
Site Preparation	Site Preparation	1/1/2025	1/3/2025	5.00	2.00	—
Grading	Grading	1/4/2025	1/9/2025	5.00	4.00	—
Building Construction	Building Construction	1/10/2025	10/17/2025	5.00	200	—
Paving	Paving	10/18/2025	11/1/2025	5.00	10.0	—
Architectural Coating	Architectural Coating	11/2/2025	11/16/2025	5.00	10.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37
Demolition	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Site Preparation	Graders	Diesel	Average	1.00	8.00	148	0.41
Site Preparation	Rubber Tired Dozers	Diesel	Average	1.00	7.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	7.00	84.0	0.37
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Building Construction	Cranes	Diesel	Average	1.00	6.00	367	0.29
Building Construction	Forklifts	Diesel	Average	1.00	6.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74

Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	1.00	6.00	84.0	0.37
Building Construction	Welders	Diesel	Average	3.00	8.00	46.0	0.45
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Paving	Pavers	Diesel	Average	1.00	6.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	1.00	7.00	36.0	0.38
Paving	Cement and Mortar Mixers	Diesel	Average	1.00	6.00	10.0	0.56
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	12.5	11.7	LDA,LDT1,LDT2
Demolition	Vendor	—	8.40	HHDT,MHDT
Demolition	Hauling	10.6	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	7.50	11.7	LDA,LDT1,LDT2
Site Preparation	Vendor	—	8.40	HHDT,MHDT
Site Preparation	Hauling	444	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	10.0	11.7	LDA,LDT1,LDT2

Grading	Vendor	—	8.40	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	6.98	11.7	LDA,LDT1,LDT2
Building Construction	Vendor	3.57	8.40	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	12.5	11.7	LDA,LDT1,LDT2
Paving	Vendor	—	8.40	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	1.40	11.7	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	8.40	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	32,700	10,900	1,422

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Ton of Debris)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	843	—
Site Preparation	4,100	3,000	1.88	0.00	—
Grading	—	—	4.00	0.00	—
Paving	0.00	0.00	0.00	0.00	0.54

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%
Water Demolished Area	2	36%	36%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
General Office Building	0.00	0%
Parking Lot	0.54	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O

2024	0.00	204	0.03	< 0.005
2025	0.00	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
General Office Building	24.2	24.2	24.2	8,832	274	274	274	100,111
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	32,700	10,900	1,422

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
General Office Building	0.00	204	0.0330	0.0040	0.00
Parking Lot	0.00	204	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
General Office Building	3,874,596	161,217
Parking Lot	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
General Office Building	20.3	—
Parking Lot	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
General Office Building	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00

General Office Building	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	9.92	annual days of extreme heat
Extreme Precipitation	4.05	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	14.5	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	1	0	0	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	1	1	1	2
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	11.6
AQ-PM	27.9
AQ-DPM	27.6
Drinking Water	6.88
Lead Risk Housing	31.2
Pesticides	0.00
Toxic Releases	70.6
Traffic	85.1
Effect Indicators	—
CleanUp Sites	99.0
Groundwater	98.1
Haz Waste Facilities/Generators	99.4
Impaired Water Bodies	87.0
Solid Waste	98.9
Sensitive Population	—
Asthma	90.1
Cardio-vascular	78.1
Low Birth Weights	81.2
Socioeconomic Factor Indicators	—

Education	50.5
Housing	12.0
Linguistic	35.3
Poverty	34.7
Unemployment	30.9

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	89.285256
Employed	95.85525472
Median HI	85.82060824
Education	—
Bachelor's or higher	68.16373669
High school enrollment	100
Preschool enrollment	43.9753625
Transportation	—
Auto Access	70.20402926
Active commuting	43.82137816
Social	—
2-parent households	92.30078275
Voting	47.87629924
Neighborhood	—
Alcohol availability	73.42486847
Park access	41.52444501
Retail density	62.04285898

Supermarket access	34.46682921
Tree canopy	39.94610548
Housing	—
Homeownership	97.51058642
Housing habitability	75.01604004
Low-inc homeowner severe housing cost burden	79.19928141
Low-inc renter severe housing cost burden	19.49185166
Uncrowded housing	45.59219813
Health Outcomes	—
Insured adults	81.30373412
Arthritis	78.8
Asthma ER Admissions	10.3
High Blood Pressure	86.5
Cancer (excluding skin)	55.0
Asthma	95.7
Coronary Heart Disease	85.5
Chronic Obstructive Pulmonary Disease	92.7
Diagnosed Diabetes	62.8
Life Expectancy at Birth	38.0
Cognitively Disabled	64.4
Physically Disabled	36.0
Heart Attack ER Admissions	16.0
Mental Health Not Good	89.0
Chronic Kidney Disease	79.8
Obesity	95.5
Pedestrian Injuries	66.9
Physical Health Not Good	86.2

Stroke	80.6
Health Risk Behaviors	—
Binge Drinking	86.1
Current Smoker	87.7
No Leisure Time for Physical Activity	63.5
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	11.5
Children	79.8
Elderly	44.5
English Speaking	39.5
Foreign-born	75.8
Outdoor Workers	65.0
Climate Change Adaptive Capacity	—
Impervious Surface Cover	46.9
Traffic Density	70.0
Traffic Access	56.4
Other Indices	—
Hardship	31.7
Other Decision Support	—
2016 Voting	40.4

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	74.0
Healthy Places Index Score for Project Location (b)	86.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes

Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Demolition	"Site Prep" used to account for VMT associated with hauling paved area removed for building construction.
Construction: Off-Road Equipment	No generator required during construction per client info.
Operations: Vehicle Data	Operations will be assumed same as existing conditions, but with up to 12 additional employees and 1 additional bi-weekly delivery. Trip rate of 1.11 per 1000 sf yields 21.8 sf * 1.11 trips/ksf/day = 24.14 trips/day to represent daily trips for 12 new employees and 1 additional bi-weekly delivery (1/14*2=0.14 trip/day for additional delivery). Assume additional employees present 7 days per week. Default for all other metrics.
Operations: Energy Use	Energy use of facilities will be considered same as existing conditions and therefore not modeled.

Hayward WPCF - PE EQ START 20250915 Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Hayward WPCF - PE EQ START 20250915
Construction Start Date	9/15/2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.30
Precipitation (days)	30.0
Location	37.63467245655896, -122.12870094470256
County	Alameda
City	Hayward
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1695
EDFZ	1
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.24

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
User Defined Commercial	1.00	User Defined Unit	0.50	21,804	0.00	—	—	PE EQ Basin

Other Asphalt Surfaces	18.2	1000sqft	0.42	0.00	0.00	—	—	Total imperveous surfaces

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	6.81	2.33	103	45.2	0.55	1.75	22.1	23.8	1.73	5.98	7.71	—	82,471	82,471	4.34	13.2	181	86,684
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	46.7	46.6	108	45.6	0.55	1.75	22.1	23.8	1.73	5.98	7.71	—	82,511	82,511	4.34	13.2	4.71	86,547
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.71	0.70	1.38	1.59	< 0.005	0.05	0.09	0.14	0.05	0.03	0.07	—	512	512	0.02	0.04	0.26	525
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.13	0.13	0.25	0.29	< 0.005	0.01	0.02	0.02	0.01	< 0.005	0.01	—	84.8	84.8	< 0.005	0.01	0.04	86.9

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	6.81	2.33	103	45.2	0.55	1.75	22.1	23.8	1.73	5.98	7.71	—	82,471	82,471	4.34	13.2	181	86,684
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	6.68	2.23	108	45.6	0.55	1.75	22.1	23.8	1.73	5.98	7.71	—	82,511	82,511	4.34	13.2	4.71	86,547
2026	46.7	46.6	4.94	7.18	0.01	0.19	0.14	0.32	0.17	0.03	0.20	—	1,453	1,453	0.06	0.03	0.01	1,463
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.15	0.12	1.38	1.59	< 0.005	0.05	0.09	0.14	0.05	0.03	0.07	—	512	512	0.02	0.04	0.26	525
2026	0.71	0.70	0.58	0.84	< 0.005	0.02	0.01	0.03	0.02	< 0.005	0.02	—	166	166	0.01	< 0.005	0.02	167
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.03	0.02	0.25	0.29	< 0.005	0.01	0.02	0.02	0.01	< 0.005	0.01	—	84.8	84.8	< 0.005	0.01	0.04	86.9
2026	0.13	0.13	0.11	0.15	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	27.5	27.5	< 0.005	< 0.005	< 0.005	27.6

3. Construction Emissions Details

3.1. Demolition (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.56	0.47	4.33	5.65	0.01	0.16	—	0.16	0.14	—	0.14	—	852	852	0.03	0.01	—	855
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.12	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	23.3	23.3	< 0.005	< 0.005	—	23.4
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.87	3.87	< 0.005	< 0.005	—	3.88
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.38	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	86.6	86.6	< 0.005	< 0.005	0.34	87.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.22	2.22	< 0.005	< 0.005	< 0.005	2.25

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.37	0.37	< 0.005	< 0.005	< 0.005	0.37
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Site Preparation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.56	0.47	4.16	5.57	0.01	0.21	—	0.21	0.20	—	0.20	—	859	859	0.03	0.01	—	862
Dust From Material Movement	—	—	—	—	—	—	0.48	0.48	—	0.06	0.06	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.56	0.47	4.16	5.57	0.01	0.21	—	0.21	0.20	—	0.20	—	859	859	0.03	0.01	—	862
Dust From Material Movement	—	—	—	—	—	—	0.48	0.48	—	0.06	0.06	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.35	2.35	< 0.005	< 0.005	—	2.36
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.39	0.39	< 0.005	< 0.005	—	0.39
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.19	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	43.3	43.3	< 0.005	< 0.005	0.17	44.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	6.23	1.85	98.6	39.5	0.54	1.54	21.6	23.1	1.54	5.90	7.44	—	81,569	81,569	4.31	13.2	181	85,778
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.17	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	40.2	40.2	< 0.005	< 0.005	< 0.005	40.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	6.10	1.74	104	39.9	0.54	1.54	21.6	23.1	1.54	5.90	7.44	—	81,612	81,612	4.31	13.2	4.71	85,644
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.11	0.11	< 0.005	< 0.005	< 0.005	0.11
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	< 0.005	0.28	0.11	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	224	224	0.01	0.04	0.21	235
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.02	0.02	< 0.005	< 0.005	< 0.005	0.02
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	37.0	37.0	< 0.005	0.01	0.04	38.9

3.5. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.29	1.09	10.1	10.0	0.02	0.46	—	0.46	0.43	—	0.43	—	1,714	1,714	0.07	0.01	—	1,720
Dust From Material Movement	—	—	—	—	—	—	2.07	2.07	—	1.00	1.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.01	0.01	0.06	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.39	9.39	< 0.005	< 0.005	—	9.42
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.55	1.55	< 0.005	< 0.005	—	1.56
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.26	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	60.2	60.2	< 0.005	< 0.005	0.01	61.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.33	0.33	< 0.005	< 0.005	< 0.005	0.34
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.06	0.06	< 0.005	< 0.005	< 0.005	0.06
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.62	0.52	5.14	6.94	0.01	0.22	—	0.22	0.20	—	0.20	—	1,305	1,305	0.05	0.01	—	1,309
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.89	1.19	< 0.005	0.04	—	0.04	0.03	—	0.03	—	225	225	0.01	< 0.005	—	225
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.16	0.22	< 0.005	0.01	—	0.01	0.01	—	0.01	—	37.2	37.2	< 0.005	< 0.005	—	37.3
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.24	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	56.0	56.0	< 0.005	< 0.005	0.01	56.8
Vendor	0.01	< 0.005	0.12	0.05	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	95.3	95.3	< 0.005	0.01	0.01	99.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.72	9.72	< 0.005	< 0.005	0.02	9.87
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	16.4	16.4	< 0.005	< 0.005	0.02	17.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.61	1.61	< 0.005	< 0.005	< 0.005	1.63
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.71	2.71	< 0.005	< 0.005	< 0.005	2.84
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.59	0.49	4.81	6.91	0.01	0.19	—	0.19	0.17	—	0.17	—	1,304	1,304	0.05	0.01	—	1,309

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.50	0.72	< 0.005	0.02	—	0.02	0.02	—	0.02	—	135	135	0.01	< 0.005	—	136
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.09	0.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	22.4	22.4	< 0.005	< 0.005	—	22.5
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.22	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	55.0	55.0	< 0.005	< 0.005	0.01	55.8
Vendor	0.01	< 0.005	0.12	0.05	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	93.6	93.6	< 0.005	0.01	0.01	97.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.74	5.74	< 0.005	< 0.005	0.01	5.83
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.71	9.71	< 0.005	< 0.005	0.01	10.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.95	0.95	< 0.005	< 0.005	< 0.005	0.96
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.61	1.61	< 0.005	< 0.005	< 0.005	1.68
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Paving (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.59	0.49	4.24	5.30	0.01	0.18	—	0.18	0.16	—	0.16	—	823	823	0.03	0.01	—	826
Paving	0.22	0.22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.3	11.3	< 0.005	< 0.005	—	11.3
Paving	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.87	1.87	< 0.005	< 0.005	—	1.87
Paving	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.05	0.56	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	138	138	< 0.005	0.01	0.01	140
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.90	1.90	< 0.005	< 0.005	< 0.005	1.93
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.31	0.31	< 0.005	< 0.005	< 0.005	0.32
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.13. Architectural Coating (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	0.86	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	46.5	46.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.83	1.83	< 0.005	< 0.005	—	1.84
Architectural Coatings	0.64	0.64	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.30	0.30	< 0.005	< 0.005	—	0.30
Architectural Coatings	0.12	0.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.0	11.0	< 0.005	< 0.005	< 0.005	11.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.15	0.15	< 0.005	< 0.005	< 0.005	0.15
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.03	0.03	< 0.005	< 0.005	< 0.005	0.03
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.15. Temporary Pumps (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description

Demolition	Demolition	9/15/2025	9/29/2025	5.00	10.0	—
Site Preparation	Site Preparation	9/30/2025	10/1/2025	5.00	1.00	—
Grading	Grading	10/2/2025	10/4/2025	5.00	2.00	—
Building Construction	Building Construction	10/5/2025	2/22/2026	5.00	100	—
Paving	Paving	2/23/2026	3/2/2026	5.00	5.00	—
Architectural Coating	Architectural Coating	3/3/2026	3/10/2026	5.00	5.00	—
Temporary Pumps	Trenching	1/1/2026	3/10/2026	7.00	69.0	temporary pumps for winter drying beds

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Tractors/Loaders/Backhoes	Diesel	Average	2.00	6.00	84.0	0.37
Demolition	Rubber Tired Dozers	Diesel	Average	1.00	1.00	367	0.40
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Site Preparation	Graders	Diesel	Average	1.00	8.00	148	0.41
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	6.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	6.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	4.00	367	0.29
Building Construction	Forklifts	Diesel	Average	2.00	6.00	82.0	0.20
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37

Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Paving	Cement and Mortar Mixers	Diesel	Average	4.00	6.00	10.0	0.56
Paving	Pavers	Diesel	Average	1.00	7.00	81.0	0.42
Paving	Rollers	Diesel	Average	1.00	7.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	10.0	11.7	LDA,LDT1,LDT2
Demolition	Vendor	—	8.40	HHDT,MHDT
Demolition	Hauling	0.00	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	5.00	11.7	LDA,LDT1,LDT2
Site Preparation	Vendor	—	8.40	HHDT,MHDT
Site Preparation	Hauling	1,163	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	7.50	11.7	LDA,LDT1,LDT2
Grading	Vendor	—	8.40	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—

Building Construction	Worker	6.98	11.7	LDA,LDT1,LDT2
Building Construction	Vendor	3.57	8.40	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	17.5	11.7	LDA,LDT1,LDT2
Paving	Vendor	—	8.40	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	1.40	11.7	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	8.40	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT
Temporary Pumps	—	—	—	—
Temporary Pumps	Worker	0.00	11.7	LDA,LDT1,LDT2
Temporary Pumps	Vendor	—	8.40	HHDT,MHDT
Temporary Pumps	Hauling	0.00	20.0	HHDT
Temporary Pumps	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	32,706	10,902	1,090

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	—	—
Site Preparation	1,700	7,600	0.50	0.00	—
Grading	—	—	1.50	0.00	—
Paving	0.00	0.00	0.00	0.00	0.42

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
User Defined Commercial	0.00	0%
Other Asphalt Surfaces	0.42	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	204	0.03	< 0.005

2026	0.00	204	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	9.92	annual days of extreme heat
Extreme Precipitation	4.05	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth

Wildfire	14.5	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	1	0	0	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A

Extreme Precipitation	1	1	1	2
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	11.6
AQ-PM	27.9
AQ-DPM	27.6
Drinking Water	6.88
Lead Risk Housing	31.2
Pesticides	0.00
Toxic Releases	70.6
Traffic	85.1

Effect Indicators	—
CleanUp Sites	99.0
Groundwater	98.1
Haz Waste Facilities/Generators	99.4
Impaired Water Bodies	87.0
Solid Waste	98.9
Sensitive Population	—
Asthma	90.1
Cardio-vascular	78.1
Low Birth Weights	81.2
Socioeconomic Factor Indicators	—
Education	50.5
Housing	12.0
Linguistic	35.3
Poverty	34.7
Unemployment	30.9

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	89.285256
Employed	95.85525472
Median HI	85.82060824
Education	—
Bachelor's or higher	68.16373669
High school enrollment	100

Preschool enrollment	43.9753625
Transportation	—
Auto Access	70.20402926
Active commuting	43.82137816
Social	—
2-parent households	92.30078275
Voting	47.87629924
Neighborhood	—
Alcohol availability	73.42486847
Park access	41.52444501
Retail density	62.04285898
Supermarket access	34.46682921
Tree canopy	39.94610548
Housing	—
Homeownership	97.51058642
Housing habitability	75.01604004
Low-inc homeowner severe housing cost burden	79.19928141
Low-inc renter severe housing cost burden	19.49185166
Uncrowded housing	45.59219813
Health Outcomes	—
Insured adults	81.30373412
Arthritis	78.8
Asthma ER Admissions	10.3
High Blood Pressure	86.5
Cancer (excluding skin)	55.0
Asthma	95.7
Coronary Heart Disease	85.5

Chronic Obstructive Pulmonary Disease	92.7
Diagnosed Diabetes	62.8
Life Expectancy at Birth	38.0
Cognitively Disabled	64.4
Physically Disabled	36.0
Heart Attack ER Admissions	16.0
Mental Health Not Good	89.0
Chronic Kidney Disease	79.8
Obesity	95.5
Pedestrian Injuries	66.9
Physical Health Not Good	86.2
Stroke	80.6
Health Risk Behaviors	—
Binge Drinking	86.1
Current Smoker	87.7
No Leisure Time for Physical Activity	63.5
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	11.5
Children	79.8
Elderly	44.5
English Speaking	39.5
Foreign-born	75.8
Outdoor Workers	65.0
Climate Change Adaptive Capacity	—
Impervious Surface Cover	46.9
Traffic Density	70.0

Traffic Access	56.4
Other Indices	—
Hardship	31.7
Other Decision Support	—
2016 Voting	40.4

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	74.0
Healthy Places Index Score for Project Location (b)	86.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Land use represents PE EQ tanks as a facility

Construction: Off-Road Equipment	Added 3x 116 hp pumps as a trenching construction phase occurring after 1/1/2026 to reflect when the winter drying beds are filled via pumps through the temporary pipeline during extremely high flow conditions. This is a temporary arrangement during simultaneous construction of the new PE EQ facility and Phase II improvements, and only required during extremely high flow conditions. Anticipated to only occur up to 3 times per year for 2 years for 4 hours per event during construction. Hours per day for this phase reflects expected annual use (3 events/yr * 4 hrs/event) = 12 hrs/year for 2 years all occurring during the 69 days that the model covers during 2026. (24 hrs / 69 days) = 0.35 hrs/day to ensure that construction calculations account for all expected pump use.

Hayward WPCF - Winter Beds, Pipeline, Pumps Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Hayward WPCF - Winter Beds, Pipeline, Pumps
Construction Start Date	10/1/2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.30
Precipitation (days)	30.0
Location	37.635461549216004, -122.13720208416203
County	Alameda
City	Hayward
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1695
EDFZ	1
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.24

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
User Defined Commercial	1.00	User Defined Unit	0.10	0.00	0.00	—	—	Pipeline

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.33	0.26	2.88	3.16	0.01	0.11	0.36	0.47	0.10	0.08	0.18	—	1,223	1,223	0.06	0.13	0.05	1,263
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.06	0.05	0.51	0.57	< 0.005	0.02	0.06	0.08	0.02	0.01	0.03	—	220	220	0.01	0.02	0.16	228
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.01	0.01	0.09	0.10	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	0.01	—	36.5	36.5	< 0.005	< 0.005	0.03	37.7

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.33	0.26	2.88	3.16	0.01	0.11	0.36	0.47	0.10	0.08	0.18	—	1,223	1,223	0.06	0.13	0.05	1,263

2026	0.31	0.24	2.65	3.12	0.01	0.10	0.36	0.46	0.09	0.08	0.17	—	1,208	1,208	0.06	0.12	0.05	1,246
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.06	0.05	0.51	0.57	< 0.005	0.02	0.06	0.08	0.02	0.01	0.03	—	220	220	0.01	0.02	0.16	228
2026	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.36	2.36	< 0.005	< 0.005	< 0.005	2.44
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.01	0.01	0.09	0.10	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	0.01	—	36.5	36.5	< 0.005	< 0.005	0.03	37.7
2026	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.39	0.39	< 0.005	< 0.005	< 0.005	0.40

3. Construction Emissions Details

3.1. Site Preparation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.93	1.25	< 0.005	0.05	—	0.05	0.04	—	0.04	—	192	192	0.01	< 0.005	—	193
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.02	0.02	0.17	0.22	< 0.005	0.01	—	0.01	0.01	—	0.01	—	34.6	34.6	< 0.005	< 0.005	—	34.7
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.73	5.73	< 0.005	< 0.005	—	5.75
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.14	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	32.1	32.1	< 0.005	< 0.005	< 0.005	32.6
Vendor	0.01	< 0.005	0.14	0.06	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	107	107	< 0.005	0.02	0.01	111
Hauling	0.02	0.01	0.36	0.14	< 0.005	0.01	0.07	0.08	0.01	0.02	0.03	—	281	281	0.01	0.05	0.02	295
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.82	5.82	< 0.005	< 0.005	0.01	5.91
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	19.2	19.2	< 0.005	< 0.005	0.02	20.1
Hauling	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	50.5	50.5	< 0.005	0.01	0.05	53.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.96	0.96	< 0.005	< 0.005	< 0.005	0.98
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.18	3.18	< 0.005	< 0.005	< 0.005	3.32
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.36	8.36	< 0.005	< 0.005	0.01	8.79

3.3. Site Preparation (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.84	1.24	< 0.005	0.04	—	0.04	0.04	—	0.04	—	192	192	0.01	< 0.005	—	193
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.38	0.38	< 0.005	< 0.005	—	0.38
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.06	0.06	< 0.005	< 0.005	—	0.06
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.13	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	31.5	31.5	< 0.005	< 0.005	< 0.005	32.0
Vendor	0.01	< 0.005	0.13	0.06	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	105	105	< 0.005	0.02	0.01	110
Hauling	0.02	0.01	0.35	0.13	< 0.005	0.01	0.07	0.08	< 0.005	0.02	0.02	—	275	275	0.01	0.04	0.02	289
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.06	0.06	< 0.005	< 0.005	< 0.005	0.06
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.21	0.21	< 0.005	< 0.005	< 0.005	0.21
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.54	0.54	< 0.005	< 0.005	< 0.005	0.57
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.03	0.03	< 0.005	< 0.005	< 0.005	0.04
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.09	0.09	< 0.005	< 0.005	< 0.005	0.09

3.5. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.93	1.25	< 0.005	0.05	—	0.05	0.04	—	0.04	—	192	192	0.01	< 0.005	—	193
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.17	0.22	< 0.005	0.01	—	0.01	0.01	—	0.01	—	34.6	34.6	< 0.005	< 0.005	—	34.7
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.73	5.73	< 0.005	< 0.005	—	5.75
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.14	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	32.1	32.1	< 0.005	< 0.005	< 0.005	32.6
Vendor	0.01	< 0.005	0.14	0.06	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	107	107	< 0.005	0.02	0.01	111
Hauling	0.02	0.01	0.36	0.14	< 0.005	0.01	0.07	0.08	0.01	0.02	0.03	—	281	281	0.01	0.05	0.02	295
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.82	5.82	< 0.005	< 0.005	0.01	5.91
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	19.2	19.2	< 0.005	< 0.005	0.02	20.1
Hauling	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	50.5	50.5	< 0.005	0.01	0.05	53.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.96	0.96	< 0.005	< 0.005	< 0.005	0.98
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.18	3.18	< 0.005	< 0.005	< 0.005	3.32
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.36	8.36	< 0.005	< 0.005	0.01	8.79

3.7. Grading (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.84	1.24	< 0.005	0.04	—	0.04	0.04	—	0.04	—	192	192	0.01	< 0.005	—	193

Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.38	0.38	< 0.005	< 0.005	—	0.38
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.06	0.06	< 0.005	< 0.005	—	0.06
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.13	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	31.5	31.5	< 0.005	< 0.005	< 0.005	32.0
Vendor	0.01	< 0.005	0.13	0.06	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	105	105	< 0.005	0.02	0.01	110
Hauling	0.02	0.01	0.35	0.13	< 0.005	0.01	0.07	0.08	< 0.005	0.02	0.02	—	275	275	0.01	0.04	0.02	289

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.06	0.06	< 0.005	< 0.005	< 0.005	0.06
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.21	0.21	< 0.005	< 0.005	< 0.005	0.21
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.54	0.54	< 0.005	< 0.005	< 0.005	0.57
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.03	0.03	< 0.005	< 0.005	< 0.005	0.04
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.09	0.09	< 0.005	< 0.005	< 0.005	0.09

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	10/1/2025	1/1/2026	5.00	67.0	—
Grading	Grading	10/1/2025	1/1/2026	5.00	67.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Graders	Diesel	Average	1.00	1.79	148	0.41
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	1.79	84.0	0.37
Grading	Graders	Diesel	Average	1.00	1.79	148	0.41
Grading	Tractors/Loaders/Backhoes	Diesel	Average	1.00	1.79	84.0	0.37

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	4.00	11.7	LDA,LDT1,LDT2
Site Preparation	Vendor	4.00	8.40	HHDT,MHDT
Site Preparation	Hauling	4.00	20.0	HHDT
Site Preparation	Onsite truck	0.00	—	HHDT
Grading	—	—	—	—
Grading	Worker	4.00	11.7	LDA,LDT1,LDT2
Grading	Vendor	4.00	8.40	HHDT,MHDT
Grading	Hauling	4.00	20.0	HHDT
Grading	Onsite truck	0.00	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	100	0.00	7.50	0.00	—
Grading	0.00	0.00	7.50	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
User Defined Commercial	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	204	0.03	< 0.005

2026	0.00	204	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	9.92	annual days of extreme heat
Extreme Precipitation	4.05	annual days with precipitation above 20 mm
Sea Level Rise	0.54	meters of inundation depth

Wildfire	14.5	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	1	0	0	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A

Extreme Precipitation	1	1	1	2
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	11.6
AQ-PM	27.9
AQ-DPM	27.6
Drinking Water	6.88
Lead Risk Housing	31.2
Pesticides	0.00
Toxic Releases	70.6
Traffic	85.1

Effect Indicators	—
CleanUp Sites	99.0
Groundwater	98.1
Haz Waste Facilities/Generators	99.4
Impaired Water Bodies	87.0
Solid Waste	98.9
Sensitive Population	—
Asthma	90.1
Cardio-vascular	78.1
Low Birth Weights	81.2
Socioeconomic Factor Indicators	—
Education	50.5
Housing	12.0
Linguistic	35.3
Poverty	34.7
Unemployment	30.9

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	89.285256
Employed	95.85525472
Median HI	85.82060824
Education	—
Bachelor's or higher	68.16373669
High school enrollment	100

Preschool enrollment	43.9753625
Transportation	—
Auto Access	70.20402926
Active commuting	43.82137816
Social	—
2-parent households	92.30078275
Voting	47.87629924
Neighborhood	—
Alcohol availability	73.42486847
Park access	41.52444501
Retail density	62.04285898
Supermarket access	34.46682921
Tree canopy	39.94610548
Housing	—
Homeownership	97.51058642
Housing habitability	75.01604004
Low-inc homeowner severe housing cost burden	79.19928141
Low-inc renter severe housing cost burden	19.49185166
Uncrowded housing	45.59219813
Health Outcomes	—
Insured adults	81.30373412
Arthritis	78.8
Asthma ER Admissions	10.3
High Blood Pressure	86.5
Cancer (excluding skin)	55.0
Asthma	95.7
Coronary Heart Disease	85.5

Chronic Obstructive Pulmonary Disease	92.7
Diagnosed Diabetes	62.8
Life Expectancy at Birth	38.0
Cognitively Disabled	64.4
Physically Disabled	36.0
Heart Attack ER Admissions	16.0
Mental Health Not Good	89.0
Chronic Kidney Disease	79.8
Obesity	95.5
Pedestrian Injuries	66.9
Physical Health Not Good	86.2
Stroke	80.6
Health Risk Behaviors	—
Binge Drinking	86.1
Current Smoker	87.7
No Leisure Time for Physical Activity	63.5
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	11.5
Children	79.8
Elderly	44.5
English Speaking	39.5
Foreign-born	75.8
Outdoor Workers	65.0
Climate Change Adaptive Capacity	—
Impervious Surface Cover	46.9
Traffic Density	70.0

Traffic Access	56.4
Other Indices	—
Hardship	31.7
Other Decision Support	—
2016 Voting	40.4

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	74.0
Healthy Places Index Score for Project Location (b)	86.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Project information for max area of ground disturbance for pipeline (720 ft x 6 ft = 0.1 acre)
Construction: Construction Phases	Project information for construction of temporary pipeline

Construction: Off-Road Equipment	Project information for equipment used in each phase and scaled hours per day
Construction: Trips and VMT	Project information for construction vehicle trips
Operations: Off-Road Equipment	Project information for pump engines, 4 engines (Deutz D914L6) on site, 3 duty and 1 standby.

Hayward WPCF - Phase II Improvements START 20250915 Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Hayward WPCF - Phase II Improvements START 20250915
Construction Start Date	9/15/2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.30
Precipitation (days)	30.0
Location	37.63413885164789, -122.1308433858826
County	Alameda
City	Hayward
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1695
EDFZ	1
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.24

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
User Defined Commercial	1.00	User Defined Unit	0.03	1,400	0.00	0.00	—	Grit facility

User Defined Commercial	1.00	User Defined Unit	1.35	58,938	0.00	0.00	—	BNR facility
User Defined Commercial	1.00	User Defined Unit	0.03	1,200	0.00	0.00	—	Alkalinity Control facility
Other Asphalt Surfaces	34.0	1000sqft	0.78	0.00	0.00	0.00	—	Impervious surfaces

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	65.3	65.3	14.9	16.0	0.03	0.58	1.34	1.93	0.54	0.24	0.78	—	3,415	3,415	0.15	0.16	2.24	3,468
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	65.3	65.3	122	54.0	0.60	2.12	24.1	26.2	2.08	6.45	8.53	—	90,213	90,213	4.73	14.1	5.05	94,543
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.53	2.41	5.19	6.24	0.01	0.18	0.34	0.46	0.17	0.09	0.20	—	1,304	1,304	0.06	0.13	0.82	1,346
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.46	0.44	0.95	1.14	< 0.005	0.03	0.06	0.08	0.03	0.02	0.04	—	216	216	0.01	0.02	0.14	223

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.86	1.53	14.9	16.0	0.03	0.58	1.34	1.93	0.54	0.24	0.78	—	3,415	3,415	0.15	0.16	2.24	3,468
2026	65.3	65.3	10.5	12.6	0.02	0.36	0.23	0.60	0.34	0.06	0.39	—	2,632	2,632	0.10	0.06	1.31	2,655
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	7.98	3.08	122	54.0	0.60	2.12	24.1	26.2	2.08	6.45	8.53	—	90,213	90,213	4.73	14.1	5.05	94,543
2026	65.3	65.3	10.5	12.5	0.02	0.36	0.23	0.60	0.34	0.06	0.39	—	2,620	2,620	0.10	0.06	0.03	2,642
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.40	0.30	3.44	3.17	0.01	0.11	0.34	0.46	0.10	0.09	0.20	—	1,304	1,304	0.06	0.13	0.82	1,346
2026	2.53	2.41	5.19	6.24	0.01	0.18	0.11	0.30	0.17	0.03	0.20	—	1,294	1,294	0.05	0.03	0.28	1,304
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.07	0.06	0.63	0.58	< 0.005	0.02	0.06	0.08	0.02	0.02	0.04	—	216	216	0.01	0.02	0.14	223
2026	0.46	0.44	0.95	1.14	< 0.005	0.03	0.02	0.05	0.03	0.01	0.04	—	214	214	0.01	0.01	0.05	216

3. Construction Emissions Details

3.1. Demolition (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.75	1.47	13.9	15.1	0.02	0.57	—	0.57	0.52	—	0.52	—	2,494	2,494	0.10	0.02	—	2,502
Demolition	—	—	—	—	—	—	1.02	1.02	—	0.16	0.16	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.75	1.47	13.9	15.1	0.02	0.57	—	0.57	0.52	—	0.52	—	2,494	2,494	0.10	0.02	—	2,502
Demolition	—	—	—	—	—	—	1.02	1.02	—	0.16	0.16	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.08	0.76	0.83	< 0.005	0.03	—	0.03	0.03	—	0.03	—	137	137	0.01	< 0.005	—	137
Demolition	—	—	—	—	—	—	0.06	0.06	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.14	0.15	< 0.005	0.01	—	0.01	0.01	—	0.01	—	22.6	22.6	< 0.005	< 0.005	—	22.7
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.48	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	108	108	< 0.005	< 0.005	0.43	110
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.06	0.02	0.98	0.39	0.01	0.02	0.22	0.23	0.02	0.06	0.07	—	814	814	0.04	0.13	1.81	856
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.04	0.43	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	100	100	< 0.005	< 0.005	0.01	102
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.06	0.02	1.04	0.40	0.01	0.02	0.22	0.23	0.02	0.06	0.07	—	814	814	0.04	0.13	0.05	854
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.54	5.54	< 0.005	< 0.005	0.01	5.62
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	44.6	44.6	< 0.005	0.01	0.04	46.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.92	0.92	< 0.005	< 0.005	< 0.005	0.93
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.38	7.38	< 0.005	< 0.005	0.01	7.75

3.3. Site Preparation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.42	1.19	10.9	11.0	0.03	0.47	—	0.47	0.43	—	0.43	—	2,717	2,717	0.11	0.02	—	2,726
Dust From Material Movement	—	—	—	—	—	—	0.91	0.91	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.09	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	22.3	22.3	< 0.005	< 0.005	—	22.4
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.70	3.70	< 0.005	< 0.005	—	3.71
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.26	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	60.2	60.2	< 0.005	< 0.005	0.01	61.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	6.54	1.87	112	42.7	0.58	1.65	23.1	24.7	1.65	6.32	7.97	—	87,436	87,436	4.61	14.1	5.04	91,756
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.50	0.50	< 0.005	< 0.005	< 0.005	0.51
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.05	0.02	0.90	0.35	< 0.005	0.01	0.19	0.20	0.01	0.05	0.06	—	718	718	0.04	0.12	0.69	755
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.08	0.08	< 0.005	< 0.005	< 0.005	0.08
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.16	0.06	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	119	119	0.01	0.02	0.11	125

3.5. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.80	1.51	14.1	14.5	0.02	0.64	—	0.64	0.59	—	0.59	—	2,455	2,455	0.10	0.02	—	2,463

Dust From Material Movement	—	—	—	—	—	—	2.76	2.76	—	1.34	1.34	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.23	0.24	< 0.005	0.01	—	0.01	0.01	—	0.01	—	40.4	40.4	< 0.005	< 0.005	—	40.5
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	< 0.005	0.04	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.68	6.68	< 0.005	< 0.005	—	6.70
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.34	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	80.3	80.3	< 0.005	< 0.005	0.01	81.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.33	1.33	< 0.005	< 0.005	< 0.005	1.35
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.22	0.22	< 0.005	< 0.005	< 0.005	0.22
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.49	1.24	10.6	11.9	0.02	0.40	—	0.40	0.37	—	0.37	—	2,201	2,201	0.09	0.02	—	2,209
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	0.16	1.35	1.51	< 0.005	0.05	—	0.05	0.05	—	0.05	—	280	280	0.01	< 0.005	—	281
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.03	0.03	0.25	0.28	< 0.005	0.01	—	0.01	0.01	—	0.01	—	46.4	46.4	< 0.005	< 0.005	—	46.5
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.06	0.67	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	158	158	< 0.005	0.01	0.02	160
Vendor	0.02	0.01	0.35	0.15	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	269	269	0.01	0.04	0.02	281
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.08	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	20.3	20.3	< 0.005	< 0.005	0.04	20.6
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	34.2	34.2	< 0.005	< 0.005	0.04	35.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.35	3.35	< 0.005	< 0.005	0.01	3.40
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.66	5.66	< 0.005	< 0.005	0.01	5.92
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.41	1.18	10.1	11.8	0.02	0.36	—	0.36	0.33	—	0.33	—	2,201	2,201	0.09	0.02	—	2,208
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.41	1.18	10.1	11.8	0.02	0.36	—	0.36	0.33	—	0.33	—	2,201	2,201	0.09	0.02	—	2,208
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.68	0.56	4.83	5.62	0.01	0.17	—	0.17	0.16	—	0.16	—	1,051	1,051	0.04	0.01	—	1,055
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.88	1.02	< 0.005	0.03	—	0.03	0.03	—	0.03	—	174	174	0.01	< 0.005	—	175
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.04	0.71	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	167	167	< 0.005	0.01	0.62	170
Vendor	0.02	0.01	0.32	0.14	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	264	264	0.01	0.04	0.69	277
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.06	0.63	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	155	155	< 0.005	0.01	0.02	157
Vendor	0.02	0.01	0.33	0.14	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	264	264	0.01	0.04	0.02	276
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.29	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	74.6	74.6	< 0.005	< 0.005	0.13	75.7
Vendor	0.01	< 0.005	0.16	0.07	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	126	126	0.01	0.02	0.14	132
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.4	12.4	< 0.005	< 0.005	0.02	12.5
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	20.9	20.9	< 0.005	< 0.005	0.02	21.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Paving (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.79	0.67	5.88	8.19	0.01	0.25	—	0.25	0.23	—	0.23	—	1,244	1,244	0.05	0.01	—	1,248
Paving	0.20	0.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.16	0.22	< 0.005	0.01	—	0.01	0.01	—	0.01	—	34.1	34.1	< 0.005	< 0.005	—	34.2
Paving	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.64	5.64	< 0.005	< 0.005	—	5.66
Paving	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.03	0.54	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	127	127	< 0.005	< 0.005	0.47	129
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.26	3.26	< 0.005	< 0.005	0.01	3.31
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.54	0.54	< 0.005	< 0.005	< 0.005	0.55
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.13. Architectural Coating (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	0.86	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	65.1	65.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	0.86	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	65.1	65.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.66	3.66	< 0.005	< 0.005	—	3.67

Architect Coatings	1.78	1.78	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.61	0.61	< 0.005	< 0.005	—	0.61
Architectural Coatings	0.33	0.33	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.14	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	33.5	33.5	< 0.005	< 0.005	0.12	34.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.13	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	31.0	31.0	< 0.005	< 0.005	< 0.005	31.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.86	0.86	< 0.005	< 0.005	< 0.005	0.87
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.14	0.14	< 0.005	< 0.005	< 0.005	0.14

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	9/15/2025	10/13/2025	5.00	20.0	—
Site Preparation	Site Preparation	10/14/2025	10/18/2025	5.00	3.00	—
Grading	Grading	10/19/2025	10/27/2025	5.00	6.00	—
Building Construction	Building Construction	10/28/2025	9/1/2026	5.00	220	—
Paving	Paving	9/2/2026	9/16/2026	5.00	10.0	—
Architectural Coating	Architectural Coating	9/17/2026	10/1/2026	5.00	10.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37
Demolition	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Site Preparation	Graders	Diesel	Average	1.00	8.00	148	0.41
Site Preparation	Scrapers	Diesel	Average	1.00	8.00	423	0.48
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	7.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	8.00	367	0.29
Building Construction	Forklifts	Diesel	Average	2.00	7.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	1.00	6.00	84.0	0.37
Building Construction	Welders	Diesel	Average	3.00	8.00	46.0	0.45
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Paving	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Paving	Cement and Mortar Mixers	Diesel	Average	1.00	8.00	10.0	0.56
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	12.5	11.7	LDA,LDT1,LDT2
Demolition	Vendor	—	8.40	HHDT,MHDT
Demolition	Hauling	11.6	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	7.50	11.7	LDA,LDT1,LDT2
Site Preparation	Vendor	—	8.40	HHDT,MHDT
Site Preparation	Hauling	1,246	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	10.0	11.7	LDA,LDT1,LDT2
Grading	Vendor	—	8.40	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	19.7	11.7	LDA,LDT1,LDT2
Building Construction	Vendor	10.1	8.40	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	11.7	LDA,LDT1,LDT2
Paving	Vendor	—	8.40	HHDT,MHDT

Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	3.94	11.7	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	8.40	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	92,307	30,769	2,040

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Building Square Footage)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	20,100	—
Site Preparation	4,900	25,000	4.50	0.00	—
Grading	—	—	6.00	0.00	—
Paving	0.00	0.00	0.00	0.00	0.78

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
User Defined Commercial	0.00	0%
User Defined Commercial	0.00	0%
User Defined Commercial	0.00	0%
Other Asphalt Surfaces	0.78	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	204	0.03	< 0.005
2026	0.00	204	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	9.92	annual days of extreme heat
Extreme Precipitation	4.05	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	14.5	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	1	0	0	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	1	1	1	2
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	11.6
AQ-PM	27.9
AQ-DPM	27.6
Drinking Water	6.88
Lead Risk Housing	31.2
Pesticides	0.00
Toxic Releases	70.6
Traffic	85.1
Effect Indicators	—
CleanUp Sites	99.0
Groundwater	98.1
Haz Waste Facilities/Generators	99.4
Impaired Water Bodies	87.0
Solid Waste	98.9
Sensitive Population	—
Asthma	90.1
Cardio-vascular	78.1
Low Birth Weights	81.2
Socioeconomic Factor Indicators	—

Education	50.5
Housing	12.0
Linguistic	35.3
Poverty	34.7
Unemployment	30.9

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	89.285256
Employed	95.85525472
Median HI	85.82060824
Education	—
Bachelor's or higher	68.16373669
High school enrollment	100
Preschool enrollment	43.9753625
Transportation	—
Auto Access	70.20402926
Active commuting	43.82137816
Social	—
2-parent households	92.30078275
Voting	47.87629924
Neighborhood	—
Alcohol availability	73.42486847
Park access	41.52444501
Retail density	62.04285898

Supermarket access	34.46682921
Tree canopy	39.94610548
Housing	—
Homeownership	97.51058642
Housing habitability	75.01604004
Low-inc homeowner severe housing cost burden	79.19928141
Low-inc renter severe housing cost burden	19.49185166
Uncrowded housing	45.59219813
Health Outcomes	—
Insured adults	81.30373412
Arthritis	78.8
Asthma ER Admissions	10.3
High Blood Pressure	86.5
Cancer (excluding skin)	55.0
Asthma	95.7
Coronary Heart Disease	85.5
Chronic Obstructive Pulmonary Disease	92.7
Diagnosed Diabetes	62.8
Life Expectancy at Birth	38.0
Cognitively Disabled	64.4
Physically Disabled	36.0
Heart Attack ER Admissions	16.0
Mental Health Not Good	89.0
Chronic Kidney Disease	79.8
Obesity	95.5
Pedestrian Injuries	66.9
Physical Health Not Good	86.2

Stroke	80.6
Health Risk Behaviors	—
Binge Drinking	86.1
Current Smoker	87.7
No Leisure Time for Physical Activity	63.5
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	11.5
Children	79.8
Elderly	44.5
English Speaking	39.5
Foreign-born	75.8
Outdoor Workers	65.0
Climate Change Adaptive Capacity	—
Impervious Surface Cover	46.9
Traffic Density	70.0
Traffic Access	56.4
Other Indices	—
Hardship	31.7
Other Decision Support	—
2016 Voting	40.4

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	74.0
Healthy Places Index Score for Project Location (b)	86.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes

Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	RFI info for Phase II Improvements
Operations: Vehicle Data	Operations will be assumed same as existing conditions, but with up to 5 additional employees. 10.14 trips/day to represent daily trips for 5 new employees and 1 additional delivery truck every other week. (10*14+2)/14 = 10.14

Self Priming Centrifugal Pump
w/Autostart

Super T SERIES
VARIOUS PATENTS APPLY

Model T8A60S-F6L
Size 8” x 8”

Total Head		Capacity of Pump in U.S. Gallons per Minute (GPM) at Continuous Performance			
P.S.I.	Feet				
55.5	128	450	450	450	450
52.0	120	680	680	680	680
43.4	100	1180	1260	1280	1280
34.7	80	1280	1700	1850	1850
26.0	60	1300	1760	2220	2280
17.3	40	1325	1795	2300	2595
Suction Lift		25’	20’	15’	10’

PHOTO NOT AVAILABLE AT TIME OF PUBLISHING

PUMP SPECIFICATIONS

Size: 8” x 8” (203 mm x 203 mm) Flanged.
Casing: Gray Iron 30.
Maximum Operating Pressure 92 psi (634 kPa).*
Semi-Open Type, Two Vane Impeller: Ductile Iron 65-45-12.
Handles 3” (76,2 mm) Diameter Spherical Solids.
Impeller Shaft: Stainless Steel 17-4 PH.
Replaceable Wear Plate: Gray Iron 30.
Removable Adjustable Cover Plate: Gray Iron 30.
Removable Inspection Cover Plate: Gray Iron 30; 20 lbs. (9,1 kg.).
Flap Valve: Neoprene W/Steel Reinforcement.
Drive Flange: Ductile Iron 65-45-12.
Seal Plate: Gray Iron 30.
Shaft Sleeve: Alloy Steel 4130.
Seal: Cartridge Type, Mechanical, Oil-Lubricated, Double Floating, Self-Aligning. Silicon Carbide Rotating and Stationary Faces. Stainless Steel 316 Stationary Seat. Fluorocarbon Elastomers (DuPont Viton® or Equivalent). Stainless Steel 18-8 Cage and Spring. Maximum Temperature of Liquid Pumped 160°F (71°C).*
Bearing Housing: Gray Iron 30.
Radial/Thrust Bearings: Open Double Ball.
Bearing and Seal Cavity Lubrication: SAE 30 Non-Detergent Oil.
Flanges: Gray Iron 30.
Gaskets: Buna-N, Compressed Synthetic Fibers, PTFE, Cork, and Rubber.
O-Rings: Buna-N.
Hardware: Standard Plated Steel.
Brass Pressure Relief Valve.
Bearing and Seal Cavity Oil Level Sight Gauges.
Standard Equipment: Hoisting Bail. 90° Discharge Elbow. Strainer. Single Ball Type Float Switch. Combination Skid Base w/Fuel Tank**
***50 Ft. (15 m) Standard Length; Dual Switches and Alternate Cable Lengths Available From the Factory.*
Optional Equipment: Battery. G-R Hard Iron Impeller, Seal Plate and Wear Plate. High Speed (55 MPH/89 KM/H) Single Axle Pneumatic-Tired Wheel Kit W/wo DOT-Approved Lights and Electric Brakes. Single Axle Over-the-Road Trailer (Meets DOT Requirements) Available W/Either Electric or Hydraulic Surge Brakes, Running Lights, Jack Stands and Safety Cables. EPS W/Submersible Transducer Liquid Level Sensor (50 Ft. [15 M] Cable Standard, Alternate Lengths Available).
**Consult Factory for Applications Exceeding Maximum Pressure and/or Temperature Indicated.*

WARNING!
Do not use in explosive atmosphere or for pumping volatile flammable liquids.

ENGINE SPECIFICATIONS

Model: Deutz D914L6.
Type: Six Cylinder, Four Cycle, Air Cooled Diesel Engine.
Displacement: 395 Cu. In. (6,5 Liters).
Governor: Mechanical.
Lubrication: Forced Circulation.
Air Cleaner: Oil Bath.
Oil Reservoir: 16.9 U.S. Qts. (16,0 Liters) Dry;
15.3 U.S. Qts. (14,5 Liters) Refill.
Fuel Tank: 88 U.S. Gallons (333 Liters).
Full Load Operating Time: 24 Hrs.
Starter: 12 Volt Electric.
Standard Features: High Oil Temperature, Low Oil Pressure, V-belt, Alternator and Start Failure Safety Shut Down Switches/Indicators. Fuel Level Gauge. Throttle Control. Autostart Instrument Panel Includes: Temperature Gauge, Oil Pressure Gauge, Ammeter, Hourmeter, Tachometer, Manual/Stop/Auto Key Switch, 15 Amp Fuse, Audible Startup Warning Delay. Muffler W/Guard and Weather Cap.

DEUTZ PUBLISHED PERFORMANCE:
Maximum Gross Continuous B.H.P.
100.4 (74.9 kW) @ 2300 RPM

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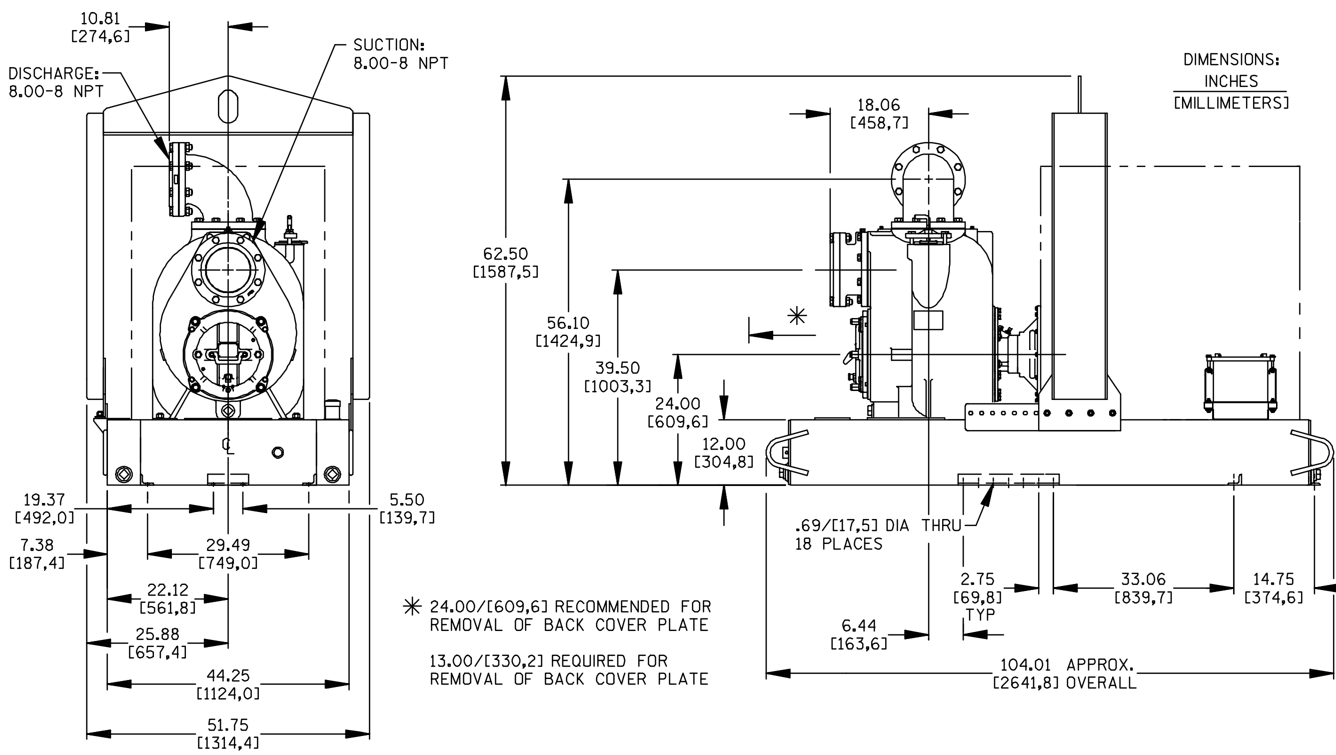
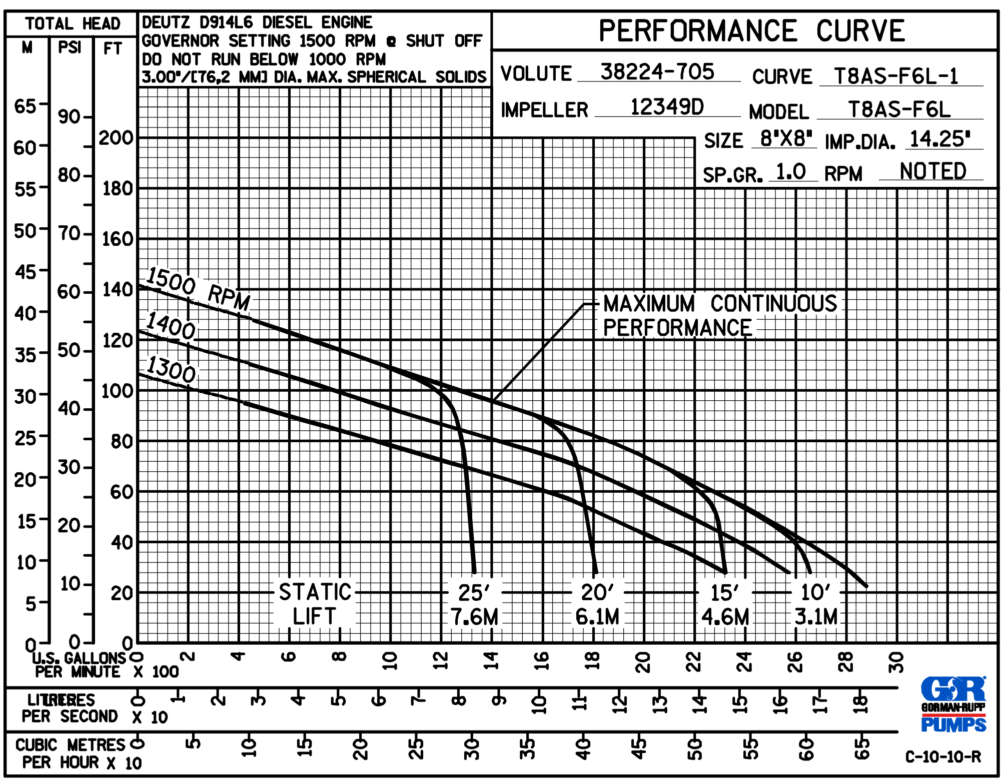
Specification Data	APPROXIMATE DIMENSIONS and WEIGHTS		SKID BASE	2-WHEEL
SECTION 45, PAGE 1645		NET WEIGHT:	4385 LBS. (1989 KG.)	4845 LBS. (2198 KG.)
		SHIPPING WEIGHT:	4585 LBS. (2080 KG.)	4845 LBS. (2198 KG.)
		EXPORT CRATE SIZE:	288 CU. FT. (8,1 CU. M.)	





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www.grpumps.com

Specifications Subject to Change Without Notice

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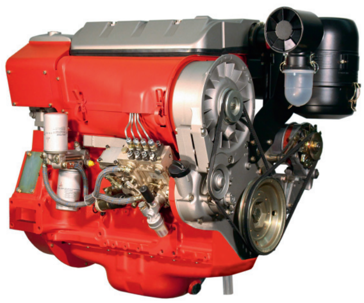
D 914

For mobile machinery

43 - 129.9 kW | 57.7 - 174.2 hp at 2300 min^{-1}|rpm
EU Stage IIIA / US EPA Tier 3

- Air-cooled 3 to 6-cylinder naturally aspirated engines in inline arrangement.
- 6-cylinder with turbocharging, charge-air cooled.
- Capacity: 1.1 l/cylinder, modular system with single cylinders.
- The robust engine design allows world-wide operation even with high sulphur fuels.
- Low noise emissions due to acoustically optimized components with very smooth running and high durability.



- Highly efficient injection and combustion system ensures optimum engine performance at low consumption.
- Flywheel and end 100% power takeoff possibilities PTO drives for hydraulic pumps and compressor possible, only a few maintenance points, long oil change intervals.
- Very compact engine design reduces the installation costs.
- Best cold starting properties even under extreme conditions.
- The engines in the power range < 56 kW meets to the US EPA Tier 4 i.

Technical data

Engine type		D 914 L3	D 914 L4	D 914 L5
No. of cylinders		3	4	5
Bore/stroke	mm | in	102/132 |4.0/5.2	102/132 |4.0/5.2	102/132 |4.0/5.2
Capacity	l | cu in	3.2 |195	4.3 |262	5,4 |330
Compression ratio		21:1	21:1	21:1
Nominal speeds	min^{-1} | rpm	2000 - 2300	2000 - 2300	2000 - 2300

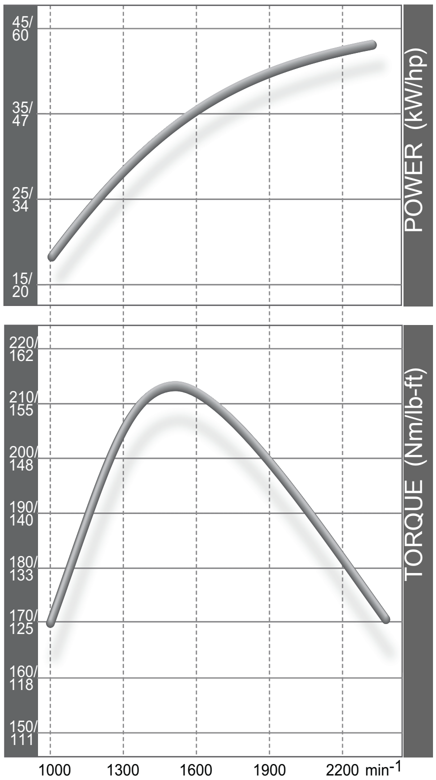
Power output[1)]		D 914 L3	D 914 L4	D 914 L5
Power output as per ISO 14396	kW | hp	43 |58	58 |78	72.5 |97.2
at speed	min^{-1} | rpm	2300	2300	2300
Max. torque	Nm | lb/ft	204 |150.5	273 |201.4	337 |248.6
at speed	min^{-1} | rpm	1500	1500	1500
Minimum idling speed	min^{-1} | rpm	700	700	650 - 700
Specific fuel consumption[2)]	g/kWh | lb/hph	225 |0.37	220 |0.362	218 |0.358
Weight as per DIN 70020 Part 7A[3)]	kg | lb	277 |611	307 |677	380 |838

1) Gross capacity data without deduction of fan capacity
2) Best full load consumption without cooling system refers to diesel with a density of 0.835 kg/dm^3 at 15°C | 6.96 lb/US gallon at 60° F.
3) Without starter/dynamo, cooler and fluids but with flywheel and flywheel housing.

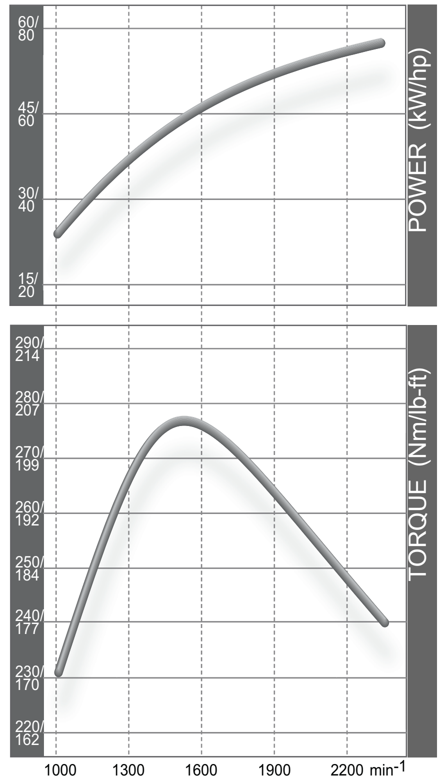
The data on this data sheet are for information purposes only and are not binding values. The data in the quotation is definitive.

Torque curve

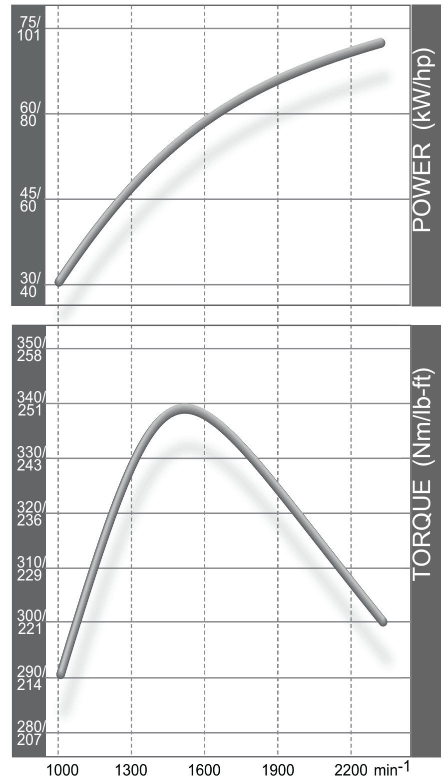
D 914 L3 - 43 kW|58 hp



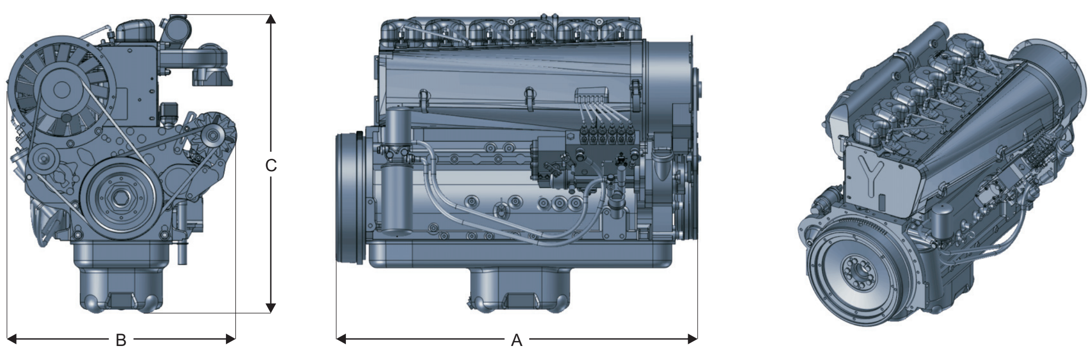
D 914 L4 - 58 kW|78 hp



D 914 L5 - 72.5 kW|97.2 hp



Dimensions



		A	B	C
D 914 L3	mm | in	708 |27.87	666 |26.22	796 |31.34
D 914 L4	mm | in	838 |32.99	666 |26.22	800 |31.5
D 914 L5	mm | in	965 |37.99	657 |25.87	834 |32.83
D 914 L6	mm | in	1084 |42.68	662 |26.06	870 |34.25
TCD 914 L6	mm | in	1092 |42.99	720 |28.35	1184 |46.61

Note: The engine dimensions and weights vary depending on the scope of delivery.

Technical data

Engine type		D 914 L6	TCD 914 L6
No. of cylinders		6	6
Bore/stroke	mm | in	102/132 |4.0/5.2	102/132 |4.0/5.2
Capacity	l | cu in	6.5 |397	6.5 |397
Compression ratio		21:1	19:1
Nominal speeds	min^{-1} | rpm	2300	2300

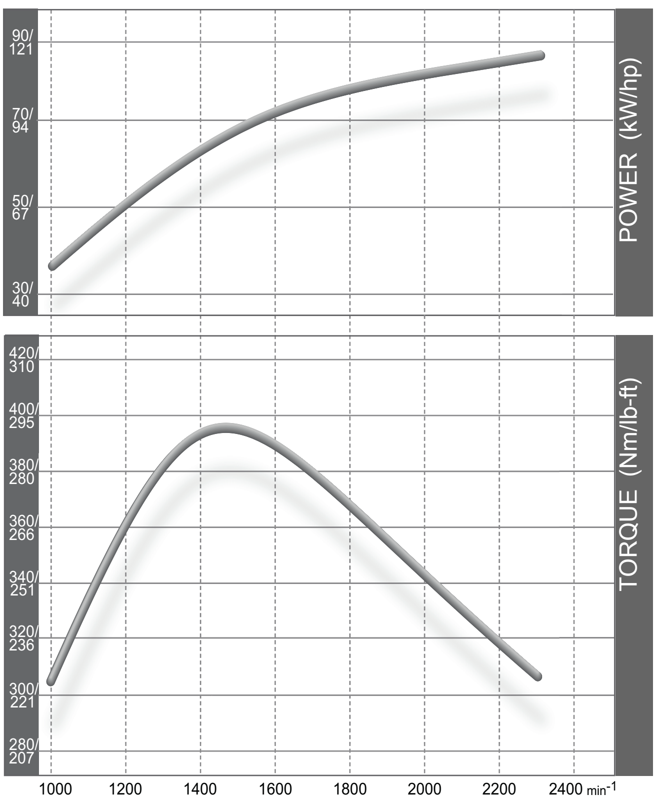
Power output[1]		D 914 L6	TCD 914 L6
Power output as per ISO 14396	kW | hp	86.5 |116	129.9 |174.2
at speed	min^{-1} | rpm	2300	2300
Max. torque	Nm | lb/ft	375 |276.6	650 |479.4
at speed	min^{-1} | rpm	1500	1600
Minimum idling speed	min^{-1} | rpm	650 - 700	650 - 700
Specific fuel consumption[2]	g/kWh | lb/hph	220 |0.362	220 |0.362
Weight as per DIN 70020 Part 7A[3]	kg | lb	420 |926	510 |1124

1) Gross capacity data without deduction of fan capacity
2) Best full load consumption without cooling system refers to diesel with a density of 0.835 kg/dm^3 at 15°C | 6.96 lb/US gallon at 60° F.
3) Without starter/dynamo, cooler and fluids but with flywheel and flywheel housing.

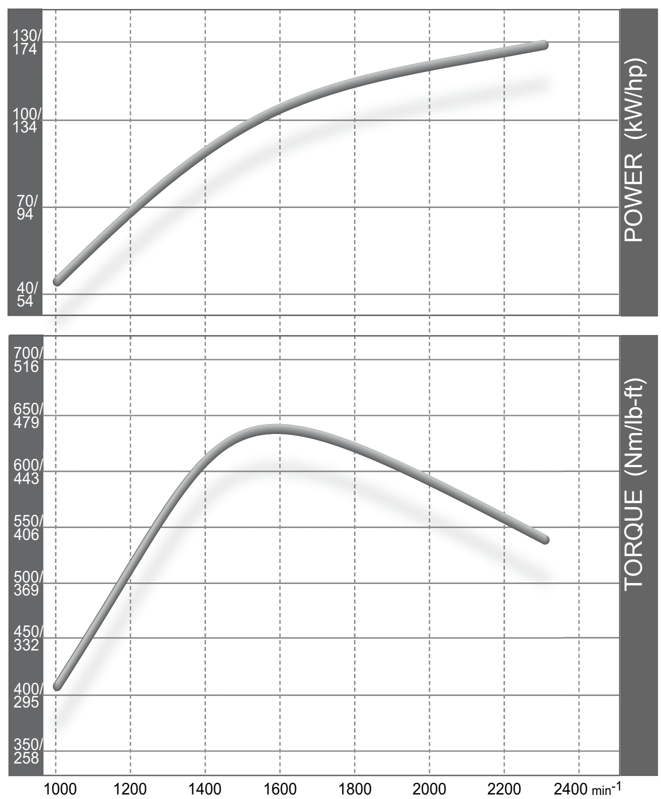
The data on this data sheet are for information purposes only and are not binding values. The data in the quotation is definitive.

Torque curve

D 914 L6 - 86.5 kW|116 hp



TCD 914 L6 - 129.9 kW|174.2 hp



DEUTZ

Order No. 0031 2127 / 09 / 2011 / VC-CM

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Appendix B
Special-Status Species Database Query Results

TABLE B-1
SPECIAL-STATUS SPECIES RECORDED IN THE VICINITY OF THE PROJECT AREA

Common Name ***Scientific Name***	**Listing Status Fed/State**	**Habitat Description / Blooming Period**	**Potential to Occur in the Project Area**
Plants			
Bent-flowered fiddleneck *Amsinckia lunaris*	—/—/1B.2	Cismontane woodland, Coastal bluff scrub, Valley & foothill grassland. Bloom period. March – June.	**Not Present.** Suitable habitat not present on site.
alkali milk-vetch *Astragalus tener* var. *tener*	—/—/1B.2	Alkali playa and flats, valley, annual, and foothill grassland, vernal pools, low ground, and flooded lands. Blooms March – June	**Not Present.** Suitable habitat not present on site.
big-scale balsamroot *Balsamorhiza macrolepis*	—/—/1B.2	Chaparral, Cismontane woodland, Ultramafic, Valley & foothill grassland. Blooms March – June	**Not Present.** Suitable habitat not present on site.
Oakland star-tulip *Calochortus umbellatus*	—/—/4.2	Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest, Valley and foothill grassland. Blooms Mar-May.	**Not Present.** Suitable habitat not present on site.
johnny-nip *Castilleja ambigua* var. *ambigua*	—/—/4.2	Coastal bluff scrub, Coastal prairie, Coastal scrub, Marshes and swamps, Valley and foothill grassland, Vernal pools (margins). Blooms Mar-Aug.	**Not Present.** Suitable habitat not present on site.
Congdon's tarplant *Centromadia parryi* ssp. *congdonii*	—/—/1B.1	Valley and foothill grassland. Blooms May – October.	**Not Present.** Suitable habitat not present on site.
Point Reyes salty bird's-beak *Chloropyron maritimum* ssp. *palustre*	—/—/1B.2	Marsh & swamp, Salt marsh, Wetland. Blooms June – October.	**Not Present.** Suitable habitat not present on site.
Robust spineflower *Chorizanthe robusta* var. *robusta*	FE/—/1B.1	Chaparral, Cismontane woodland, Coastal bluff scrub, Coastal dunes. Blooms April – September.	**Not Present.** Suitable habitat not present in the project area. No observations in the vicinity of the project area.
Hoover's button-celery *Eryngium aristulatum* var. *hooveri*	—/—/1B.1	Vernal pools. Blooms (Jun)Jul(Aug)	**Not Present.** Suitable habitat not present on site.
Jepson's coyote thistle *Eryngium jepsonii*	—/—/1B.2	Valley and foothill grassland, Vernal pools. Blooms Apr-Aug.	**Not Present.** Suitable habitat not present on site.
San Joaquin spearscale *Extriplex joaquinana*	—/—/1B.2	Chenopod scrub, Meadows and seeps, Playas, Valley and foothill grassland. Blooming period Apr-Oct.	**Not Present.** Suitable habitat not present on site.
fragrant fritillary *Fritillaria liliacea*	—/—/1B.2	Cismontane woodland, Coastal prairie, Coastal scrub, Valley and foothill grassland. Blooms February – April.	**Not Present.** Suitable habitat not present on site.
dark-eyed gilia *Gilia millefoliata*	—/—/1B.2	Coastal dunes. Blooms April – July.	**Not Present.** Suitable habitat not present on site.

Common Name ***Scientific Name***	**Listing Status Fed/State**	**Habitat Description / Blooming Period**	**Potential to Occur in the Project Area**
Diablo helianthella *Helianthella castanea*	—/—/1B.2	Broadleafed upland forest, Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland, Valley and foothill grassland. Blooms March – June.	**Not Present.** Suitable habitat not present on site.
Loma Prieta hoita *Hoita strobilina*	—/—/1B.1	Chaparral, Cismontane woodland, Riparian woodland. Blooms May-Jul(Aug-Oct).	**Not Present.** Suitable habitat not present on site.
Santa Cruz tarplant *Holocarpha macradenia*	FT/SE/1B.1	Coastal prairie, coastal scrub, valley and foothill grassland. Blooms June – October.	**Not Present.** Suitable habitat not present on site.
Kellogg's horkelia *Horkelia cuneata* var. *sericea*	—/—/1B.1	Chaparral (maritime), Closed-cone coniferous forest, Coastal dunes, Coastal scrub. Blooms Apr-Sep.	**Not Present.** Suitable habitat not present on site.
Contra Costa goldfields *Lasthenia conjugens*	FE/—/1B.1	Cismontane woodland, Playas (alkaline), Valley and foothill grassland, Vernal pools. Blooms March – June.	**Not Present.** Suitable habitat not present on site.
bristly leptosiphon *Leptosiphon aureus*	—/—/4.2	Chaparral, Cismontane woodland, Coastal prairie, Valley and foothill grassland. Blooms Apr-Jul.	**Not Present.** Suitable habitat not present on site.
large-flowered leptosiphon *Leptosiphon grandiflorus*	—/—/4.2	Cismontane woodland, Closed-cone coniferous forest, Coastal bluff scrub, Coastal dunes, Coastal prairie, Coastal scrub, Valley and foothill grassland. Bloom Apr-Aug.	**Not Present.** Suitable habitat not present on site.
woodland woollythreads *Monolopia gracilens*	—/—/1B.2	Broadleafed upland forest (openings), Chaparral (openings), Cismontane woodland, North Coast coniferous forest (openings), Valley and foothill grassland. Affinity to serpentine soil. 60 – 1360m. Blooms March – July	**Not Present.** Suitable habitat not present on site.
Michael's rein orchid *Piperia michaelii*	—/—/4.2	Chaparral, Cismontane woodland, Closed-cone coniferous forest, Coastal bluff scrub, Coastal scrub, Lower montane coniferous forest. Blooms Apr-Aug.	**Not Present.** Suitable habitat not present on site.
hairless popcornflower *Plagiobothrys glaber*	—/—/1A	Marshes and swamps (coastal salt), Meadows and seeps (alkaline). Blooms Mar-May.	**Not Present.** Suitable habitat not present on site.
Marin knotweed *Polygonum marinense*	—/—/3.1	Marshes and swamps (brackish, coastal salt). Blooms (Apr)May-Aug(Oct).	**Not Present.** Suitable habitat not present on site.
Lobb's aquatic buttercup *Ranunculus lobbii*	—/—/4.2	Cismontane woodland, North Coast coniferous forest, Valley and foothill grassland, Vernal pools. Blooms Feb-May	**Not Present.** Suitable habitat not present on site.
Adobe sanicle *Sanicula maritima*	—/CR/1B.1	Chaparral, coastal prairie, meadows and seeps, valley and foothill grassland. Blooms February – May.	**Not Present.** Suitable habitat not present on site.
Chaparral ragwort *Senecio aphanactis*	—/—/2B.2	Chaparral, Cismontane woodland, Coastal scrub. Blooms Jan-Apr(May).	**Not Present.** Suitable habitat not present on site.
Long-styled sand-spurrey *Spergularia macrotheca* var. *longistyla*	—/—/1B.2	Marshes and swamps, Meadows and seeps. Blooms February – May.	**Not Present.** Suitable habitat not present on site.

Common Name ***Scientific Name***	**Listing Status Fed/State**	**Habitat Description / Blooming Period**	**Potential to Occur in the Project Area**
most beautiful jewelflower *Streptanthus* albidus ssp. *peramoenus*	—/—/1B.2	Serpentine grassland, chaparral. Blooms April – June	**Not Present.** Suitable habitat not present on site.
Northern slender pondweed *Stuckenia filiformis* ssp. *alpina*	—/—/2B.2	Marshes and swamps, in shallow, clear water of lakes and drainage channels. 15-2,310m. Blooms May – July	**Not Present.** Suitable habitat not present on site.
California seablite *Suaeda californica*	FE/—/1B.1	Margins of coastal salt marshes and swamps. 0-5 m. Blooms July – October	**Low.** Suitable habitat not present on site.
saline clover *Trifolium hydrophilum*	—/—/1B.2	Marshes and swamps, valley and foothill grassland, vernal pools. 0 – 220m. Blooms April – June.	**Low.** Suitable habitat not present on site.
Invertebrates			
Crotch bumblebee *Bombus crotchii*	—/SCE	Open grasslands, shrublands, chaparral, desert margins	**Low.** Suitable habitat not present on project site.
Western bumblebee *Bombus occidentalis*	—/SCE	Shrublands and chaparral.	**Low.** Suitable habitat not present on project site.
vernal pool fairy shrimp *Branchinecta lynchi*	FT/*/—	Rock outcrop pools, clay pan pools or other non-flow-through areas capable of ponding water seasonally.	**Not Present.** No vernal pools present on site.
Monarch butterfly *Danaus plexippus* (wintering sites)	FC/—	Overwinter in large trees near coast, often eucalyptus or Monterey pine.	**Low.** No suitable trees for overwintering present on site.
Fish			
tidewater goby *Eucyclogobius newberryi*	FE/-	Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego Co. to the mouth of the Smith River. Found in shallow lagoons and lower stream reaches, they need fairly still but not stagnant water and high oxygen levels.	**Not Present.** Site holding ponds have no connection to bay waters.
green sturgeon southern DPS *Acipenser medirostris*	FT/—	Aquatic, Estuary, Marine bay, Sacramento/San Joaquin flowing waters	**Not Present.** Site holding ponds have no connection to bay waters.
steelhead - central California coast DPS *Oncorhynchus mykiss irideus pop. 8*	FT/TH/—	Spawns and rears in coastal streams between the Russian River in Sonoma County and Soquel Creek in Santa Cruz County, as well as drainages tributary to San Francisco Bay, where gravelly substrate and shaded riparian habitat occurs.	**Not Present.** Site holding ponds have no connection to bay waters.
longfin smelt *Spirinchus thaleichthys*	FC/ST/—	Found throughout the nearshore coastal waters and open waters of San Francisco Bay-Delta including the river channels and sloughs of the Delta. Spawns in the Delta.	**Not Present.** Site holding ponds have no connection to bay waters.

Common Name ***Scientific Name***	**Listing Status Fed/State**	**Habitat Description / Blooming Period**	**Potential to Occur in the Project Area**
Amphibians			
California tiger salamander *Ambystoma californiense*	FT/ST/WL	Vernal or temporary pools in annual grasslands, or open stages of woodlands. Typically, adults use mammal burrows for aestivation in non-breeding season.	**Not Present.** Suitable freshwater habitat is not present in the project site.
foothill yellow-legged frog *Rana boylii*	FT/SE/—	Partly-shaded, usually perennial, shallow streams and riffles with a rocky substrate in a variety of habitats. Needs at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis.	**Not Present.** Suitable freshwater habitat is not present at the project site.
California red-legged frog *Rana draytonii*	FT/SSC/—	Streams, freshwater pools, and ponds with overhanging vegetation. Also found in woods adjacent to streams. Requires permanent or ephemeral water sources such as reservoirs and slow-moving streams and needs pools of >0.5 m depth for breeding.	**Not Present.** Suitable freshwater habitat is not present at the project site.
Reptiles			
northwestern pond turtle *Emys marmorata*	FC/SSC/—	Ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Requires basking sites and suitable upland habitat for egg-laying. Nest sites most often gentle slopes (<15%) with little vegetation or sandy banks.	**Low.** The bay marshes west of the facility likely too saline for this species which has not been recorded in the vicinity.
Alameda whipsnake *Masticophis lateralis euryxanthus*	FT/ST/—	Coastal ranges, in chaparral and riparian habitat and adjacent grasslands.	**Not Present.** No suitable habitat for this species.
Birds			
tricolored blackbird *Agelaius tricolor* (nesting colony)	ST/SSC/BCC	Nests near freshwater, emergent wetland with cattails or tules; forages in grasslands, woodland, and agriculture.	**Low:** Suitable habitat present near the vicinity and multiple observations on eBird surrounding the project site; however no nesting colonies located in the vicinity.
golden eagle *Aquila chrysaetos*	CFP/BCC	Broadleaved upland forest, Cismontane woodland, Coastal prairie, Great Basin grassland, Great Basin scrub, Lower montane coniferous forest, Pinon & juniper woodlands, Upper montane coniferous forest, Valley & foothill grassland.	**Low.** Suitable habitat not present but observations recorded in the vicinity of the project site in eBird. Potential to forage.
short-eared owl *Asio flammeus*	SSC/BCC/—	Great Basin grassland, Marsh & swamp, Meadow & seep, Valley & foothill grassland, Wetland	**Low.** Suitable habitat not present but observations recorded in the vicinity of the project area in eBird. Potential to forage.
burrowing owl *Athene cunicularia*	SSC/BCC/—	Nests and forages in grassland, open scrub, and agriculture, particularly with ground squirrel burrows. This species requires short vegetation with sparse shrubs and burrows for roosting and nesting.	**Low.** Burrowing habitat not present but observations recorded in the vicinity of the project site on eBird. Potential to forage.
Western snowy plover *Charadrius nivosus* ssp. *nivosus*	FT/SSC/—	Sandy shorelines, gravel flats, or coastal wetlands; needs sandy, gravelly or friable soils for nesting.	**Low.** Habitat not present. No observations in the vicinity of the project site.
northern harrier *Circus cyaneus*	—/SSC/BCC	Coastal scrub, Great Basin grassland, Marsh & swamp, Riparian scrub, Valley & foothill grassland, Wetland. Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas.	**Low.** Potentially suitable nesting habitat found in nearby bay marshes; species may forage in project area or adjacent grasslands. Has been observed near the project area on eBird.

Common Name ***Scientific Name***	**Listing Status Fed/State**	**Habitat Description / Blooming Period**	**Potential to Occur in the Project Area**
yellow-billed Cuckoo *Coccyzus americanus*	FT/—	Dense riparian habitat, including woodlands with low, scrubby, vegetation, overgrown orchards, abandoned farmland and thickets along streams and marshes.	**Low.** No suitable habitat for this species at project site.
Yellow rail *Coturnicops noveboracensis*	—/SSC/BCC	Habitat includes shallow marshes, wet meadows, drier fresh-water and brackish marshes, as well as dense, deep grass, and rice fields. Forages for small snails, aquatic insects, and wetland plant seeds in shallow water concealed by dense vegetation.	**Low.** No suitable habitat for this species at project site.
white-tailed kite *Elanus leucurus*	—/FP/—	Nests in shrubs and trees next to grasslands, forages over grasslands and agricultural lands.	**Low.** Species may forage over project area but no nesting habitat is present.
saltmarsh common yellowthroat *Geothlypis trichas sinuosa*	BCC/SSC/—	Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.	**Low.** No suitable habitat for this species at project site.
bald eagle *Haliaeetus leucocephalus*	FDR/SE/—	Winter foraging at lakes and along major rivers. Breeds Jan 1 to Aug 31 (iPaC)	**Low.** Suitable habitat not present but observations recorded in the vicinity of the project site in eBird. Potential to forage.
California black rail *Laterallus jamaicensis coturniculus*	—/ST/FP	Salt and freshwater marshes, grassy wet meadows.	**Low.** Suitable habitat for this species is not found on the project site.
Alameda song sparrow *Melospiza melodia pusillula*	BCC/SSC/—	Tidally influenced marshes of eastern and south San Francisco Bay.	**Moderate.** May nest in waterside vegetation on site or in adjacent bay marshes.
California Ridgway's rail *Rallus obsoletus*	FE/SE/FP	Densely vegetated salt marsh with channels along the San Francisco Bay.	**Low.** Records of this species nearby but suitable habitat for this species is not found on the project site.
bank swallow *Riparia riparia*	—/ST	Sandy banks along rivers, lakes and beaches.	**Low.** Suitable habitat for this species is not found on the project site.
black skimmer *Rynchops niger*	SSC/BCC	Nest in colonies in rocky shoreline areas. Breeds May 20 to Sep 15.	**Low.** Suitable habitat for this species is not found on the project site.
yellow warbler *Setophaga petechia*	—/SSC/—	Breeds in wet, deciduous thickets, especially willows.	**Low.** Suitable habitat for this species is not found on the project site.
California least tern *Sternula antillarum browni*	FE/SE/FP	Alkali playa, beaches and wetlands along California coast. Nests in colonies.	**Low.** Records of this species nearby but no suitable habitat at project site.
Mammals			
pallid bat *Antrozous pallidus*	—/SSC/ WBWG High	Day roosts in caves, crevices, mines, and occasionally hollow trees and buildings. Night roosts may be in more open sites, such as porches and open buildings. Hibernates in rock crevices in grassland, scrub or forest habitats. .	**Moderate.** Potentially suitable habitat for this species in disused shed on project site.
western mastiff bat *Eumops perotis californicus*	—/SSC/—	Breeds in rugged, rocky canyons and forages in a variety of habitats. May occur in semi-arid open woodlands.	**Low.** Suitable habitat for this species is not found on the project site.

Common Name ***Scientific Name***	**Listing Status Fed/State**	**Habitat Description / Blooming Period**	**Potential to Occur in the Project Area**
San Francisco dusky-footed woodrat *Neotoma fuscipes annectens*	—/SSC/—	Regional subspecies with range limited to San Francisco Bay Area. Inhabits forests with moderate canopy cover and brushy understory.	**Low.** Suitable habitat for this species is not found on the project site.
Salt-marsh harvest mouse *Reithrodontomys raviventris*	FE/SE/FP	Dense pickleweed vegetation required with other halophytes often present.	**Low to Moderate.** Species has been recorded ineraby (1999; CDFW 2023) and could enter western portion of site (not part of project) from suitable pickleweed habitat west of the facility.
Salt-marsh wandering shrew *Sorex vagrans halicoetes*	—/SSC/—	Salt marshes of the south arm of San Francisco Bay. Found at medium to high marsh 6-8 ft above sea level where abundant driftwood is scattered among pickleweed.	**Low.** Suitable habitat for this species is located west of the facility in bay marshes but it has not been recorded in the vicinity.
American badger *Taxidea taxus*	—/SSC/—	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents.	**Not Present.** No suitable habitat for this species is located at the project site.

NOTES:

a USGS 7.5 minute quads Hayward, Redwood Point San Leandro and Newark.

<u>Potential to Occur Categories</u>:

Not Present = Project area and/or immediate vicinity do not support suitable habitat for a particular species. Project area is outside of the species known range.

Low Potential = The project area and/or immediate vicinity only provide limited habitat.

Moderate Potential = The project area and/or immediate vicinity provide suitable habitat and/or species may have been recorded nearby.

High Potential = The project area and/or immediate vicinity provide ideal habitat conditions and/or species have been recorded nearby.

STATUS CODES:

FEDERAL: (U.S. Fish and Wildlife Service)

FT = Listed as Threatened (likely to become Endangered within the foreseeable future) by the Federal Government.

BCC = Bird of Conservation Concern

FC = Candidate for federal listing

FD= Delisted

STATE:

ST = Listed as Threatened by the State of California

SE= Listed as Endangered by the State of California

SC = California Candidate for Listing

SSC = California Species of Special Concern

SCE = State Candidate Endangered

CFP= California Department of Fish and Wildlife designated “fully protected”

CD – delisted

OTHER:

California Native Plant Society (CNPS) California Rare Plant Ranks (CRPR):

1A = Presumed extirpated in California; Rare or extinct in other parts of its range.
1B = Rare, threatened, or endangered throughout range; Most species in this rank are endemic to California.
2A = Extirpated in California, but common in other parts of its range.
2B = Rare, threatened, or endangered in California but common in other parts of its range.
3 = Need more information about species to assign it a ranking status.
.1 = Seriously endangered in California
.2 = Fairly endangered in California

WBWG = Western Bat Working Group:

Low = Stable population
Medium = Need more information about the species, possible threats, and protective actions to implement.
High= Imperiled or at high risk of imperilment.

Xerces Society for Invertebrate Conservation (Xerces)

CI = Critically imperiled
IM = Imperiled
VU = Vulnerable
DD = Data Deficit

Appendix C
Cultural Resources Technical Memo

ESA

180 Grand Avenue
Suite 1050
Oakland, CA 94612
510.839.5066 phone
510.839.5825 fax

esassoc.com

memorandum

date	March 8, 2024
to	Suzan England, Utilities Engineering Manager, City of Hayward
cc	Michael Walkowiak, Managing Principal, Brown & Caldwell
from	Johanna Kahn, Senior Architectural Historian, ESA
subject	Cultural Resources Survey Report for the City of Hayward Water Pollution Control Facility Improvements Phase II Project

Introduction

This Cultural Resources Survey Report documents the methods and results of a cultural resources inventory completed for the Hayward Water Pollution Control Facility (Hayward WPCF) Improvements Phase II Project (Project). The Project is proposed by the City of Hayward (City) to rehabilitate aging infrastructure, increase peak hydraulic capacity, comply with anticipated more stringent regulations, and continue to protect the public health and environment in the service area. The Project would be seeking federal funding through the U.S. Environmental Protection Agency (USEPA) Water Infrastructure Finance and Innovation Act (WFIA) program. As a federal undertaking (i.e., a project requiring federal funding, a federal action, or issuance of a federal permit), the Project is subject to federal environmental regulations, including the National Historic Preservation Act of 1966 (NHPA), as amended (54 United States Code [U.S.C.] 306108). The USEPA is the lead agency for NHPA purposes. The Project is also subject to the California Environmental Quality Act (CEQA). The City is the lead agency for CEQA purposes. This report is a combined technical report to support environmental review and permitting at the local, state, and federal levels.

This document records the existing conditions of the Project area with regard to cultural resources, including both archaeological and architectural resources. Work performed consists of background and archival research to determine the potential to encounter buried archaeological resources during project implementation, as well as documentation and evaluation of existing cultural resources in the Project area.

Professional Qualifications

ESA Architectural Historian Johanna Kahn, M.Ar.H., and ESA Archaeologist Melissa Grijalva-Foreman were the primary authors of this report. Ms. Kahn meets the Secretary of Interior's Professional Qualification Standards (SOI PQS) for Architectural History, Architecture, and Historic Architecture. Ms. Grijalva-Foreman is an archaeologist with four years of professional experience. ESA Architectural Historian Amy Langford, Ph.D., provided documentation support. ESA Architectural Historian Becky Urbano, M.S., who meets the SOI PQS for

Architectural History and History and ESA Archaeologist Ashleigh Sims, M.A., RPA, who meets the SOI PQS for Archeology provided quality assurance and review.

Research Methods and Results

Records Search

ESA completed a records search at the Northwest Information Center (NWIC) of the California Historical Resources Information System on December 12, 2023 (File No. 23-0820). Previous surveys, studies, and site records were accessed. The purpose of the records search was to (1) determine whether known cultural resources have been recorded within the Project vicinity; (2) assess the likelihood for unrecorded cultural resources to be present based on historical references and the distribution of nearby sites; and (3) develop a context for the identification and preliminary evaluation of cultural resources.

The NWIC records search indicated that one previously recorded cultural resource (P-01-002269), the Eastshore-Grant Transmission Line, crosses over the Project area. However, it will not be impacted by the Project because it is above the vertical ceiling of the Project.

The Hayward WPFC was recorded and evaluated in 2017 (Melvin, 2017) (**Figure 1**). This record is not on file at the NWIC. It was recorded as an individual architectural resource comprising 49 buildings and structures and was found to be ineligible for listing in either the National Register of Historic Places (National Register) or the California Register of Historical Resources (California Register) under any criteria. None of the buildings or structures within the Hayward WPCF were previously evaluated as individual resources.

Native American Correspondence

ESA contacted the California Native American Heritage Commission (NAHC) on December 11, 2023, to request a search of the NAHC's Sacred Lands File (SLF) and a list of Native American representatives who may have knowledge of tribal cultural resources in the Project Area, or interest in the Project. On December 18, 2023, the NAHC provided a list of eighteen Native American representatives from eight tribes who may have knowledge of tribal cultural resources in the Project area or be interested in the Project. The SLF search was negative for sacred sites within 0.5 mile of the Project area. Formal notification was sent electronically to the eighteen representatives identified by the NAHC on December 22, 2023. The California State Water Resources Control Board (SWRCB) is anticipated to conduct tribal consultation as required under Section 106 of the NHPA. The City is anticipated to conduct tribal consultation as required under Assembly Bill (AB) 52.

Archaeological Sensitivity Assessment

This analysis uses the term 'potential' to assess the possibility of cultural resources to be present and 'sensitivity' to assess the likelihood that any possible cultural resources are significant under the California Register and would qualify as a historical resource.

As part of an archaeological sensitivity analysis, site records, historical maps, aerial photography, soil maps, and previous studies were reviewed. The historical maps and aerial imagery show that no historic-era buildings and features that could represent buried historic-era archaeological resources, such as artifact-filled wells or privies, were present within the Project area (NWIC, 2023; USGS, 1899; 1915; 1947; 1959; NETR, 2023). Therefore, the potential for historic-era archaeological resources to be present in the Project site is low.

Based on the Holocene age of the soils and the Project's location along the shoreline of San Francisco Bay, there is the potential for buried pre-contact archaeological deposits in undisturbed portions of the Project area. However, the Project area has incurred decades of extensive soil disturbance caused by the construction, maintenance, and expansion of the WPCF. Additionally, no pre-contact or indigenous resources have been previously identified within 0.5-mile of the Project area (NWIC, 2023). Therefore, the potential for intact pre-contact archaeological resources to be present in the Project site is low.

In summary, due to the extensive disturbance and the lack of known pre-contact and historic-era archaeological resources, the Project's pre-contact and historic-era archaeological resources sensitivity is low.

Architectural Resources Analysis

Summary of 2017 Evaluation of the Hayward WPCF

The 2017 evaluation concluded that the Hayward WPCF is not individually eligible for listing in the National Register or California Register because it lacks significance under any criteria. The report's author did not explicitly evaluate the Hayward WPCF for eligibility at the local level. The Hayward WPCF was found insignificant under Criterion A/1 (event) because it "followed existing trends and patterns [regarding Bay Area municipalities constructing new wastewater treatment plants during the 1950s to conform with government regulations] and was not a leading example or otherwise historically important wastewater treatment plant" (Melvin, 2017: 20). It was found insignificant under Criterion B/2 (person) because "[r]esearch did not reveal that any individual associated with [the Hayward WPCF] has made demonstrably important contributions to history at the local, state, or national level" (Melvin, 2017: 20). The Hayward WPCF was found insignificant under Criterion C/3 (design/construction) because it is "a plant that employed common methods and followed the existing standards from the time of its original construction and early development," the "characteristics [of the International Style of architecture] are present in varying degrees in [the buildings constructed during the 1950s through 1970s], [which] are all very modest expressions of the International Style and not architecturally distinctive," and it "does not represent any of [sanitary engineer Harry N. Jenks'] innovations in the field, a particular phase of his career, or aspect of his work" (Melvin, 2017: 20). Lastly, the Hayward WPCF was found insignificant under Criterion D/4 (information potential) because it "is not a significant or likely source of important information about historic construction materials or technologies that otherwise would not be available through documentary evidence" (Melvin, 2017: 20).

The 2017 evaluation also stated that the Hayward WPCF "does not qualify as a historic district," but no discussion of historic district considerations was presented (Melvin, 2017: 20).

Updated Evaluation of the Hayward WPCF

Per California Public Resources Code Section 5024.1(g)(4), "If the survey is five or more years old […], the survey is updated to identify historical resources which have become eligible or ineligible due to changed circumstances or further documentation and those which have been demolished or altered in a manner that substantially diminishes the significance of the resource." The 2017 evaluation of the Hayward WPCF is more than five years old; therefore, it has been updated by ESA pursuant to current professional standards for eligibility for listing in the National Register and California Register. The City applies California Register criteria to determine eligibility for local designation (City of Hayward Municipal Code Section 10-11.030). ESA has updated the 2017 evaluation of the Hayward WPCF on a California Department of Parks and Recreation 523 Series (DPR 523) update form, and it is appended to this memo (Kahn and Langford, 2024). A summary is presented below, and the reviewer is directed to the DPR 523 update form for the complete analysis.

Individual Significance

ESA concurs with the previous finding that the Hayward WPCF does not possess significance under any National Register or California Register criteria. ESA surveyed the property in early January 2024, carefully reviewed the 2017 evaluation, and conducted limited supplemental research to confirm construction dates and certain key data. We conclude that the historic context was thorough and the evaluation was well supported. The 2017 evaluation included incorrect construction dates for several subject buildings. Data provided by the City of Hayward in January 2024 included corrected construction dates for many of the buildings and structures and identified several others that were omitted from the 2017 evaluation (Carbert, 2024). This superseding data is reflected in the updated evaluation, and it does not change the conclusion that the Hayward WPCF does not appear to be individually eligible for listing in the National Register, California Register, or the City's register of designated historical resources under any criteria.

Historic District Considerations

The Hayward WPCF is located more than 2.5 miles from the any historic district listed in or eligible for listing in the National Register, California Register, or the City's register of designated historical resources. As such, it would not contribute to any known historic district. Additionally, no discontiguous historic district has been identified for which the Hayward WPCF could contribute. Furthermore, no apparent patterns emerge to suggest that there is a potential district or districts that include all or some of the buildings and structures that have reached the 45-year age threshold (i.e., those constructed in or before 1979) located within the Hayward WPCF. No two or more of these buildings and/or structures appear to meet the National Park Service's definition of a district, that is "a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development" (NPS, 1997: 5). As such, none of the age-eligible buildings or structures located within the Hayward WPCF contribute to a potential historic district.

Evaluations of Four Age-eligible Buildings and Structures

Since 2017, four buildings and structures within the Hayward WPCF have reached the 45-year age threshold for consideration as potential historical resources for the purposes of CEQA. While resources that are less than 50 years old are generally not considered potential historic properties for the purposes of NHPA Section 106, a buffer of five years (i.e., 45 years instead of 50 years) has been added to the age-eligibility guideline to allow time for program implementation. The four age-eligible buildings and structures, which are identified in **Figure 1**, have been evaluated by ESA as potential historic properties under NHPA Section 106 and/or historical resources under CEQA.

According to the 2017 evaluation and superseding data received from the City of Hayward in January 2024, these four architectural resources were constructed between 1972 and 1979 (i.e., the period of time during which additional buildings and structures have reached 45 years of age since 2017) (Melvin, 2017: Appendix B). They have been individually evaluated by ESA as potential historic properties under NHPA Section 106 and/or historical resources under CEQA, and they have been recorded on DPR 523 form sets appended to this memo (Kahn and Langford, 2024). A summary is presented in **Table 1** below.

SOURCE: ESA, 2024; ESRI, 2024.

D202200313.00 - Hayward WPCF Improvements Phase II

ESA

*A building or structure without a number was not inventoried in 2017 and is presumed to have been constructed since that time.

Figure 1
Architectural Resources Within the Hayward WPCF

TABLE 1
ARCHITECTURAL RESOURCES WITHIN THE HAYWARD WPCF THAT HAVE BECOME AGE-ELIGIBLE SINCE 2017

Resource No.	Resource Name	Year Constructed	Historic Status Based on 2024 Evaluation
Building 20	Air Compressor Building	1972	Not individually eligible for national, state, or local listing or as a contributor to a known or potential historic district
Structure 23	Digester No. 1	1976	Not individually eligible for national, state, or local listing or as a contributor to a known or potential historic district
Building 27	Maintenance and Electrical Shop	ca. 1968-75	Not individually eligible for national, state, or local listing or as a contributor to a known or potential historic district
Building 28	Mixing and Heating Building	ca. 1975	Not individually eligible for national, state, or local listing or as a contributor to a known or potential historic district

NOTES
General: The architectural resource numbers are keyed to Figure 1.

SOURCES: Carbert, 2024; JRP Historical Consulting, 2017.

Conclusion

The Project's sensitivity to pre-contact and historic-era archaeological resources is low. Neither the Hayward WPCF nor any of the four architectural resources within it that have become age-eligible since 2017 are recommended individually eligible for listing in the National Register, California Register, or the City's register of designated historical resources under any criteria. Additionally, neither the Hayward WPCF nor any of the age-eligible buildings or structures within it contribute to a known or potential historic district eligible for listing in the National Register, California Register, or the City's register of designated historical resources. Therefore, the Hayward WPCF, Building 20, Structure 23, Building 27, and Building 28 are not considered to be historic properties for the purposes of NHPA Section 106 or historical resources for the purposes of CEQA.

References

California Native American Heritage Commission (NAHC). Sacred Lands File (SLF) and Native American Contact List. On file, ESA, December 18, 2023.

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Kahn, Johanna and Amy Langford. DPR 523 Update for Hayward Water Pollution Control Facility. Prepared by Environmental Science Associates, Oakland, CA, for the City of Hayward. January 2024.

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Melvin, Steven. *Historic Resources Inventory and Evaluation Report [for the] City of Hayward Recycled Water Project, Alameda County, California*. Prepared by JRP Historical Consulting, LLC, Davis, CA, for the City of Hayward. May 2017.

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Northwest Information Center (NWIC). Records Search File No. File No. 23-0820. On file, ESA, December 12, 2023.

US Geological Survey (USGS)

1899 Haywards, California, Topographic 15’ Quadrangle, Washington, D.C.
1915 Haywards, California, Topographic 15’ Quadrangle, Washington, D.C.
1947 San Leandro, California, Topographic 15’ Quadrangle, Washington, D.C.
1959 Hayward, California, Topographic 15’ Quadrangle, Washington, D.C.

***Resource Name or #** Hayward Water Pollution Control Facility

***Recorded by:** Johanna Kahn and Amy Langford, ESA ***Date:** January 2024 ☐ Continuation ☒ Update

***P8. Recorded by:** Johanna Kahn and Amy Langford / ESA, 180 Grand Avenue, Suite 1050, Oakland, CA 94612

***P10. Survey Type:** Reconnaissance

***P11. Report Citation**: ESA. *Cultural Resources Survey Report for the City of Hayward Water Pollution Control Facility Improvements Phase II Project.* Prepared for the City of Hayward. January 2024.

***B6. Construction History:** In January 2024, the City of Hayward confirmed the existence of all buildings and structures at the Hayward Water Pollution Control Facility (Hayward WPCF) as well as alterations identified in the 2017 evaluation by Steven Melvin of JRP Historical Consulting. The following inventory of extant buildings and structures is reproduced from the 2017 evaluation, and corrections/updates provided by the City of Hayward are shown in **bold**.

Building / Structure No.	Building / Structure Name	Built Date	Alterations
Structure 1	West Trickling Filter	1953	**1982**
Structure 2	North Primary Clarifier	1953	No known alterations
Structure 3	South Primary Clarifier	1953	No known alterations
Structure 4	Northwest Primary Clarifier	1953	Originally constructed as Secondary Mixing Tank; converted to Primary Clarifier ca. **1982**
Structure 5	Southwest Primary Clarifier	1953	Originally constructed as Primary Mixing Tank; converted to South Flotator-Thickener with retention tank and pressurization system ca. 1970; converted to primary clarifier in 2016
Structure 6	South Vacuator	1953	No known alterations
Structure 7	Digester No. 3	ca. 1953	**Modified in 2002**
Building 8	Site Waste Pump Station & Control House	ca. 1953	**Stairs added, exterior altered, and pump modified in 1967;** raw sewage pump installed ca. 1975; **HVAC system upgraded and pump replaced in 2000;** replacement windows and doors
Structure 9	Sludge Lagoon	1953	Formed from subdivision of Effluent Pond No. 1 ca. 1980-87
Structure 10	Equalization Pond	1953	Formed from subdivision of Effluent Pond No. 1 ca. 1980-87
Structure 11	Bypass Control Box	**1953**	**Modified in 1962 and 2009**
Structure 12	Digester No. 2	ca. 1961	No known alterations
Structure 13	North Vacuator	ca. 1961	Pressurization system installed ca. 1970
Structure 14	Sludge Conditioning Tank	ca. 1961	No known alterations
Structure 15	Water Reclamation Station	**2009**	No known alterations
Building 16	Storage and Maintenance Building	ca. 1961	No known alterations
Building 17	Operations Building **(also known as the Administration Building)**	ca. 1970	Additions built ca. **1981 and** 1994
Structure 18	FOG Receiving Station	ca. 2013	**Modified in 2017**
Building 19	Equipment Housing Structure	ca. 1970	**Modified in 2017**
Building 20	Air Compressor Building	1972	No known alterations
Structure 21	Gasoline Pump	ca. 1970	No known alterations
Building 22	**Southwest Primary Clarified Electrical Building**	**2017**	No known alterations

***Resource Name or #** Hayward Water Pollution Control Facility

***Recorded by:** Johanna Kahn and Amy Langford, ESA ***Date:** January 2024 ☐ Continuation ☒ Update

Building / Structure No.	Building / Structure Name	Built Date	Alterations
Structure 23	Digester No. 1	**1976**	No known alterations
Structure 24	**Cogeneration System Waste Heat Radiator**	**2014**	No known alterations
Building 25	Old Power Generation Station	**1982**	No known alterations; abandoned
Structure 26	**High-pressure Gas Storage Tank**	**1982**	No known alterations
Building 27	Maintenance and Electrical Shop	ca. 1968-75	Originally constructed as Sludge Dewatering Facilities; centrifuge building extension added ca. 1975
Building 28	Mixing and Heating Building	ca. 1975	**Modified in 2017**
Structure 29	Fluid Bed Reactor	ca. 1980-85	No known alterations; abandoned
Building 30	Storage Building	ca. 1980	No known alterations
Building 31	Aeration Blower Building	**2008**	No known alterations
Structure 32	Solids Contact Basins	ca. 2008	No known alterations
Building 33	Engineering Office	ca. 2016	No known alterations
Building 34	Headworks	ca. 1998	**Modified in 2021**
Building 35	Boiler Building	**2002**	No known alterations
Structure 36	Gas Conditioning Area	**2016**	No known alterations
Building 37	Warehouse	ca. 2005	No known alterations
Building 38	Cogeneration Building	ca. 2016	No known alterations
Building 39	12kV Import Export Station	ca. 2008	No known alterations
Structure 40	East Trickling Filter	ca. 2008	No known alterations
Structure 41	Trickling Filter Pumping Station	ca. 2008	No known alterations
Building 42	East Substation	ca. 2008	No known alterations
Structure 43	East Biofilter	ca. 2008	No known alterations
Building 44	Solids Thickening Building	ca. 2008	No known alterations
Structure 45	West Biofilter	ca. 2008	**Modified in 2020**
Building 46	West Substation	ca. 2008	No known alterations
Structure 47	Final Clarifier 1	ca. 2008	No known alterations
Structure 48	Final Clarifier 2	ca. 2008	No known alterations
Structure 49	Soil Bed Odor Filter	**2021**	**Earlier structure replaced in 2021**
Structure 50	**Sludge Polymer Feed System**	**2008**	No known alterations
Structure 51	Stormwater Pump Station	ca. 2008	No known alterations
Building 52	Final Clarifier Electrical Building	ca. 2008	No known alterations

Additionally, the City of Hayward confirmed the existence of the following buildings and structures within the Hayward WPCF, but not their building/structure numbers, construction dates, or locations:

- Recycled Water Storage Tank;
- Recycled Water Pump Station;
- Recycled Water Treatment System;
- Ferric Chloride Facility;
- Standby Power Generator;
- Sludge Drying Beds; and
- Heps (City of Hayward, 2024).

***B10. Significance:**

Updated Historic Context: Development of the Hayward WPCF

The following history of the development of the Hayward WPCF is an excerpt from the *Historic Resources Inventory and Evaluation Report [for the] City of Hayward Recycled Water Project, Alameda County, California* (Melvin, 2017: 16-21). Corrected construction dates were provided by the City of Hayward in January 2024 and added in brackets below.

> *In 1946, the California State Board of Public Health passed a resolution prohibiting raw sewage discharge into San Francisco Bay; the resolution also ordered municipalities to begin immediate development of wastewater treatment facilities. By 1952, the only cities not yet in compliance were Millbrae, Sausalito, and Hayward.*
>
> *In November 1950, the City of Hayward used funds from a federal loan to hire prominent sanitary engineer Harry N. Jenks as a consultant in developing its sewage treatment plant.… Constructed for approximately $2 million on 40 acres purchased from William Johnson, the plant was financed by a $1.7 million revenue bond issue passed in April 1952, later augmented by another $300,000 bond issue passed that December. Contractors Barrett & Hilp and DeLuca Construction Co. completed construction in late 1953. The Hayward Municipal Sewage Treatment Plant [as the WPCF was originally known] originally included a primary biofilter (Structure 1), a primary clarifier (Structure 3), a secondary clarifier (Structure 2), a primary mixing tank (Structure 5), a secondary mixing tank (Structure 4), a vacuator (Structure 6), a primary digester (Structure 7), a control house & pumping plant (Building 8), a hydraulic jump aerator (non-extant), an effluent box (non-extant), sludge drying beds (non-extant), … an effluent pond (Structures 9 and 10, originally designed as one of three ponds) [and a bypass control box (Structure 11)]. …*
>
> *In 1958, Hayward earmarked $835,000 for plant expansion in that year's public works bond issue. Three years later, the City of Hayward approved expansion plans submitted by Jenks, who was hired on again as a consultant. Among the additions were an additional digester (Structure 12), an additional vacuator (Structure 13), a sludge-conditioning tank (Structure 14), a large final clarifier (non-extant), and a biorainator (non-extant). The addition of a sludge conditioning tank allowed for sludge to be de-watered faster using floccule reagents and chemicals. In addition to structures related to wastewater treatment, Jenks' plans also called for the construction of a storage and maintenance building (Building 16) as well as a concrete equipment slab (non-extant, later replaced by Building 19 after 1970). The additions were constructed by Berkeley-based contracting firm C. Norman Peterson, Inc. at a cost of $882,200, well over the amount allotted three years earlier. These additions were all in place by 1966. …*
>
> *By 1969, the plant was processing on average 11 [million gallons per day, or MGD], with 16 MGD during the canning season. This level of production severely taxed the system, which had been upgraded only to handle brief peak periods of 15 MGD. The following year, the City received plans for phase I of a $15 million plant expansion drafted by John Jenks' firm, Jenks & Adamson, to meet the city's needs over the next 20 years. The plans included designs for a new operations [and administration] building (Building 17), an equipment housing structure (Building 19), [an air compressor building] (Building 20), and the conversion of the primary mixing tank (Structure 5) to a flotator-thickener. The plans additionally included designs for extensive chlorination facilities adjacent to the oxidation ponds…. These chemical facilities were urgently needed at the plant, as that June, the Bay Regional Water Quality Control Board, reacting to aerial slide photographs of brownish effluent pouring into the bay from the Hayward Outfall Channel, threatened the city with a cease-and-desist order under the provisions of the Porter-Cologne Water Quality Act. …*
>
> *The south Alameda County municipalities commissioned sanitary engineering firms Jenks & Adamson and Kennedy Engineers to draft a report outlining the most efficient method of implementing [a] sub-regional plan in 1970. Within two years, the firms had designed the inter-municipal "super sewer" at a projected construction cost of $82.42 million, which would be shared by the Alameda County sub-regional dischargers, collectively called the East Bay Dischargers Authority (EBDA).… At the same time that the EBDA "super sewer" plan was developing, the City of Hayward also planned the expansion of its own local sewage treatment facility, called the Hayward Wastewater Treatment Plant by 1975. Having received formal approval by the EBDA and the State Water Resources Control Board, the City of Hayward began implementing the $2.2 million Phase II expansion, which included the construction of an additional digester (Structure 23), a mixing and heating building (Building 28), a waste gas burner [(non-extant)], additional oxidation ponds … [a gasoline pump (Structure 21), and] a centrifuge building extension (non-extant, added to Building 27). …*

Since the mid-1970s, the plant has undergone several subsequent expansions. Somewhat minor additions to the plant include the construction of additional storage facilities [(Building 30 ca. 1980 and Building 37 ca. 2005) [, the old power generation station (Building 25) in 1982, and the high-pressure gas storage tank (Structure 26) in 1982 as well as] the renovation and expansion of the [operations and] administration building (ca. [1981 and] 1994). In the early 1980s, the plant was expanded to include a fluid bed reactor (Structure 29)... In the mid-to-late 1990s, the Headworks (Building 34) [was] constructed [, and in 2002, the boiler building (Building 35) was constructed]. In 2008, the plant completed the massive $58 million Phase I of the Water Pollution Control Facility Improvement Project. This expansion included a second trickling filter (Structure 40), two new final clarifiers (Structures 47 and 48), [aeration blower building (Building 31)], solids contact basins (Structure 32 replaced the ca. 1962 final clarifier), solids thickening facilities (Building 44), [the water reclamation station (Structure 15), the trickling filter pumping station (Structure 41), two biofilters (Structures 43 and 45), the soil bed odor filter (Structure 49), the sludge polymer feed system (Structure 50), the stormwater pump station (Structure 51), the final clarifier electrical building (Building 52)], and a 12kV electrical system (Buildings 39, 42, and 46). In 2013, the FOG (fat, oil, and grease) receiving station (Structure 18) was constructed[. In 2014, the cogeneration system waste heat radiator(Structure 24) was added. In 2016,] the [gas conditioning area (Structure 36) and the] cogeneration building (Building 38) [were] constructed, and Structure 5 was converted to the southwest primary clarifier. Building 33, the engineering office, is a temporary building erected in 2016 to oversee planning and construction. [The southwest primary clarifier electrical building (Building 22) was constructed in 2017.]

<u>Evaluation</u>

The Hayward WPCF was evaluated in 2017 as a single resource comprising 49 buildings and structures, and it was found to be ineligible for listing in the National Register of Historic Places (National Register) and the California Register of Historical Resources (California Register) under any criteria (Melvin, 2017). The 2017 evaluation is more than five years old; therefore, the WPCF has been re-evaluated by ESA pursuant to current professional standards for individual eligibility for listing in the National Register and California Register. The City of Hayward applies California Register criteria to determine eligibility for local designation (City of Hayward Municipal Code Chapter 10, Article 11, Section 10-11.030).

Criterion A/1 – Event. The Hayward WPCF was previously found insignificant under Criterion A/1 because it “followed existing trends and patterns [regarding Bay Area municipalities constructing new wastewater treatment plants during the 1950s to conform with government regulations] and was not a leading example or otherwise historically important wastewater treatment plant” (Melvin, 2017). Additionally, it was among the last three cities in the San Francisco Bay Area (the other two being Millbrae and Sausalito) to comply with state regulations to cease pumping raw sewage directly into the bay and construct a municipal wastewater treatment facility. Supplemental review and research conducted by ESA does not indicate that the Hayward WPCF is associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States. ESA concurs that the Hayward WPCF does not appear to be individually eligible for listing under Criterion A/1.

Criterion B/2 – Person. The Hayward WPCF was previously found insignificant under Criterion B/2 because “[r]esearch did not reveal that any individual associated with [the WPCF] has made demonstrably important contributions to history at the local, state, or national level” (Melvin, 2017). (Note that design professionals are discussed under Criterion C/3.) Supplemental review and research conducted by ESA does not identify individuals from the City of Hayward who were directly and significantly associated with the facility. ESA concurs that the Hayward WPCF does not appear to be individually eligible for listing under Criterion B/2.

Criterion C/3 – Design/Construction. The Hayward WPCF was previously found insignificant under Criterion C/3 because it is “a plant that employed common methods and followed the existing standards from the time of its original construction [in 1953] and early development,” the “characteristics [of the International Style of architecture] are present in varying degrees in [the buildings constructed during the 1950s through 1970s], [which] are all very modest expressions of the International Style and not architecturally distinctive,” and it “does not represent any of [sanitary engineer Harry N. Jenks’] innovations in the field, a particular phase of his career, or aspect of his work” (Melvin, 2017). Of the extant buildings and structures listed in the inventory above, 11 were built in the early 1950s, four were built in the early 1960s, three were built ca. 1970, four were built between 1972 and 1979, four were built in the early 1980s, one was built in the late 1990s, and approximately 25 were built since 2000. Supplemental review and research conducted by ESA does not indicate that the Hayward WPCF embodies the distinctive characteristics of a type, period, region, or method of construction, nor does it represent the work of a master or possess high artistic values. ESA concurs that the Hayward WPCF does not appear to be individually eligible for listing under Criterion C/3.

Criterion D/4 – Information Potential. The Hayward WPCF was previously found insignificant under Criterion D/4 because it “is not a significant or likely source of important information about historic construction materials or technologies that otherwise would not be available through documentary evidence” (Melvin, 2017). Criterion D/4 typically applies to archaeological resources rather than architectural resources. When Criterion D/4 does relate to architectural resources, it is relevant when the resource itself is the principal source of important construction-related information. The Hayward WPCF was constructed using common materials and building techniques and does not appear to have the potential to provide important information related to materials or construction types. ESA concurs that the Hayward WPCF does not appear to be individually eligible for listing under Criterion D/4.

Historic District Considerations

The 2017 evaluation of the Hayward WPCF concluded that it was not eligible for listing in the National Register or California Register as a potential historic district under any criteria; however, no discussion of district considerations was presented (Melvin, 2017).

Based on the architectural descriptions and documentation of the physical development of the Hayward WPCF presented in the 2017 evaluation, no apparent patterns emerge to suggest that there is a potential district or districts that include all or some of the age-eligible buildings and structures (i.e., 45 years or older [those constructed in or before 1979]) located within the Hayward WPCF. As noted above, the Hayward WPCF was constructed in several phases beginning in 1953, and some of the age-eligible buildings and structures are related in terms of architectural design (the majority of which reflect a simple, utilitarian style), function, and/or construction date. Despite these apparent similarities, two or more of these buildings and/or structures do not appear to meet the National Park Service's definition of a district, that is "a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development" (National Park Service, 1997: 5). As such, none of the age-eligible buildings or structures located within the Hayward WPCF contribute to a potential historic district. Additionally, there are no historic districts listed in or eligible for listing in the National Register, California Register, or the City of Hayward's register of designated historical resources within 2.5 miles of the Hayward WPCF; therefore, it does not contribute to any known historic district.

Integrity Analysis

In addition to being eligible for listing under at least one of the four National Register/California Register criteria, a resource must also retain sufficient integrity to convey its historical significance. There are seven aspects to consider when evaluating the integrity of a resource: location, design, setting, materials, workmanship, feeling, and association. As discussed above, the Hayward WPCF does not appear to be individually significant under any National Register or California Register criteria. Therefore, a further discussion of integrity is not presented.

Summary

The Hayward WPCF is not recommended individually eligible for listing in the National Register, California Register, or the City of Hayward's register of designated historical resources under any criteria. Additionally, no age-eligible buildings or structures in the Hayward WPCF contribute to a known or potential historic district eligible for individual listing in the National Register, California Register, or the City of Hayward's register of designated historical resources. As such, the Hayward WPCF would not be considered a historic property for the purposes of Section 106 of the National Historic Preservation Act (NHPA) or a historical resource for the purposes of California Environmental Quality Act (CEQA).

***B12. References:**

Carbert, Kyle (City of Hayward). Email to Johanna Kahn (ESA). January 8, 2024.

City of Hayward Municipal Code Chapter 10, Article 11, Section 10-11.030.

Melvin, Steven. *Historic Resources Inventory and Evaluation Report [for the] City of Hayward Recycled Water Project, Alameda County, California*. Prepared by JRP Historical Consulting, LLC, Davis, CA, for the City of Hayward. May 2017.

National Park Service. *National Register Bulletin: How to Apply the National Register Criteria for Evaluation.* 1997. Accessed January 9, 2024, https://www.nps.gov/subjects/nationalregister/upload/NRB-15_web508.pdf.

State of California — Natural Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI #
Trinomial:

***Resource Name or Number:** Hayward Water Pollution Control Facility

***Map name:** San Leandro, CA ***Scale:** 1:24000 ***Date of Map:** 2018

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # ____________
HRI # ____________
Trinomial ____________
NRHP Status Code 6Z

Other Listings ____________
Review Code ________ Reviewer ____________ Date ________

 ***Resource Name or #** (Assigned by recorder): Hayward Water Pollution Control Facility

P1. Other Identifier: Hayward Water Pollution Control Facility

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** ***a. County:** Alameda

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad:** San Leandro **Date:** 1993 **T:** T3S; **R:** R3W; **Sec:** __; Mount Diablo Meridian

c. Address: 3700 Enterprise Avenue City: Hayward Zip: 94545

d. UTM: (give more than one for large and/or linear resources) Zone: _____; ____________mE/ ____________mN

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate)

APN: 439-0099-002-02

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

This 29.90-acre property at 3700 Enterprise Avenue is the site of the Hayward Water Pollution Control Facility (WPCF) (**Photograph 1**). The parcel is roughly rectangular with the oldest buildings and structures built in 1953 located in the southeast corner of the property near the intersection of Enterprise Avenue and Whitesell Street. Later modifications, additions, and replacements built between 1958 and 2008 were built around this original core area (see **Site Map**). Enterprise Avenue abuts the parcel's southern boundary, with neighboring industrial facilities located immediately to the east and north, and former oxidation ponds, sludge drying beds, and restored marshlands to the west. The facility serves the vast majority of the city of Hayward, with the exception of a portion of north Hayward, whose wastewater is treated by the Oro Loma Sanitary District (see Continuation Sheet).

***P3b. Resource Attributes:** (List attributes and codes) HP9 – Public Utility Building

***P4. Resources Present:** ☒ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession#) **Photograph 1.** Overview of a portion of the Hayward Water Pollution Control Facility; camera facing west, April 21, 2017

***P6. Date Constructed/Age and Sources:** ☒ Historic ☐ Prehistoric ☐ Both
1953 (*The Hayward Daily Review)*

***P7. Owner and Address:**
City of Hayward
777 B Street
Hayward, CA 94541

***P8. Recorded by:** (Name, affiliation, address)
Steven J. Melvin & Samuel M. Skow
JRP Historical Consulting, LLC
2850 Spafford Street
Davis, CA 95618

***P9. Date Recorded:** April 21, 2017

***P10. Survey Type:** (Describe)
Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") JRP Historical Consulting, LLC, "Draft Historic Resources Inventory and Evaluation Report: City of Hayward Recycled Water Project, Alameda County, California," May 2017.

***Attachments:** ☐ None ☐ Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐Other (list) ____________

BUILDING, STRUCTURE, AND OBJECT RECORD

***NRHP Status Code**: 6Z

***Resource Name or #** (Assigned by recorder): Hayward Water Pollution Control Facility

B1. Historic Name: Hayward Municipal Sewage Treatment Plant; Hayward Wastewater Treatment Plant

B2. Common Name: Hayward Water Pollution Control Facility

B3. Original Use: Sewage Treatment B4. Present Use: Sewage Treatment

***B5. Architectural Style**: Utilitarian; International

***B6. Construction History**: (Construction date, alteration, and date of alterations) Originally built in 1953 with numerous subsequent alterations and additions. See table in Section B6 on Continuation Sheet for all dates of construction, additions, and alterations

***B7. Moved?** ☒ **No** ☐ **Yes** ☐ **Unknown** **Date:** ______ **Original Location:** ______

***B8. Related Features:** ______

B9. Architect / Engineer: Harry N. Jenks, Sanitary Engineer; City of Hayward, Dept. of Public Works, Engineering Division

b. Builder: Barrett & Hilp, Contractors; DeLuca Construction Co.

***B10. Significance: Theme:** N/A **Area:** N/A

Period of Significance: N/A **Property Type:** N/A **Applicable Criteria:** N/A

(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The Hayward Water Pollution Control Facility does not appear to meet the criteria for listing in the National Register of Historic Places (NRHP) or the California Register of Historical Resources (CRHR), nor does it appear to be an historical resource for the purposes of CEQA. This property has been evaluated in accordance with Section 15064.5(a)(2)-(3) of the CEQA Guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code. (See Continuation Sheet.)

B11. Additional Resource Attributes: (List attributes and codes) ____

***B12. References**: *Hayward Daily Review*; City of Hayward Engineering Division, Various Plans; Martin V. Melosi, *The Sanitary City*; HistoricAerials.com; Jenks & Adamson, Various Plans; See also footnotes.

B13. Remarks:

***B14. Evaluator**: Steven J. Melvin

***Date of Evaluation**: April 2017

(This space reserved for official comments.)

(Sketch Map with north arrow required.)

INSERT

P3a. Description (continued):

For the purposes of evaluation, the buildings and structures recorded on this form have been numbered **1 – 49**, in general chronological order, with numbers **1 – 10** constituting the nine structures and one building that remain from the plant's original construction.

Structure 1, the West Trickling Filter, is located at the northwest corner of the intersection of Whitesell Street and Enterprise Avenue (**Photograph 2**). This roughly 70-foot-tall cylindrical structure measures approximately 150 feet in diameter and features a poured concrete foundation, corrugated fiberglass panels, horizontal metal rings with vertical beams that serve as the exterior frame, and a circular concrete ridge along the top. A metal spiral staircase with metal handrails is located along the west side. Influent enters the structure through a metal pump located at the base along the south side (**Photograph 3**). At the top of the structure, a rotating machine with four spinning metal arms aligned at 90 degree angles pours influent through rubber sluice grates, where the liquid trickles through and heavier solids are removed (**Photograph 4**).

Structures 2 – 5, the North, South, Northwest, and Southwest Primary Clarifiers, respectively, are located immediately west adjacent to **Structure 1** (**Photograph 5**). The four, identical, cylindrical sub-grade concrete settling basins measure roughly 80 feet in diameter and feature protective metal railings along their top perimeters. The clarifiers' interiors are divided into three compartments, with metal inner rings at their center where the influent enters, and circular weirs running parallel along the structure's interior perimeter where the effluent exits. Spinning mechanical metal rakes are located along the tops and bottoms of the structures. The bottom rakes were inaccessible at the time of this survey. Each clarifier has a metal catwalk with protective metal handrails that traverses the center.

Structure 6, the South Vacuator, is located at the center between **Structures 2 – 5** (**Photograph 5**). This cylindrical concrete structure measures roughly 35 feet in diameter and features a dome roof with a circular metal service entry, metal protective railing along the top ledge, and metal staircases with metal handrails along its north and south sides (**Photograph 6**). Metal piping is located along the north and west sides. An elevated concrete platform with protective metal railing stands immediately east adjacent.

Structure 7, Digester No. 3, is located immediately northwest of **Structure 4** (**Photograph 5**). This cylindrical concrete structure measures roughly 85 feet in diameter and features a dome roof with a circular metal service entry, metal protective railing along the top ledge, incoming and outgoing metal piping along the perimeter and the roof, and a metal staircase with metal handrails granting access to the roof on the east side (**Photograph 7**).

Building 8, the Site Waste Pump Station, is located immediately east adjacent to **Structure 7** (**Photograph 8**). This approximately 1,250-square-foot, International-style, single-story concrete building is clad in smooth stucco and features a rectangular footprint, a concrete foundation, a flat roof with parapets and roof vents, metal piping and louvered vents on the south, east, and north sides, and double glass-and-metal personnel doors on the south and north sides (**Photograph 9**). Fenestration consists of vinyl-frame, horizontal-sliding windows. The north side has an additional glass and metal door framed by brick half walls. The building features the engravings "Health" and "Progress" on the east side and "Hayward Municipal Sewage Treatment Plant" on the north side. On the east side is the basement level pumping station, with metal above-grade pumping equipment and a metal grate covering the sub-grade machinery.

Structures 9 and **10**, the Sludge Lagoon and Equalization Pond, respectively, are located near the southwest corner of the parcel (**Photograph 10**). The westernmost **Structure 9** is a former earth-lined pond that encompasses approximately 3,700 square feet. **Structure 10** is approximately 1.25 acres and features earth-lining along the interior, with concrete partitions along its outside perimeter. The Equalization Pond also has mechanical aeration equipment at the center and northeast corner as well as an adjacent concrete platform with protective metal railing (**Photograph 11**).

Structure 11, the Bypass Control Box, is located immediately north of **Structure 6**, between **Structures 2** and **4** (**Photograph 12**). This structure features a sub-grade concrete basin framed by protective metal railing, with mechanical pumping equipment and manual controls built into an adjacent concrete platform. The basin contains a large, secured metal pipe and several smaller adjacent pipes (**Photograph 13**).

Structure 12, Digester No. 2, is located immediately north of **Structure 7** (**Photograph 14**). This cylindrical concrete structure measures roughly 100 feet in diameter and features a dome roof with a circular metal service entry, metal protective railing along the top ledge, and incoming and outgoing metal piping extending between Digester No. 3 along the perimeter and the roof with metal bracing.

Structure 13, the North Vacuator, is located immediately east of **Structure 12** (**Photograph 15**). This cylindrical concrete structure measures roughly 50 feet in diameter and has a dome roof with a circular metal service entry, metal protective railing along the top ledge, and a metal staircase with metal handrails on its south side. The staircase is divided between two flights, connecting to an elevated concrete platform, with metal pumping equipment directly adjacent.

Structure 14, the Sludge Conditioning Tank, is located due west of **Structure 4** (**Photograph 16**). This cylindrical, sub-grade concrete basin is framed by protective metal railing along its top perimeter, with mechanical pumping equipment located west adjacent.

Structure 15, the Water Reclamation Station, is located west adjacent to **Structure 14** (**Photograph 16**). This station features a small shed building, two large upright metal water tanks, and six smaller suspended water tanks. This utilitarian, approximately 90-square-foot vinyl shed building has a square footprint, a low-pitched, side-gable roof, with a flush panel personnel doors and rectangular louvered vent on the east side. South adjacent to the building are two large upright metal tanks accessible by metal ladders, and to the west are two parallels rows of three smaller suspended metal tanks. Metal piping with concrete platforms framed by metal protective railing extend along the east and south sides.

Building 16, the Storage and Maintenance Building, is located directly west of **Structure 7** (**Photograph 17**). This approximately 1,300-square-foot, metal-frame building has a rectangular footprint, a front-gable roof, and raised-seam metal roofing and siding. Two flush, metal, personnel doors are located on the north side, with metal roll-up doors on the east side (**Photograph 18**). Fenestration consists of metal-frame, multi-pane, tilt-out windows on all sides. On the south side of the building is **Structure 21**, the Gasoline Pump, enclosed by chain-link fencing and sheltered by a metal shed-roof extension.

Building 17, the Operations Building, is located due east of **Structure 13** (**Photograph 19**). This approximately 7,000-square-foot, single-story, International-style, concrete building features an irregular footprint, a flat roof with parapets, and multiple bays on each side. The south-side façade features a flat-roof shelter extension supported by square concrete pillars, with a patterned brick privacy wall between the two centermost pillars. Metal-frame, floor-to-ceiling glass panels are located along the southwest corner. The main south-side entrance features double glass-and-metal doors (**Photograph 20**). The east-side extension features metal-frame, multi-pane, tilt-out windows and a concrete ramp with metal handrail (**Photograph 21**).

Structure 18, the FOG (Fat, Oil, and Grease) Receiving Station, is located between **Structures 12** and **13** to the (**Photograph 22**). This structure consists of a large, cylindrical, upright metal tank in a square concrete bed surrounded by metal piping.

Building 19, the Equipment Housing Structure, is located between **Structures 12** and **13** to the south (**Photograph 23**). This approximately 1,150-square-foot, single-story, International-style, concrete building features a generally rectangular footprint, a flat roof with parapets and metal roof vents, and multiple sets of double glass-and-metal doors flanked by metal-frame, fixed-pane windows topped by a metal-frame transom window on the south side.

Building 20, the Air Compressor Building, is located east adjacent to **Structure 14** (**Photograph 16**). This approximately 206-square-foot, single-story, metal-frame building features a square footprint, a flat roof with slight overhang, and raised-seam roofing and siding. The building features metal-frame, fixed-pane windows on the east, west, and south sides, and double, metal doors with lights and rectangular louvered vents on the north sides (**Photograph 24**). An upright metal water tank is located at the southeast corner.

Structure 21, the Gasoline Pump, is located south adjacent to **Building 16** (**Photograph 20**). The structure was inaccessible at the time of the survey as it is enclosed by chain-link fencing.

Building 22, the Chemical Feed Building, located southwest adjacent to **Structure 5** (**Photograph 25**), is an approximately 265-square-foot, single-story, metal-frame building with a square footprint, a flat roof, and raised-seam metal roofing and siding. The building has metal piping on its east and west sides and double metal personnel doors with single lights and rectangular louvered vents on the north side.

Structure 23, Digester No. 3, is located north adjacent to **Structure 12** (**Photograph 26 P1120731**). This cylindrical concrete structure measures roughly 85 feet in diameter and covered by a dome roof with a circular metal service entry, metal protective railing along the top ledge, and incoming and outgoing metal piping extending between Digester No. 2 along the perimeter and the roof with metal bracing.

Structure 24, the Waste Gas Burner, is located immediately north of **Building 17** (**Photograph 27**). The station features a metal gasoline pump, industrial machinery, a horizontal metal fuel tank, a large, square metal generator, and a small wood utility shed with a low-pitched, side-gable roof, horizontal wood-board cladding, and a flush panel personnel door on the west side.

Building 25, the Old Power Generation Station, is located immediately northwest of **Structure 1** (**Photograph 28**). This approximately 2,200-square-foot, single-story, International-style, concrete building has a rectangular footprint, a concrete foundation, a flat roof with parapets, piping, and metal roof vents, and four symmetrical bays on the north and south sides. Each north- and south-side bay contains twin, vertical, rectangular louvered vents (**Photograph 29**). The westernmost bay on the south side of the building contains a metal personnel door with single light contained within a vertical vent. This building is no longer operational.

Structure 26, the Gas Meter Installation, is located immediately west of **Structure 12 (Photograph 30).** This structure features a horizontal fuel tank supported in a metal cradle installed in a concrete platform.

Building 27, the Maintenance and Electrical Shop, located immediately west of **Building 16 (Photograph 31)**, is an approximately 4,830-square-foot, metal-frame building with a rectangular plan, a front-gable roof, and raised-seam metal roofing and siding. A set of double metal personnel doors with a single light is located on the south side, with another similar single door toward the south end of the east side. The east side features four roll-up metal garage doors. Fenestration consists of metal-frame, horizontal-sliding windows. A row of roof vents lines the top of the roof.

Building 28, the Mixing and Heating Building, is located east adjacent to **Structure 23 (Photograph 26)**. It is an approximately 830-square-foot, single-story concrete building topped with a flat roof with parapets framed by metal protective railing, accessible from the east side by a metal staircase with metal handrails. Entrances consist of two pairs of double glass-and-metal doors on the east side. The south side contains two metal-frame, fixed-pane windows.

Structure 29, the Fluid Bed Reactor, is located immediately west of **Structures 4** and **5** (**Photograph 32**). This structure is framed by metal protective railing and consists of an approximately 560-square-foot, concrete building flanked on both sides by long rectangular basins subdivided into four cells each. Pumping equipment is located near the south end of the structure. The building is accessed by two metal personnel doors with single lights and rectangular louvered vents, located on the east side. The structure is no longer operational.

Building 30, the Storage Building, is located immediately north of **Building 16 (Photograph 33)**. It is a metal-frame building of approximately 1,075 square-feet, and has a rectangular footprint, low-pitched, side-gable roof, and raised-seam metal roofing and siding. A flush metal personnel door with a single light is located on the south side, and the east side contains a metal roll-up door. Fenestration consists of metal-frame, horizontal-sliding windows on the east and south sides.

Building 31, the Aeration Blower Building, is located immediately southwest of **Structure 29** (**Photograph 34**). This approximately 1,960-square-foot, metal-frame building has a rectangular plan, low-pitched, side-gable roof with metal roof vents, and raised-seam metal roofing and siding. The building has two flush metal personnel doors with single lights at the north end of the east side and the east end of the south side. Aeration machinery on the south side is accessed by an elevated metal platform framed by metal protective railing, and electrical equipment on the east side is elevated on concrete blocks.

Structure 32, the Solids Contact Basins, is located immediately west of **Building 31** (**Photograph 35**). This approximately 11,730-square-foot, sub-grade, concrete structure is framed by protective metal railing and consists of three basins divided by concrete partitions and traversed by metal catwalks with metal handrails (**Photograph 36**). East-west concrete beams provide additional structural support.

Building 33, the Engineering Office, is located east of **Building 17** (**Photograph 37**). It is an approximately 800-square-foot, elevated, single-story, temporary building with a rectangular footprint, hip roof with front gable clad with composition shingles, and vertical-board siding. The symmetrical west façade features a central, multi-light, wood door with sidelights flanked on both sides by two pairs of vinyl replacement windows. The entrance is accessed by a metal staircase with metal handrails.

Building 34, the Headworks, is located immediately east of **Building 25** (**Photograph 38**). This International-style building of approximately 1,600 square-feet is one story with a rectangular footprint, poured concrete walls and foundation, a flat roof with parapets and metal roof vents, and three bays on each side. The easternmost two bays on the north side contain double glass-and-metal doors and metal I-beams protruding overhead. The east side features a flush metal personnel door and a network of pipes (**Photograph 39**). Pumps and chemical equipment are located on concrete platforms on the south side of the building.

Building 35, the Boiler Building, is located immediately west of **Building 25** (**Photograph 28**). This approximately 720-square-foot, single-story, International-style, concrete building features a generally square footprint, a flat roof with parapet, and three symmetrical bays on the east and west sides, and two bays on the north and south (**Photograph 29**). The north side contains a flush metal personnel door with a single light and an overhead louvered vent. A set of double glass-and-metal doors is located on the south side.

Structure 36, the Gas Conditioning Area, is located immediately west of **Structure 23** (**Photograph 40**). The structure consists of a complex array of metal pumps and fuel tanks installed in a concrete foundation. Some elevated tanks are accessible by attached metal ladders.

Building 37, the Warehouse, is located west adjacent to **Structure 36** (**Photograph 41**). This approximately 3,600-square-foot, single-story, metal-frame building is rectangular in plan and topped by a low-pitched, side-gable roof. The roof and walls are both made of raised-seam metal panels. On the east side are flush metal personnel doors and three metal roll-up garage doors are on the south side.

Building 38, the Cogeneration Building, is located immediately east of **Building 28** (**Photograph 42**). This approximately 3,000-square-foot, metal-frame building with a rectangular footprint has a front-gable metal-panel roof, and metal-panel siding. On the east side and south side are flush metal doors with single lights and metal overhead awnings. Windows are metal-frame, horizontal-sliding behind metal slats. Pumping and mechanical equipment are located along the south and east sides of the building.

Building 39, the 12kV Import Export Station, is east of **Structure 24** (**Photograph 43**). This rectangular, single-story concrete-block building of approximately 930 square-feet has a flat roof with parapets, and a mixture of plain and textured concrete-block siding. A strip of flush concrete wraps around the top of the building. A flush metal personnel door with single light and a metal roll-up garage door are located on the south side. A metal transformer is located west adjacent to the building on a concrete platform.

Structure 40, the East Trickling Filter, is located on the opposite side of Whitesell Street from the majority of the plant (**Photograph 44**). This cylindrical concrete structure measures approximately 220 feet in diameter and features is set on a poured concrete foundation, topped by a dome roof, and has a spiral staircase with metal handrails ascending the structure along the western side. Large metal pumping equipment is located along the eastern and southern sides. A concrete platform framed by metal protective railing is located adjacent to the south.

Structure 41, the Trickling Filter Pumping Station, is located south adjacent to **Structure 40** (**Photograph 44**). This structure contains metal piping and mechanical equipment installed in concrete foundations.

Building 42, the East Substation, is located immediately southeast of **Structure 40** (**Photograph 45**). This approximately 785-square-foot, concrete-block building is square in plan and has a flat roof with parapets and a mixture of plain and textured concrete-block siding. A strip of flush concrete wraps around the top of the building. A set of double flush metal personnel doors and a metal roll-up garage door are located on the west side. Electrical equipment on concrete platforms are located on the north, east, and south sides.

Structure 43, the East Biofilter, is northeast of **Structure 40** (**Photograph 46**) and consists of a shallow, roughly 0.50-acre, earth-lined pit subdivided in half by an earthen berm.

Building 44, the Solids Thickening Building, is located due west of **Building 37** (**Photograph 47**). This approximately 3,650-square-foot, multi-level, concrete-block building features an irregular footprint, a flat roof with parapets, and a mixture of plain and textured concrete-block siding. A strip of flush concrete wraps around the tops of the two different levels of the building. Flush metal personnel doors with single lights are located along the west-side pop-out extension, and metal roll-up garage doors are located on the south side. Pumping equipment and chemical storage tanks are contained in a concrete bed framed by protective metal railing at the northwest corner.

Structure 45, the West Biofilter, is located due west of **Building 44 (Photograph 48).** This structure consists of a roughly 5,200-square-foot raised bed subdivided by a wood partition into two equal compartments. The walls are horizontal wood boards secured with vertical metal beams. Pumping equipment installed in concrete platforms is located east adjacent to the structure.

Building 46, the West Substation, is located immediately south of **Structure 45** (**Photograph 49**). This rectangular, approximately 500-square-foot concrete-block building has a flat roof with parapets, and a mixture of plain and textured concrete-block siding. A strip of flush concrete wraps around the top of the building. A flush metal personnel door with single light is located on the south side. A metal transformer is located near the southeast corner.

Structures 47 and **48**, Final Clarifiers 1 and 2, respectively, are located immediately west of **Building 27** (**Photograph 50**). The two, identical, cylindrical sub-grade concrete settling basins measure roughly 125 feet in diameter and have protective metal railings along their top perimeters. The clarifiers' interiors are divided into multiple compartments, with concentric metal rings where influent enters, and jagged weirs running parallel along the interior perimeter where effluent exits. Spinning mechanical metal rakes are located along the tops and bottoms of the structures. The bottom rakes were inaccessible at the time of this survey. Each clarifier is traversed by a metal catwalk with protective metal handrails.

Structure 49, the Soil Bed Odor Filter, is located immediately west of **Structure 43** (**Photograph 51**). The structure is a roughly 4,800-square-foot raised bed subdivided by a wood partition into two equal compartments. The walls are horizontal wood boards secured with vertical wood posts.

Structure 50, the No. 3 Water System, is located north adjacent to **Structure 14** (**Photograph 52**). This structure is a metal-frame shelter with raised-seam metal walls, corrugated metal shed roof and an adjacent metal-frame utility shelf with square plastic water tanks.

Structure 51, the Stormwater Pump Station, is located immediately southwest of **Structure 32** (**Photograph 53**). This structure consists of metal pumping and mechanical equipment installed in a concrete platform.

Building 52, the Final Clarifier Electrical Building, is located immediately south of **Structure 48** (**Photograph 54**). This rectangular concrete-block building has a flat roof with parapets, and a mixture of plain and textured concrete-block siding. A strip of flush concrete wraps around the top of the building. A flush metal personnel door is located on the east side. Immediately southeast adjacent to the building is an elevated concrete equipment platform with concrete stairs and protective metal railing.

*B6. Construction History (continued):

Building / Structure No.	Building / Structure Name	Built Date	Alterations
Structure 1	West Trickling Filter	1953	No known alterations
Structure 2	North Primary Clarifier	1953	No known alterations
Structure 3	South Primary Clarifier	1953	No known alterations
Structure 4	Northwest Primary Clarifier	1953	Originally constructed as Secondary Mixing Tank; converted to Primary Clarifier ca. 1972
Structure 5	Southwest Primary Clarifier	1953	Originally constructed as Primary Mixing Tank; converted to South Flotator – Thickener with retention tank and pressurization system ca. 1970; converted to primary clarifier in 2016
Structure 6	South Vacuator	1953	No known alterations
Structure 7	Digester No. 3	ca. 1953	No known alterations
Building 8	Site Waste Pump Station & Control House	ca. 1953	Raw sewage pump installed ca. 1975; replacement windows and doors
Structure 9	Sludge Lagoon	1953	Formed from subdivision of Effluent Pond No. 1 ca. 1980 - 1987
Structure 10	Equalization Pond	1953	Formed from subdivision of Effluent Pond No. 1 ca. 1980 - 1987
Structure 11	Bypass Control Box	ca. 1961	No known alterations
Structure 12	Digester No. 2	ca. 1961	No known alterations
Structure 13	North Vacuator	ca. 1961	Pressurization system installed ca. 1970
Structure 14	Sludge Conditioning Tank	ca. 1961	No known alterations
Structure 15	Water Reclamation Station	ca. 2016	No known alterations
Building 16	Storage and Maintenance Building	ca. 1961	No known alterations
Building 17	Operations Building	ca. 1970	Additions constructed ca. 1994
Structure 18	FOG Receiving Station	ca. 2013	No known alterations
Building 19	Equipment Housing Structure	ca. 1970	No known alterations
Building 20	Air Compressor Building	1972	No known alterations
Structure 21	Gasoline Pump	ca. 1970	No known alterations
Building 22	Chemical Feed Building	ca. 1970 - 1980	No known alterations
Structure 23	Digester No. 1	ca. 1975	No known alterations
Structure 24	Waste Gas Burner	ca. 1975	No known alterations
Building 25	Old Power Generation Station	ca. 1975	No known alterations; abandoned

Building / Structure No.	Building / Structure Name	Built Date	Alterations
Structure 26	Gas Meter Installation	ca. 1975	No known alterations
Building 27	Maintenance and Electrical Shop	ca. 1968 - 1975	Originally constructed as Sludge Dewatering Facilities; centrifuge building extension added ca. 1975
Building 28	Mixing and Heating Building	ca. 1975	No known alterations
Structure 29	Fluid Bed Reactor	ca. 1980 – 1985	No known alterations; abandoned
Building 30	Storage Building	ca. 1980	No known alterations
Building 31	Aeration Blower Building	ca. 1980 - 1987	No known alterations
Structure 32	Solids Contact Basins	ca. 2008	No known alterations
Building 33	Engineering Office	ca. 2016	No known alterations
Building 34	Headworks	ca. 1998	No known alterations
Building 35	Boiler Building	ca. 1993 - 2000	No known alterations
Structure 36	Gas Conditioning Area	ca. 2005 - 2009	No known alterations
Building 37	Warehouse	ca. 2005	No known alterations
Building 38	Cogeneration Building	ca. 2016	No known alterations
Building 39	12kV Import Export Station	ca. 2008	No known alterations
Structure 40	East Trickling Filter	ca. 2008	No known alterations
Structure 41	Trickling Filter Pumping Station	ca. 2008	No known alterations
Building 42	East Substation	ca. 2008	No known alterations
Structure 43	East Biofilter	ca. 2008	No known alterations
Building 44	Solids Thickening Building	ca. 2008	No known alterations
Structure 45	West Biofilter	ca. 2008	No known alterations
Building 46	West Substation	ca. 2008	No known alterations
Structure 47	Final Clarifier 1	ca. 2008	No known alterations
Structure 48	Final Clarifier 2	ca. 2008	No known alterations
Structure 49	Soil Bed Odor Filter	ca. 2008	No known alterations
Structure 50	No. 3 Water System	ca. 1981	No known alterations
Structure 51	Stormwater Pump Station	ca. 2008	No known alterations
Building 52	Final Clarifier Electrical Building	ca. 2008	No known alterations

B10. Significance (continued):

Historic Context

Post-World War II Development

After World War II, the Bay Area experienced a long period of economic, industrial, and suburban growth that manifested itself in the study area as new residential subdivisions and industrial parks. Development in this area was facilitated by the annexation of this land by the City of Hayward in the 1950s and by the construction of freeways. The I-880/Nimitz Freeway, near the eastern edge of the study area, was built in stages, beginning with the first section opening in Oakland in 1949. Work then progressed southward with the portion through the study area being the final section to open in 1958. Another major freeway project was the improvement of Highway 92 in the southern part of the study area to a four-lane divided freeway in the 1960s, making it a principal trans-bay crossing via the San Mateo Bridge. Part of the Highway 92 improvements included freeway interchanges at Hesperian Boulevard, Industrial Boulevard, and Clawiter Road, which provided easy freeway access to those residents and businesses in the study area. New development gravitated to land along these freeways, and by the 1970s, the study area was built up with residential subdivisions and industrial buildings (**Plate 1**).[1]

Plate 1: Aerial image of western Hayward in 1968 showing the distinct division between the residential subdivisions on the right side of the image (east), and the developing industrial area on the left side.

The study area has two distinct zones divided by Industrial Boulevard/Clawiter Road: a residential zone between I-880 and Industrial Boulevard/Clawiter Road, and an industrial zone west of Industrial Boulevard/Clawiter Road. These residential areas are characterized by post-war tract subdivisions built from the late 1940s through the 1970s. These are generally laid out on curvilinear streets and cul-de-sacs rather than rectilinear grids. Some of the first of these were on Tennyson Road, West Street, and Cryer Street. Subdivision development continued to fill in this area through the 1970s, by which time it had been

[1] Kenneth T. Jackson, *Crabgrass Frontier: The Suburbanization of the United States* (New York, NY: Oxford University Press, 1985), 187, 233, 238-242; James E. Vance, Jr., *Geography and Urban Evolution in the San Francisco Bay Area* (Berkeley, CA: University of California Press, 1964), 66; Andres Duany, Elizabeth Plater-Zyberk, and Jeff Speck, *Suburban Nation: The Rise of Sprawl and the Decline of the American Dream* (New York, NY: North Point Press, 2000), 18-19; HistoricAerials.com, Historic Aerial Images, 1946, 1958, 1966, 1968, 1980.

almost completely built up. Residential development also included several mobile home parks and apartment buildings. While this part of the study area is mostly post-war era housing, some early twentieth century residences in the Mt. Eden community north of Depot Road remained. Another notable development within this residential area is Chabot College, a community college constructed in the 1960s at Depot Road and Hesperian Boulevard.[2]

Beginning the in 1950s, civic leaders such as the Hayward Industrial Commission and the City of Hayward both vigorously sought and encouraged industries to locate in Hayward. They courted specific industries and took other actions such as annexing land, building roads, and rezoning tracts for industrial purposes. The first large-scale industrial tract to be built in Hayward was the South Hayward Industrial Annex in 1957, located on Whipple Road southeast of the study area. That same year, a second industrial park was laid out on Whipple Road.[3]

The development of post-war industrial tracts in the study area lagged somewhat behind. From the end of the war to 1961, almost no new industrial development occurred. Among the few industrial properties built during the 1950s were the Hayward Water Pollution Control Facility in 1953 and an unknown industrial building along the railroad tracks on Clawiter Road about the same time. The City's efforts to transform this area west of Industrial Boulevard/Clawiter Road began in earnest in 1958 when the City of Hayward rezoned it as industrial.[4] Another main component of the plan was the construction of Industrial Boulevard, which did not previously exist. The City completed the first section of Industrial Boulevard from West Winton Avenue to Highway 92 in 1961, and from Highway 92 to Hesperian Boulevard in 1963. This project also included the improvement of Clawiter Road. Once completed, both Industrial Boulevard and Clawiter Road were wide, four-lane thoroughfares built to accommodate large truck traffic. Another important transportation improvement was the construction of two interchanges at Highway 92 at Clawiter Road and at Industrial Boulevard in the early 1960s. The final major element of the plan to industrialize this area was the demolition of Russell City in the late 1960s as discussed above, which cleared land for industrial purposes.[5] The first industrial park to open in the study area was the 100-acre Pauley-Herziger Industrial Park in 1961 at Industrial Boulevard and West Winton Avenue; industrial development of this zone proceeded at a steady pace thereafter (**Plate 2**).[6]

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[2] HistoricAerials.com, Historic Aerial Images, 1946, 1958, 1966, 1968, 1980; Jill Hupp, *Volume 1: Index to "California Highways and Public Works," 1937-1967*, California Department of Transportation, 1997, 74.
[3] City of Hayward, "City of Hayward General Plan," 2002, 2-1, 2-3; "Industrial Giant," *The Hayward Daily Review*, 17 March 1958, 2; "Four Annexations to City Draw Near," *The Hayward Daily Review*, 7 October 1954, 2; "Council is Charged With Industry Job," *The Hayward Daily Review*, 7 October 1955, 1; "South Hayward Annex Protests Fail to Kill Plan," *The Hayward Daily Review*, 12 June 1957, 1; "Industrial Street," *The Hayward Daily Review*, 13 February 1964, 32.
[4] "Milestones Recognized in Hayward," *Hayward Daily Review*, 29 September 1961, 15; "Hayward Puts Out Lures to Industry," *Hayward Daily Review*, 29 September 1961, 15; "Planner Veto Change," *Hayward Daily Review*, 10 June 1966, 9.
[5] HistoricAerials.com, Historic Aerial Images, 1946, 1958, 1966, 1968, 1980; "County Board OK's Plan on Industry Blvd," *Hayward Daily Review*, 14 December 1960, 5; "Another Industrial Boulevard Link on Tap," *Hayward Daily Review*, 3 January 1963, 9.
[6] "Milestones Recognized in Hayward," *Hayward Daily Review*, 29 September 1961, 15; "Hayward Puts Out Lures to Industry," *Hayward Daily Review*, 29 September 1961, 15; "Planner Veto Change," *Hayward Daily Review*, 10 June 1966, 9; HistoricAerials.com, Historic Aerial Images, 1946, 1958, 1966, 1968, 1980; USGS, *Hayward Quadrangle*, 1:24,000, 7.5-minute (Washington, D.C.: USGS, 1947, 1959, 1968, 1973); USGS, *San Leandro*, 1:24,000, 7.5-minute (Washington, D.C.: USGS, 1948, 1959, 1968, 1973); USGS, *Newark*, 1:24,000, 7.5-minute (Washington, D.C.: USGS, 1948, 1959, 1968, 1973).

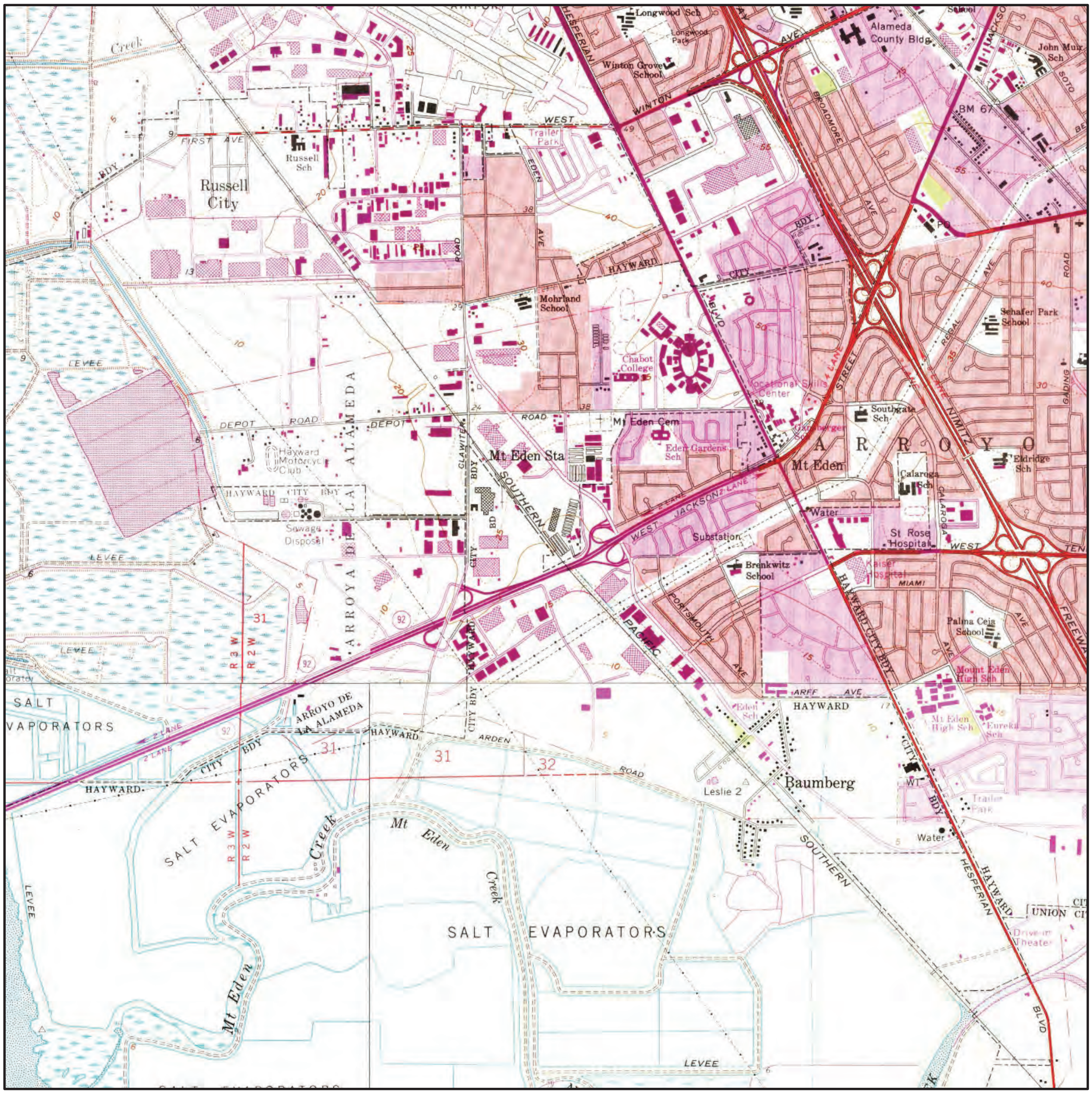

Plate 2: Portion of 1973 USGS topographic map showing development in western Hayward. The purple buildings and shaded areas indicate development that occurred between 1968 and 1973.

By 1980, some undeveloped industrial parcels remained, but the overall character of this area was clearly established by this time. It consisted of a wide range of buildings from very large tilt-up style buildings, to small, service-oriented, light industrial businesses. Similar to the residential subdivisions, the industrial tracts also exhibited curvilinear and cul-de-sac road patterns. Many of the firms also took advantage of their proximity to the railroad and built spurs to serve their businesses.[7]

Both the residential and industrial development in the study area prompted other infrastructure improvements in addition to roads. This flat, low-lying area near the bay had historically been an area with poor water drainage that led to local flooding.

[7] HistoricAerials.com, Historic Aerial Images, 1946, 1958, 1966, 1968, 1980.

In 1949, the Alameda County Flood Control and Water Conservation District (ACFCWCD) formed to build infrastructure to provide flood control and conserve water throughout Alameda County. The ACFCWCD divided the county into administrative zones corresponding to watersheds and community boundaries and proceeded to construct infrastructure that included pump stations, erosion control structures, dams, pipelines, drainage channels, levees, and creek improvements. In the study area, three flood control canals were built to carry away rain water and prevent it from pooling up: Line A, built in 1955, which begins at the intersection of West Street and Mohr Drive and flows generally west, crossing Cabot Boulevard and continuing into the bay; Line A-2, built in 1957, which crosses Arf Avenue just west of Morningside Drive and also crosses Industrial Blvd east of Baumberg Avenue; and Line A-2, built ca. 1967, which crosses West Winton Avenue west of Cabot Boulevard.[8]

Evolution of Wastewater Disposal

Modern methods for disposal of human wastewater (sewage) began during the nineteenth century as industrialization fueled population growth and became a particular challenge in urban areas throughout the United States. Advances in both water treatment and water supply systems came into being in response to inadequate, unreliable, and unsanitary wastewater facilities that largely consisted of privy vaults and cesspools. Public health officials and engineers across the country advocated for underground, city-wide sewer systems under municipal control to efficiently remove wastewater, but public support for sewer systems was slow. Beginning about 1880, a few cities began to build publicly-funded sewer systems. Over the next 40 years, sewer systems expanded so that by 1920, 87 percent of the urban population in the country was served by a sewer system. The systems were generally underground conduits that conveyed raw sewage, often along with storm water, into the nearest natural waterway. While this method improved sanitation in the developed areas, it also polluted rivers and streams, which caused health problems for those downstream, who obtained their drinking water from the same waterways, or caused other environmental damage in coastal areas.[9]

The practice of dumping raw sewage into waterways continued to be common into the twentieth century. In 1930, only 26 percent of cities with sewer systems treated their sewage and the burden of purifying wastewater for reuse fell to downstream water users, who had to implement municipal water filtration and chlorination plants. In the early decades of the twentieth century, scientists tested and experimented with sewage treatment methods such as aeration, filtration, activated sludge, and biological processes to treat wastewater. Gradually, as pressure from public health officials and concern over lawsuits from downstream users increased, cities accepted the responsibility for purifying sewage and built treatment facilities. Construction of such facilities occurred rapidly, and by World War II, nearly all urban areas had sewer systems, and sewage treatment plants were becoming universal. In 1940, over one-half of the population in the US with sewers also had treatment facilities. This number increased to 63 percent by the end of the decade. The most popular treatment methods at this time were oxidation by trickling filter and activated sludge (a process that reduced organic content of sewage). The latter method was developed in the 1910s and soon became the treatment of choice for municipal facilities because it was highly effective.[10]

Scientists and engineers developed new sewage treatment processes and improved existing ones over the next several decades, but the greatest challenges were more practical. Extensive post-war urban growth and water consumption pushed sewage plants to capacity, and civic officials struggled to keep pace. Cities either expanded existing facilities or built new ones. Funding for such frequent and costly projects presented fiscal challenges to local governments, and appeals for money were made to the federal government on the basis that clean water was also a national interest and responsibility. Congress responded by passing the Water Pollution Control Act in 1948 (amended in 1956) that provided for grants of up to 30 percent

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[8] Alameda County Flood Control and Water Conservation District, "District History," available at http://www.acfloodcontrol.org/about-the-district/history-of-the-district/ (accessed April 2017); Alameda County Flood Control and Water Conservation District, "Hayward Landing Watershed Map," 2014; Alameda County Flood Control and Water Conservation District, "Old Alameda Creek Watershed Map," 2014; Andrew Otsuka, Alameda County Public Works Agency, email communication, April 17, April 18, 2017.
[9] Joel A. Tarr and Francis Clay McMichael, "The Evolution of Wastewater Technology and the Development of State Regulation: A Retrospective Analysis," in *Retrospective Technology Assessment—1976*, ed. Joel A. Tarr (San Francisco, CA: San Francisco Press, 1977), 168, 169, 174, 175, 178-181; Martin V. Melosi, *The Sanitary City* (Baltimore, MD: Johns Hopkins Press, 2000), 90-93, 149-152.
[10] Melosi, *The Sanitary City*, 161-174, 260; Tarr and McMichael, 183; James E. Alleman, "The Genesis and Evolution of Activated Sludge Technology," School of Civil Engineering, (West Lafayette, IN: 2005) http://www.elmhurst.org/DocumentView. aspx?DID=301 (accessed January 2014).

of construction costs for sewage treatment facilities. The availability of federal monies had immediate results, spurring a 62 percent increase in the construction of wastewater treatment plants. Congress continued to pass legislation to fund sewage treatment plants in the 1960s and 1970s and, by the 1980s, state funding became a third important funding source in the form of a revolving loan fund. Today, wastewater treatment plants continue to implement new treatment technologies and build new plants to keep pace with urban growth.[11]

Development of the Hayward Water Pollution Control Facility

The oldest segments of the City of Hayward's existing sewer system were reportedly constructed around 1910, with replacements, additions, and modifications performed at various times up to the present day. Initially, Hayward's sewer system contained an underground network of clay, asbestos cement, and reinforced concrete piping that formed main and lateral lines throughout the city. The pipes converged into a single outfall line in an unincorporated area of south Alameda County on the western outskirts of the city. As with other Bay Area municipalities, the city of Hayward's raw sewage was then discharged directly into the San Francisco Bay.[12]

Along with the rest of the country, California's Bay Area citizens began calling for more hygienic sewage disposal practices in the 1930s. By 1938, the City of Hayward had purchased 47 acres in the city's outlying areas for the express purposes of constructing a so-called "Sewer Farm." One of the identified plant locations was the current plant property. However, development of municipal sewage treatment facilities in Hayward would not begin in earnest until after 1950. In 1940, the neighboring Oro Loma Sanitary District immediately north of Hayward proposed the jointly funded construction of a sewage treatment plant with the City of Hayward and the Castro Valley Sanitary District. Oro Loma's proposal also included renting the treatment facilities to Hayward and Castro Valley and charging fees based on their proportional usage. After nearly a decade of consideration and cost analyses, Hayward ultimately declined the offer to collaborate with the neighboring districts in 1949. One of the deciding factors for Hayward's leaders was the very real prospect of the city's southward and westward expansion and the increased treatment needs that came with future annexations. Oro Loma and Castro Valley ultimately partnered and completed construction of the nearly $2 million wastewater treatment plant in San Lorenzo in 1951.[13]

Having decided against joint operation of the Oro Loma treatment plant, the City of Hayward now faced the urgent challenge of constructing its own municipal sewage treatment plant lest it face penalties from the State of California. In 1946, the California State Board of Public Health passed a resolution prohibiting raw sewage discharge into the San Francisco Bay; the resolution also ordered municipalities to begin immediate development of wastewater treatment facilities. By 1952, the only cities not yet in compliance were Millbrae, Sausalito, and Hayward.[14]

In November 1950, the City of Hayward used funds from a federal loan to hire prominent sanitary engineer Harry N. Jenks as a consultant in developing its sewage treatment plant. Harry Jenks graduated from the University of California, Berkeley in 1916 with a degree in sanitary engineering before he was immediately hired by the British mining firm, Burma Mines, Ltd., to design sanitation facilities for its Burmese mining camps. By the end of the decade, Jenks had published multiple articles relating to sanitation and public health in various national engineering journals. When Jenks returned to California, he joined Clyde C. Kennedy's engineering firm, where he planned and designed some of the state's earliest municipal sewage systems. In the 1920s, Jenks developed several new water and wastewater treatment processes, including biofiltration. In 1933, Jenks founded his own company in Palo Alto, and over the course of the next few decades he designed and constructed treatment

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[11] Melosi, *The Sanitary City*, 172, 235, 244, 247-249, 335, 336, 381.
[12] U.S. Environmental Protection Agency, Region IX, *Final Environmental Impact Statement, Volume 1: East Bay Dischargers Authority Water Quality Management Program, Phase 1 Project* (San Francisco, CA: U.S. EPA, July 1976), III-20.
[13] "Sewage Disposal," *Hayward Daily Review*, December 15, 1932, 4; "Council Ratifies Sewer Farm Pact," *Hayward Daily Review*, October 4, 1938, 1; "Combined Sewage Plant for this Section is Urged," *Hayward Daily Review*, August 16, 1940, 1; "Hayward NOT Joining Oro Loma Treatment Plant, Council Decides," *Hayward Daily Review*, April 19, 1949, 1; "Sewage Treatment Plant Operator Tells How New Oro Loma District Installation Serves People," *Hayward Daily Review*, April 18, 1951, 3.
[14] "The Sewage Dumpers," *Hayward Daily Review*, April 7, 1952, 1

and disposal facilities in Palo Alto, Burlingame, San Mateo, Marin County, Napa, San Rafael, Petaluma, and Salinas. Jenks ultimately received 10 patents for his wastewater treatment inventions before he died in 1964.[15]

Between 1950 and 1952, the City of Hayward, Department of Public Works, Engineering Division collaborated with Harry Jenks in designing a wastewater treatment plant (**Plate 3**). Constructed for approximately $2 million on 40 acres purchased from William Johnson, the plant was financed by a $1.7 million revenue bond issue passed in April 1952, later augmented by another $300,000 bond issue passed that December. Contractors Barrett & Hilp and DeLuca Construction Co. completed construction in late 1953. The Hayward Municipal Sewage Treatment Plant originally included a primary biofilter (Structure 1), a primary clarifier (Structure 3), a secondary clarifier (Structure 2), a primary mixing tank (Structure 5), a secondary mixing tank (Structure 4), a vacuator (Structure 6), a primary digester (Structure 7), a control house & pumping plant (Building 8), a hydraulic jump aerator (non-extant), an effluent box (non-extant), sludge drying beds (non-extant), and an effluent pond (Structures 9 and 10, originally designed as one of three ponds).[16]

[15] "City Prepares to Build Sewer Treatment Plant," *Hayward Daily Review*, November 7, 1950, 1; American Journal of Public Health, "The Caste System and the Sanitary Problem" (November 1919): 838-843; Kennedy / Jenks Consultants, *Spotlights* 29, no. 1 (April 2009): 2-3; Harry N. Jenks, "Experimental Studies of Bio-Filtration," *Sewage Works Journal* 8, no. 3 (May 1936): 401-414; Kennedy / Jenks Consultants, "History," https://www.kennedyjenks.com/history/ (accessed April 2017).

[16] "City's New Sewage Plant Will Start Operations Soon," *Hayward Daily Review*, December 8, 1953, 14; "Mt. Eden Residents Plead to City to Control Sewage Plant Odors," *Hayward Daily Review*, August 16, 1954, 11; Harry N. Jenks, Consulting Sanitary Engineer, "City of Hayward, Engineering Division, Municipal Sewage Disposal Project: Yard Layout, Plant Piping," June 2, 1952, drawing no. E-62-5-4, sheet 2 and 4 of 56; HistoricAerials.com, Historic Aerial Images, 1958.

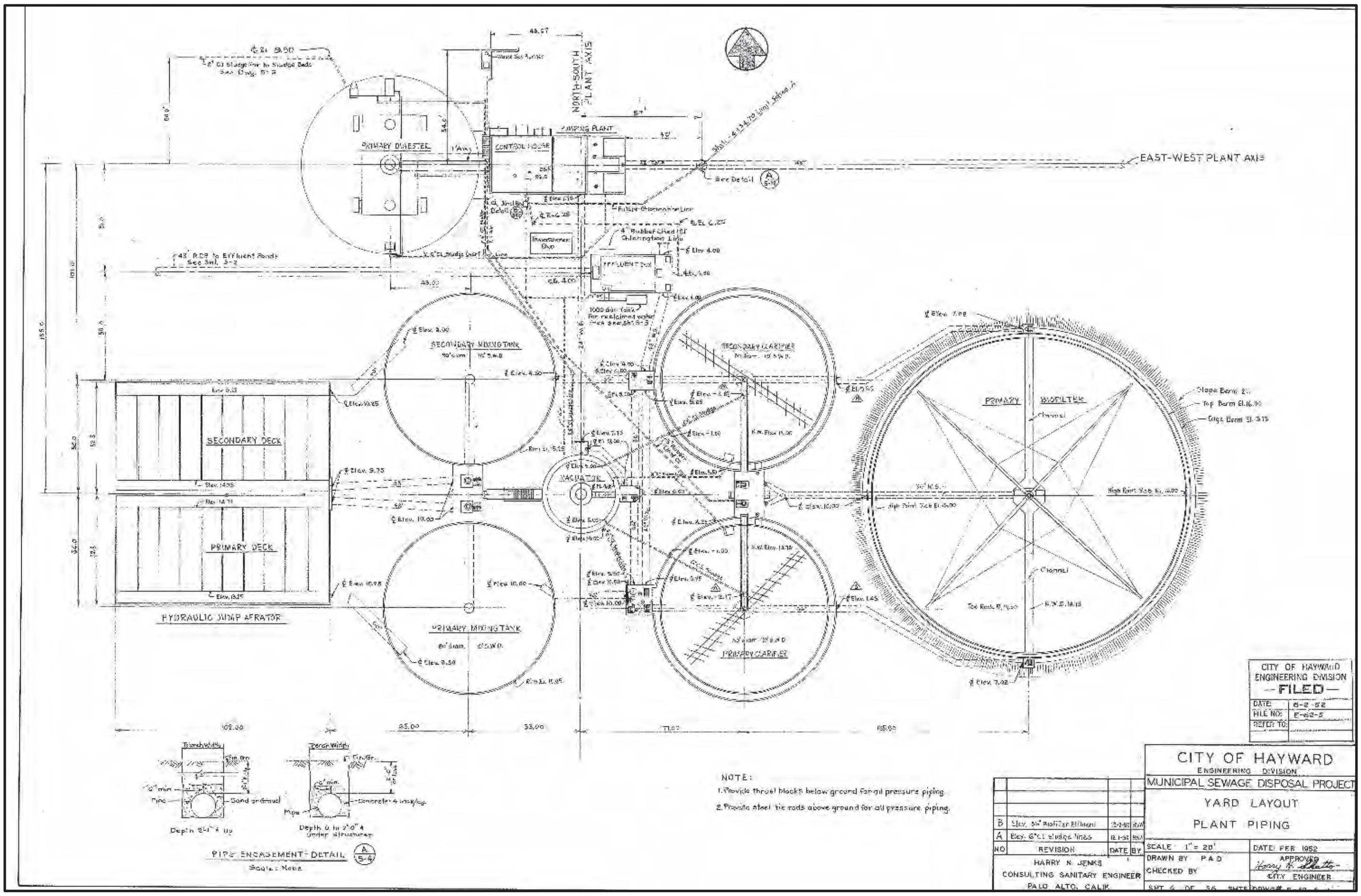

Plate 3: Original 1952 site plans for the Hayward Municipal Sewage Treatment Plant showing from right to left the biofilter, clarifiers, mixing tanks, aerators, and digesters.[17]

The plant was built to treat a daily average of five million gallons per day (MGD) through a combination of mechanical and biological processes referred to as a "complete secondary treatment process." As originally constructed, influent (raw sewage) entered the plant through the control house & pumping plant, where the heaviest solids were initially extracted. The control house also contained remote controls over all the plant's mechanical functions. Next, the biofilter processed the influent by pushing it through sand, gravel, and rocks, a process that further separated solids from liquids. The influent was then processed through two consecutive mixing tanks, which served to agitate the mixture and separate solid particles from liquid, a process that produced mixed liquor suspended solids (MLSS). After this agitation, the MLSS was then treated by two consecutive clarifiers, which functioned to further isolate solid particles from liquid by allowing sludge particles to settle into a bottom sump, floating scum to be collected with a surface rake, and effluent (treated wastewater) to be filtered out through weirs to the effluent box. In the vacuator, air was extracted from the sludge via vacuum pump, and in the hydraulic jump aerator, oxygen was reintroduced in order to increase sludge-particle digestion among aerobic digesters (oxygen-reliant microorganisms). Accelerated digestion occurred at the primary digester, in which anaerobic digesters (non-oxygen-reliant microorganisms) fed on sludge particles in an oxygen-free environment, producing methane biogas that the plant then converted to energy to run the facility. The activated sludge was either returned to the mixing tank to aid in the aerobic digestive process or removed to the sludge drying beds, where any remaining liquid either trickled out or evaporated under disinfecting solar rays. The effluent was removed to the effluent pond, where it was ultimately pumped into the San Francisco Bay through

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[17] Harry N. Jenks, Consulting Sanitary Engineer, "City of Hayward, Engineering Division, Municipal Sewage Disposal Project: Yard Layout, Plant Piping," June 2, 1952, drawing no. E-62-5-4, sheet 2 and 4 of 56.

the Hayward Outfall Channel, which was constructed around the same time as the plant and doubled as a flood control channel for Alameda County Flood Control and Water Conservation District Zone 4.[18]

As the population grew and the city boundaries expanded, the City of Hayward began preparing for the plant's next major development project. As early as 1954, the city council was already discussing the construction of a second sewage treatment plant and had even surveyed a 35-acre site by 1955. This second treatment plant was never built. Instead, the City opted to enhance the processing capabilities of the existing plant by adding additional treatment structures. In 1958, Hayward earmarked $835,000 for plant expansion in that year's public works bond issue. Three years later, the City of Hayward approved expansion plans submitted by Jenks, who was hired on again as a consultant. Among the additions were an additional digester (Structure 12), an additional vacuator (Structure 13), a sludge-conditioning tank (Structure 14), a large final clarifier (non-extant), and a biorainator (non-extant). The addition of a sludge-conditioning tank allowed for sludge to be de-watered faster using floccule reagents and chemicals. In addition to structures related to wastewater treatment, Jenks' plans also called for the construction of a storage and maintenance building (Building 16) as well as a concrete equipment slab (non-extant, later replaced by Building 19 after 1970). The additions were constructed by Berkeley-based contracting firm C. Norman Peterson, Inc. at a cost of $882,200, well over the amount allotted three years earlier. These additions were all in place by 1966 (**Plate 4**).[19]

Plate 4: Hayward Wastewater Treatment Plant ca. 1962 – 1970.[20]

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[18] "City's New Sewage Plant Will Start Operations Soon;" USGS, *San Leandro Quadrangle*, 1: 24,000, 7.5-minute (Washington, D.C.: USGS, 1959); "Joint Channel Use Approved," *Hayward Daily Review*, June 13, 1956, 13.

[19] "Lumber Cutting Yard Catches County Snag," *Hayward Daily Review*, October 22, 1954, 1; "Growth of a City," *Hayward Daily Review*, February 25, 1955; City of Hayward, Department of Public Works, Engineering Division, "Plans for the Construction of North Sewage Treatment Plant Expansion: Outside Sewage and Sludge Piping Layout," October 7, 1958, drawing no. E-322, sheet 12C of 100; "Sewage Plant Bids Exceed Estimates," *Hayward Daily Review*, July 13, 1961, 1; HistoricAerials.com, Historic Aerial Images, 1966.

[20] East Bay Dischargers Authority, "Water Quality Management Program, Environmental Impact Statement: Figure III-9: City of Hayward Treatment Plant," July 1976.

In the midst of construction, the Bay Area Regional Water Pollution Control Board issued new sewage treatment regulations to the City of Hayward. Although the plant's 1962 expansion would have met the new discharge requirements for nine months out of the year, the remaining three months constituted the high-volume canning season. Every summer, the Hayward sewage treatment plant struggled to keep pace with the sharp increase of sewage produced by the Hunt's Foods cannery, an annual ordeal that yielded backlogs of untreated sewage and growing complaints from Russell City and Mt. Eden residents concerning the nauseating odors. Moreover, during the busy summer months the plant typically cut corners by discharging inadequately treated wastewater into the San Francisco Bay, prompting the regional board to issue the compliance directive in July 1962. In response to the new requirements, the City of Hayward again hired Jenks to find the most cost-effective and speedy method of increasing the plant's sewage treatment capabilities. In September, Jenks submitted a request to construct two experimental, quarter-acre oxidation ponds in order for the city engineer to observe and compare the relative costs and effectiveness of natural versus mechanical oxidation processes. The experiment yielded positive results, and the City set about purchasing more land to build larger, permanent ponds. After three years of negotiations, the City acquired 235 acres of former salting ponds northwest adjacent to the plant from the prominent Marsicanos family for $603,304. The construction of four, roughly 30-acre oxidation ponds (not recorded on this form) was completed the following year by the Rio Vista-based Dutra Dredging Co. and the Fred J. Early Co. of San Francisco.[21]

By 1969, the plant was processing on average 11 MGD, with 16 MGD during the canning season. This level of production severely taxed the system, which had been upgraded only to handle brief peak periods of 15 MGD. The following year, the City received plans for phase I of a $15 million plant expansion drafted by John Jenks' firm, Jenks & Adamson, to meet the city's needs over the next 20 years. The plans included designs for a new operations building (Building 17), an equipment housing structure (Building 19), a plant air station (Building 20), and the conversion of the primary mixing tank (Structure 5) to a flotator-thickener. The plans additionally included designs for extensive chlorination facilities adjacent to the oxidation ponds (not recorded on this form). These chemical facilities were urgently needed at the plant, as that June, the Bay Regional Water Quality Control Board, reacting to aerial slide photographs of brownish effluent pouring into the bay from the Hayward Outfall Channel, threatened the city with a cease-and-desist order under the provisions of the Porter-Cologne Water Quality Act. Under the new law, the state could impose a $6,000-per-day fine and restrict all additional sewer connections against polluters, an imposition that would effectively grind new development to a halt.[22]

In addition to ordering chlorination-treatment procedures, the regional board also encouraged the City of Hayward to consolidate infrastructure with other regional dischargers, including San Leandro, the East Bay Municipal Utilities District (EBMUD), and the Oro Loma, Castro Valley, and Union City sanitary districts. This recommendation by the regional board reflected the larger objectives of the Bay Area Plan, which sought to rationalize the fragmented discharging practices of city and district treatment agencies and implement a more holistic approach to managing Bay Area wastewater. The plan's water quality standards were prerequisites that Bay Area dischargers had to meet (or plan to meet) before receiving state and federal funding for facility expansions.[23]

The south Alameda County municipalities commissioned sanitary engineering firms Jenks & Adamson and Kennedy Engineers to draft a report outlining the most efficient method of implementing the sub-regional plan in 1970. Within two years, the firms had designed the inter-municipal "super sewer" at a projected construction cost of $82.42 million, which

[21] "Halt Ordered on Water Pollution," *Hayward Daily Review*, July 19, 1962, 1; "Mt. Eden Residents Plead to City to Control Sewage Plant Odors;" "Something Smells in Washington Township," *Hayward Daily Review*, September 10, 1957, 14; "Big Smell in Area Traced to Sources," *Hayward Daily Review*, September 18, 1958, 13; "Hayward Okays Two Ponds," *Hayward Daily Review*, September 5, 1962, 13; "City Pleased with Sewage Pond Results," *Hayward Daily Review*, November 29, 1962, 11; "Big Sewage Plant for Hayward," *Hayward Daily Review*, October 12, 1965, 13; "Sewage System Contracts OKd," *Hayward Daily Review*, October 21, 1965, 14; HistoricAerials.com, Historic Aerial Images, 1966.

[22] "Federal Grant urged for Sewage Project," Hayward Daily Review, March 24, 1969; Jenks & Adamson, Consulting Sanitary Engineers, "City of Hayward, Department of Public Works, Engineering Division, Wastewater Treatment and Disposal Facilities – Stage I: Site Plan," June 1970, drawing no. E-606, sheets 1 and 2 of 62; "Sewage Requirement Draws Protests," *Hayward Daily Review*, August 17, 1969, 4; "Hayward New Water Target," *Fremont Argus*, June 26, 1970, 1.

[23] "South County Sewage Consolidation Urged," *Hayward Daily Review*, July 24, 1970, 11; "$850 Million Bay Cleanup Plan Offered," *Hayward Daily Review*, April 13, 1971,

would be shared by the Alameda County sub-regional dischargers, collectively called the East Bay Dischargers Authority (EBDA). The plan called for a 25-mile pipeline extending north from the city of Newark to the deeper bay waters west of the Oakland Airport; it was intended to eliminate all discharges into the shallower waters of the south bay. With its members sharing costs and receiving up to 80 percent in outside state and federal assistance, the EBDA began construction in 1974. Jenks & Adamson and Kennedy Engineers, who eventually merged in 1980, received $7.2 million to design and manage the project and supervise construction, in addition to the $18,000 received for earlier studies.[24]

At the same time that the EBDA "super sewer" plan was developing, the City of Hayward also planned the expansion of its own local sewage treatment facility, called the Hayward Wastewater Treatment Plant by 1975. Having received formal approval by the EBDA and the State Water Resources Control Board, the City of Hayward began implementing the $2.2 million Phase II expansion, which included the construction of an additional digester (Structure 23), a mixing and heating building (Building 28), a waste gas burner (Structure 24), additional oxidation ponds (not recorded on this form), a centrifuge building extension (non-extant, added to Building 27), and a standby support power system (Building 25).[25]

Since the mid-1970s, the plant has undergone several subsequent expansions. Somewhat minor additions to the plant include the construction of additional storage facilities (ca. 1980 and 2005) and the renovation and expansion of the administration building (ca. 1994). In the early 1980s, the plant was expanded to include a fluid bed reactor (Structure 29), and an aeration blower building (Building 31). In the mid-to-late 1990s, the Headworks (Building 34) and Boiler Building (Building 35) were also constructed. In 2008, the plant completed the massive $58 million Phase I of the Water Pollution Control Facility Improvement Project. This expansion included a second trickling filter (Structure 40), two new final clarifiers (Structures 47 and 48), solids contact basins (Structure 32 replaced the ca. 1962 final clarifier), solids thickening facilities (Building 44), and a 12kV electrical system (Buildings 39, 42, and 46). In 2013, the FOG (fat, oil, and grease) receiving station (Structure 18) was constructed, and in 2016, the water reclamation station (Structure 15) was built, the cogeneration building (Building 38) was constructed, and Structure 5 was converted to the southwest primary clarifier. Building 33, the engineering office, is a temporary building erected in 2016 to oversee planning and construction.[26]

Evaluation

The City of Hayward WPCF does not have important associations with historically significant events, patterns, or trends of development (NRHP Criterion A / CRHR Criterion 1). The plant is associated with the development of local San Francisco Bay Area wastewater treatment plants during the post-World War II era. While the WPCF is also associated with the growth and functioning of the City of Hayward, wastewater treatment plants generally fall under a class of public utility infrastructure such as sewers or electrical systems which are ubiquitous and essential for any city to function, but must be evaluated for historically significance under a wider context that goes beyond the city. To properly assesses their historical importance wastewater treatment plants must be considered relative to similar plants in other cities. With this in mind, construction of the WPCF in 1953 occurred during an era when municipalities throughout the Bay Area were building new wastewater treatment plants in response to government regulations and increasing public objection to dumping raw sewage into waterways. By the time the Hayward plant was built, it was one of the last cities in the Bay Area to come into accordance with the new rules. The

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[24] "South County Sewage Consolidation Urged," *Hayward Daily Review*, July 24, 1970, 11; "Water Board Gives Blessing to Regional Waste Plan," *Hayward Daily Review*, August 23, 1972, 14; "$68 Million to Fight Water Pollution Will Be Asked," *Hayward Daily Review*, February 28, 1974, 12; " 'Super Sewer' Project Backed," *Hayward Daily Review*, March 29, 1974, 16; Kennedy/Jenks Consultants, "History."

[25] "Dischargers Board Approves Contract," *Hayward Daily Review*, February 25, 1976, 12; Jenks & Adamson, Consulting Sanitary & Civil Engineers, "East Bay Dischargers Authority, Alameda County, California, Plans for the Construction of Hayward Wastewater Treatment Facilities Improvements Project 3951: Site Plan & Layout," April 1975, drawing no. E-1702, sheets 2 and 3.

[26] Wahamaki & Corey, "City of Hayward, Alameda County, California, Plans for the Construction of Wastewater Treatment Plant Storage Building," January 1980, drawing no. E-871, sheets 1-9; Garco Building Systems, "Hayward, Quality Erectors & Construction," August 2005, drawing no. PLAN VIEW, sheets 1-13; Dennis I. Okamura, "City of Hayward, Alameda County, California, Plans for the Construction of Water Pollution Control Facility Administration Building Renovation and Expansion," November 1994, drawing no. 1301-A, sheets 1-42; HistoricAerials.com, Historic Aerial Images, 1980, 1987, 1993, 2000; City of Hayward, "City of Hayward Wastewater Collection and Treatment Service," PowerPoint presentation to Local Agency Formation Commission, July 10, 2014.

WPCF, therefore, followed existing trends and patterns in this regard and was not a leading example or otherwise historically important wastewater treatment plant, and does not meet Criterion A/Criterion1.

This property is not significant for an association with the lives of persons important to history (NRHP Criterion B/CRHR Criterion 2). Research did not reveal that any individual associated with this property has made demonstrably important contributions to history at the local, state, or national level.

Under NRHP Criterion C / CRHR Criterion 3, this property is not significant as an important example of a type, period, or method of construction, nor is it the work of a master or possess high artistic values. The WPCF does not appear to be distinctive for its architecture or its engineering and design. The WPCF has employed trickling, aeration, and activated sludge treatment since the facility was constructed in 1953. This was, and continues to be, a widely used wastewater treatment method and technology which is manifested at the WPCF by the plant design, its structures, and buildings. As a plant that employed common methods and followed the existing standards from the time of its original construction and early development, the engineering and design of WPCF is not innovative or groundbreaking in this regard. In addition to the structures and utilitarian buildings at the plant, one original building, Building 8, exhibits characteristics of the International Style. And a small number of later buildings constructed in the 1970s—Buildings 17 and 19—also exhibit characteristics of this style in varying degrees, presumably to emulate Building 8. In addition, three buildings not from the historic period—Buildings 25, 34, and 35—are also in this style. The International Style was based on functionality and expression of the building structure rather than superfluous decoration. It is characterized by concrete construction, smooth walls, ribbon windows, spandrel panels, flat roofs, and columns. While these characteristics are present in varying degrees in these buildings, they are all very modest expressions of the International Style and not architecturally distinctive.[27]

The WPCF also does not appear to be the work of a master. The City of Hayward hired sanitary engineer Harry N. Jenks to help design the original water treatment plant and Jenks continued to assist with later upgrades and construction. Jenks had a noteworthy career as a sanitary engineer, particularly for his innovations in the biofiltration wastewater treatment process in the 1920s. Jenks constructed many wastewater treatment plants during his long career, including several plants in the Bay Area. While Jenks may be considered a master sanitary engineer, construction of the Hayward plant occurred relatively late in his career, long after he had developed the biofiltration process and designed several other plants that used this process in the Bay Area. The Hayward plant does not represent any of his innovations in the field, a particular phase of his career, or aspect of his work. The WPCF, therefore, does not meet Criterion C/Criterion 3 as representative of the work of a master.

Under NRHP Criterion D / CRHR Criterion 4, this property is not a significant or likely source of important information about historic construction materials or technologies that otherwise would not be available through documentary evidence. This property also does not qualify as a historic district. Like other property types, historic districts must meet one of the four NRHP/CRHR Criterion. As discussed above, the WPCF does not meet any of the criterion for historical significance.

In addition to lacking historical significance and not meeting the criteria necessary for eligibility for listing in either the NRHP or CRHR, the numerous alterations, demolitions, and new construction at the WPCF plant throughout the years have resulted in a loss of integrity of design, materials, workmanship, setting, and feeling. These are discussed in the above historic context and itemized in the table is Section B6 above.

[27] Lee McAlester and Virginia McAlester, *Field Guide to American Houses* (New York: Alfred A. Knopf, 1988), 469-470.

Photographs (continued):

Photograph 2. Structure 1 (West Trickling Filter, center), with Building 34 (Headworks, right); camera facing south, April 21, 2017.

Photograph 3. Detail view of Structure 1 south-side pumping equipment; camera facing west, April 21, 2017.

Photograph 4. Detail view of Structure 1 roof / trickling equipment; camera facing northeast, April 21, 2017.

Photograph 5. Structure 2 (North Primary Clarifier, bottom right), Structure 3 (South Primary Clarifier, bottom left), Structure 4 (Northwest Primary Clarifier, center right), Structure 5 (Southwest Primary Clarifier, center left), Structure 6 (South Vacuator, center). The Calpine Energy facility is in the distance, camera facing west, April 21, 2017.

Photograph 6. Structure 6 (South Vacuator, center), with Structure 4 (Northwest Primary Clarifier, left), Structure 5 (Southwest Primary Clarifier, right), and Structure 1 (West Trickling Filter, background); camera facing east, April 21, 2017.

Photograph 7. Structure 7 (Digester No. 3, center), with Structure 4 (Northwest Primary Clarifier, foreground); camera facing northwest, April 21, 2017.

Photograph 8. Building 8 (Site Waste Pump Station & Control House, center right), with Structure 7 (Digester No. 3, center left) and Structure 4 (Northwest Primary Clarifier, foreground); camera facing northwest, April 21, 2017.

Photograph 9. North and east sides of Building 8; camera facing southwest, April 21, 2017.

Photograph 10. Structure 10 (Equalization Pond, center) with the neighboring Calpine Energy facility on the right; camera facing west, April 21, 2017.

Photograph 11. Detail view of concrete platform at northeast corner of Structure 10; camera facing north, April 21, 2017.

Photograph 12. Structure 11 (Bypass Control Box, center), with Structure 6 (South Vacuator, center background), Structure 2 (North Primary Clarifier), and Structure 4 (Northwest Primary Clarifier); camera facing south, April 21, 2017.

Photograph 13. Detail interior view of Structure 11; camera facing west, April 21, 2017.

Photograph 14. Structure 12 (Digester No. 2, center), with Building 19 (Equipment Housing Structure, center right); camera facing northwest, April 21, 2017.

Photograph 15. Structure 13 (North Vacuator); camera facing northwest, April 21, 2017.

Photograph 16. Structure 14 (Sludge Conditioning Tank, center), with Structure 15 (Water Reclamation Station, center background), Building 20 (Air Compressor Building, center right), Structure 4 (Northwest Primary Clarifier, foreground), and Building 27 (Maintenance and Electrical Shop, background right); camera facing northwest, April 21, 2017.

Photograph 17. Building 16 (Storage and Maintenance Building); camera facing southeast, April 21, 2017.

Photograph 18. South and east sides of Building 16, with Structure 21 (Gasoline Pump, south side of Building 16); camera facing northwest, April 21, 2017.

Photograph 19. South and west sides of Building 17 (Operations Building); camera facing northwest, April 21, 2017.

Photograph 20. Detail view of Building 17 façade; camera facing northeast, April 21, 2017.

Photograph 21. North and east sides of Building 17; camera facing southwest, April 21, 2017.

Photograph 22. Structure 18 (FOG Receiving Station, center), with Structure 12 (Digester No. 2, right) and Structure 13 (North Vacuator, left); camera facing south, April 21, 2017.

Photograph 23. Building 19 (Equipment Housing Structure); camera facing north, April 21, 2017.

Photograph 24. Building 20 (Air Compressor Building); camera facing southeast, April 21, 2017.

Photograph 25. Building 22 (Chemical Feed Building); camera facing southeast, April 21, 2017.

Photograph 26. Structure 23 (Digester No. 3, left) with Building 28 (Mixing and Heating Building, right); camera facing northwest, April 21, 2017.

Photograph 27. Structure 24 (Waste Gas Burner); camera facing northeast, April 21, 2017.

Photograph 28. Building 25 (Old Power Generation Station, center) with Structure 1 (West Trickling Filter, left) and Building 35 (Boiler Building, right); camera facing southwest, April 21, 2017.

Photograph 29. South side of Buildings 25 and 35; camera facing north, April 21, 2017.

Photograph 30. Structure 26 (Gas Meter Installation) with Structure 12 (Digester No. 2, background); camera facing southeast, April 21, 2017.

Photograph 31. Building 27 (Maintenance and Electrical Shop); camera facing northwest, April 21, 2017.

Photograph 32. Structure 29 (Fluid Bed Reactor); camera facing southwest, April 21, 2017.

Photograph 33. Building 30 (Storage Building) with Building 16 (Storage and Maintenance Building, left); camera facing northwest, April 21, 2017.

Photograph 34. Building 31 (Aeration Blower Building); camera facing northwest, April 21, 2017.

Photograph 35. Structure 32 (Solids Contact Basins) with the Calpine Energy facility in the background; camera facing northwest, April 21, 2017.

Photograph 36. Detail view of Structure 32; camera facing northeast, April 21, 2017.

Photograph 37. Building 33 (Engineering Office); camera facing northeast, April 21, 2017.

Photograph 38. Building 34 (Headworks) with Structure 1 (West Trickling Filter, background right); camera facing southeast, April 21, 2017.

Photograph 39. East side of Building 34; camera facing west, April 21, 2017.

Photograph 40. Structure 36 (Gas Conditioning Area) with Structure 23 (Digester No. 1, right) and Building 37 (Warehouse, left); camera facing north, April 21, 2017.

Photograph 41. Building 37 (Warehouse, center) with Structure 36 (Gas Conditioning Area, foreground right) and Building 44 (Solids Thickening Building, background left); camera facing northwest, April 21, 2017.

Photograph 42. Building 38 (Cogeneration Building) with Structure 24 (Waste Gas Burner, right); camera facing northwest, April 21, 2017.

Photograph 43. Building 39 (12kV Import Export Station); camera facing northeast, April 21, 2017.

***Resource Name or #** (Assigned by recorder): Hayward Water Pollution Control Facility

***Recorded by**: S.J. Melvin & S. Skow ***Date**: April 21, 2017 ☒ Continuation ☐ Update

Photograph 44. Structure 40 (East Trickling Filter, background) with Structure 41 (Trickling Filter Pumping Station, foreground); camera facing northeast, April 21, 2017.

Photograph 45. Structure 42 (East Substation); camera facing northeast, April 21, 2017.

Photograph 46. Structure 43 (East Biofilter); camera facing north; April 21, 2017.

Photograph 47. Building 44 (Solids Thickening Building); camera facing northeast, April 21, 2017.

Photograph 48. Structure 45 (West Bio Filter); camera facing northwest, April 21, 2017.

Photograph 49. Building 46 (West Substation); camera facing northwest, April 21, 2017.

Photograph 50. Structure 47 (Final Clarifier 1, foreground) with Building 44 (Solids Thickening Building, background center), Building 37 (Warehouse, background center right), and Building 27 (Maintenance and Electrical Shop, background far right); camera facing northeast, April 21, 2017.

Photograph 51. Structure 49 (Soil Bed Odor Filter); camera facing north, April 21, 2017.

Photograph 52. Structure 50 (No. 3 Water System, center) with Structure 14 (Sludge Conditioning Tank, right) and Structure 1 (West Trickling Filter, background left); camera facing southeast, April 21, 2017.

Photograph 53. Structure 51 (Stormwater Pump Station); camera facing west, April 21, 2017.

Photograph 54. Building 52 (Final Clarifier Electrical Building); camera facing southwest, April 21, 2017.

***Resource Name or #** (Assigned by recorder): Hayward Water Pollution Control Facility

***Recorded by:** S.J. Melvin & S. Skow ***Date:** April 21, 2017 ☒ Continuation ☐ Update

Site Map

***Resource Name or #** (Assigned by recorder): Hayward Water Pollution Control Facility

***Recorded by**: S.J. Melvin & S. Skow ***Date**: April 21, 2017 ☒ Continuation ☐ Update

Sketch Map

State of California -- The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings ______
Review Code ______ Reviewer ______ Date ______

 ***Resource Name or #:** (Assigned by recorder) Building 20
P1. Other Identifier: Air Compressor Building
***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted**
***a. County** Alameda **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad** San Leandro, CA **Date** 2021 **T** _; **R** _; _ ☐ **of** _ ☐ **of Sec** _; ____**B.M.**
c. Address 3700 Enterprise Avenue City Hayward Zip 94545
d. UTM: (Give more than one for large and/or linear resources) Zone 10S , 576700.53 mE/ 4165550.82 mN
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, decimal degrees, etc., as appropriate)
APN 439-0099-002-02

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

Building 20 (Air Compressor Building) is located within the Hayward Water Pollution Control Facility (WPCF). It is a 206-square-foot, one-story, steel-frame building that currently houses two air compressors, a compressed air receiver tank, and an oil/water separator. It features a square footprint, is clad in corrugated steel panels, and is capped by a flat roof covered with metal roofing. One partially glazed and louvered metal door is located on the primary (north) façade; this was originally a pair of doors, and the other has been replaced by a fixed wood panel. One fixed, steel-sash window and one or more louvered metal panels are located on each of the side (east and west) and rear (south) façades. Building 20 was designed in a utilitarian architectural style.

***P3b. Resource Attributes:** (List attributes and codes) HP9. Public Utility Building

P5a. Photograph or Drawing

***P4. Resources Present:** ☒ Building ☐ Structure ☒ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo: Building 20, view facing southwest. Photo by ESA, January 2024.

***P6. Date Constructed/Age and Source:** ☒ Historic ☐ Prehistoric ☐ Both
1972 (City of Hayward, 2024)

***P7. Owner and Address:**
City of Hayward
777 B Street
Hayward, CA 94541-5007

***P8. Recorded by:** (Name, affiliation, and address)
Amy Langford / ESA
180 Grand Avenue, Suite 1050
Oakland, CA 94612

***P9. Date Recorded:**
January 4, 2024

***P10. Survey Type:** Reconnaissance

***P11. Report Citation**: (Cite survey report and other sources, or enter "none.")
ESA. *Cultural Resources Survey Report for the City of Hayward Water Pollution Control Facility Improvements Phase II Project.* Prepared for the City of Hayward. January 2024.

***Attachments:** ☐NONE ☐Location Map ☒Continuation Sheet ☒Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐Other (List): ______

BUILDING, STRUCTURE, AND OBJECT RECORD

***Resource Name or #** (Assigned by recorder) Building 20 ***NRHP Status Code** 6Z

B1. Historic Names: Building 20, Air Compressor Building

B2. Common Names: Building 20, Air Compressor Building

B3. Original Use: Hayward WPCF infrastructure B4. Present Use: From sign affixed to the building: "Provides air to North and South Vacuators [i.e., Structures 13 and 6, respectively], 3W Sand Filters, and Digester #1, #2, and #3 [i.e., Structures 23, 12, and 7, respectively] hot water modulating valves."

***B5. Architectural Style:** Utilitarian

***B6. Construction History:** Previous documentation of the WPCF indicates that Building 20 was constructed in 1972 and no known alterations had been made prior to 2017. Recent alterations observed by ESA staff include the replacement of one partially glazed and louvered metal door on the primary façade with a fixed wood panel.

***B7. Moved?** ☒**No** ☒**Yes** ☐**Unknown** **Date:** N/A **Original Location:** N/A

***B8. Related Features:** Building 20 is part of the larger Hayward WPCF.

B9a. Architect: Jenks & Adamson (sanitary engineer) **b. Builder**: Unknown

***B10. Significance: Theme** N/A **Area** N/A

Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A

Development of the Hayward WPCF

The following history of the development of the Hayward WPCF is an excerpt from the *Historic Resources Inventory and Evaluation Report [for the] City of Hayward Recycled Water Project, Alameda County, California* (Melvin, 2017). Corrected construction dates were provided by the City of Hayward in January 2024 and added in brackets below.

> *In 1946, the California State Board of Public Health passed a resolution prohibiting raw sewage discharge into San Francisco Bay; the resolution also ordered municipalities to begin immediate development of wastewater treatment facilities. By 1952, the only cities not yet in compliance were Millbrae, Sausalito, and Hayward.*
>
> *In November 1950, the City of Hayward used funds from a federal loan to hire prominent sanitary engineer Harry N. Jenks as a consultant in developing its sewage treatment plant.… Constructed for approximately $2 million on 40 acres purchased from William Johnson, the plant was financed by a $1.7 million revenue bond issue passed in April 1952, later augmented by another $300,000 bond issue passed that December. Contractors Barrett & Hilp and DeLuca Construction Co. completed construction in late 1953. The Hayward Municipal Sewage Treatment Plant [as the WPCF was originally known] originally included a primary biofilter (Structure 1), a primary clarifier (Structure 3), a secondary clarifier (Structure 2), a primary mixing tank (Structure 5), a secondary mixing tank (Structure 4), a vacuator (Structure 6), a primary digester (Structure 7), a control house & pumping plant (Building 8), a hydraulic jump aerator (non-extant), an effluent box (non-extant), sludge drying beds (non-extant), … an effluent pond (Structures 9 and 10, originally designed as one of three ponds) [and a bypass control box (Structure 11)]. …*

(Continued on page 3)

B11. Additional Resource Attributes: None

***B12. References:**

Carbert, Kyle (City of Hayward). Email to Johanna Kahn (ESA). January 8, 2024.

Melvin, Steven. *Historic Resources Inventory and Evaluation Report [for the] City of Hayward Recycled Water Project, Alameda County, California*. Prepared by JRP Historical Consulting, LLC, Davis, CA, for the City of Hayward. May 2017.

B13. Remarks: None

***B14. Evaluator:** Johanna Kahn and Amy Langford / ESA

***Date of Evaluation:** January 2024

(This space reserved for official comments.)

Source: Google Earth, 2024.

B10. Significance (continued):

In 1958, Hayward earmarked $835,000 for plant expansion in that year's public works bond issue. Three years later, the City of Hayward approved expansion plans submitted by Jenks, who was hired on again as a consultant. Among the additions were an additional digester (Structure 12), an additional vacuator (Structure 13), a sludge-conditioning tank (Structure 14), a large final clarifier (non-extant), and a biorainator (non-extant). The addition of a sludge conditioning tank allowed for sludge to be de-watered faster using floccule reagents and chemicals. In addition to structures related to wastewater treatment, Jenks' plans also called for the construction of a storage and maintenance building (Building 16) as well as a concrete equipment slab (non-extant, later replaced by Building 19 after 1970). The additions were constructed by Berkeley-based contracting firm C. Norman Peterson, Inc. at a cost of $882,200, well over the amount allotted three years earlier. These additions were all in place by 1966. …

By 1969, the plant was processing on average 11 [million gallons per day, or MGD], with 16 MGD during the canning season. This level of production severely taxed the system, which had been upgraded only to handle brief peak periods of 15 MGD. The following year, the City received plans for phase I of a $15 million plant expansion drafted by John Jenks' firm, Jenks & Adamson, to meet the city's needs over the next 20 years. The plans included designs for a new operations [and administration] building (Building 17), an equipment housing structure (Building 19), [an air compressor building] (Building 20), and the conversion of the primary mixing tank (Structure 5) to a flotator-thickener. The plans additionally included designs for extensive chlorination facilities adjacent to the oxidation ponds…. These chemical facilities were urgently needed at the plant, as that June, the Bay Regional Water Quality Control Board, reacting to aerial slide photographs of brownish effluent pouring into the bay from the Hayward Outfall Channel, threatened the city with a cease-and-desist order under the provisions of the Porter-Cologne Water Quality Act. …

The south Alameda County municipalities commissioned sanitary engineering firms Jenks & Adamson and Kennedy Engineers to draft a report outlining the most efficient method of implementing [a] sub-regional plan in 1970. Within two years, the firms had designed the inter-municipal "super sewer" at a projected construction cost of $82.42 million, which would be shared by the Alameda County sub-regional dischargers, collectively called the East Bay Dischargers Authority (EBDA)…. At the same time that the EBDA "super sewer" plan was developing, the City of Hayward also planned the expansion of its own local sewage treatment facility, called the Hayward Wastewater Treatment Plant by 1975. Having received formal approval by the EBDA and the State Water Resources Control Board, the City of Hayward began implementing the $2.2 million Phase II expansion, which included the construction of an additional digester (Structure 23), a mixing and heating building (Building 28), a waste gas burner [(non-extant)], additional oxidation ponds … [a gasoline pump (Structure 21), and] a centrifuge building extension (non-extant, added to Building 27) …

Since the mid-1970s, the plant has undergone several subsequent expansions. Somewhat minor additions to the plant include the construction of additional storage facilities [(Building 30 ca. 1980 and Building 37 ca. 2005) [, the old power generation station (Building 25) in 1982, and the high-pressure gas storage tank (Structure 26) in 1982 as well as] the renovation and expansion of the [operations and] administration building (ca. [1981 and] 1994). In the early 1980s, the plant was expanded to include a fluid bed reactor (Structure 29)... In the mid-to-late 1990s, the Headworks (Building 34) [was] constructed [, and in 2002, the boiler building (Building 35) was constructed]. In 2008, the plant completed the massive $58 million Phase I of the Water Pollution Control Facility Improvement Project. This expansion included a second trickling filter (Structure 40), two new final clarifiers (Structures 47 and 48), [aeration blower building (Building 31)], solids contact basins (Structure 32 replaced the ca. 1962 final clarifier), solids thickening facilities (Building 44), [the water reclamation station (Structure 15), the trickling filter pumping station (Structure 41), two biofilters (Structures 43 and 45), the soil bed odor filter (Structure 49), the sludge polymer feed system (Structure 50), the stormwater pump station (Structure 51), the final clarifier electrical building (Building 52)], and a 12kV electrical system (Buildings 39, 42, and 46). In 2013, the FOG (fat, oil, and grease) receiving station (Structure 18) was constructed[. In 2014, the cogeneration system waste heat radiator(Structure 24) was added. In 2016,] the [gas conditioning area (Structure 36) and the] cogeneration building (Building 38) [were] constructed, and Structure 5 was converted to the southwest primary clarifier. Building 33, the engineering office, is a temporary building erected in 2016 to oversee planning and construction. [The southwest primary clarifier electrical building (Building 22) was constructed in 2017.] (Melvin, 2017:16-21)

Significance Evaluation

Building 20 is evaluated below for potential historic significance according to National Register of Historic Places (National Register) Criteria A through D and California Register of Historical Resources (California Register) Criteria 1 through 4. The City of Hayward applies California Register criteria to determine eligibility for local designation.

Criterion A/1 – Event. Research does not indicate that Building 20 is associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States. The Hayward WPCF was originally constructed in 1953 to treat sanitary wastewater before it is released into San Francisco Bay. The facility was expanded over subsequent decades, and Building 20 was constructed in 1972 as one of several buildings and structures added during the 1970s. As the original air compressor building, Building 20 supports the overall process of wastewater treatment, and no records were identified to suggest that Building 20 specifically is the site of important events. For these reasons, Building 20 does not appear to be individually eligible for listing under Criterion A/1.

Criterion B/2 – Person. Research does not indicate that Building 20 is associated with the lives of persons important to local, California, or national history. (Design professionals are discussed under Criterion C/3.) No individuals are directly associated with the building, which has apparently functioned as an air compressor building since 1972. For this reason, Building 20 does not appear to be individually eligible for listing under Criterion B/2.

Criterion C/3 – Design/Construction. Building 20 does not embody the distinctive characteristics of a type, period, region, or method of construction. It was built in 1972, nearly two decades after the original Hayward WPCF. Building 20 is a prefabricated, metal-frame shelter for air compressor equipment and does not appear to represent the work of a master or possess high artistic values. For these reasons, Building 20 does not appear to be individually eligible for listing under Criterion C/3.

Criterion D/4 – Information Potential. Criterion D/4 typically applies to archaeological resources rather than architectural resources. When Criterion D/4 does relate to architectural resources, it is relevant when the building/structure itself is the principal source of important construction-related information. Building 20 was constructed using common materials and building techniques and does not appear to have the potential to provide important information related to materials or construction types. Therefore, Building 20 does not appear to be individually eligible for listing under Criterion D/4.

Historic District Considerations

In 2017, an evaluation of the Hayward WPCF concluded that it was not eligible for listing in the National Register or California Register as a historic district under any criteria (Melvin, 2017). ESA updated the evaluation in 2024 and concurred with the previous finding. No apparent patterns emerge to suggest that there is a potential district or districts within the Hayward WPCF that include Building 20. Additionally, City of Hayward records do not indicate that any of the age-eligible architectural resources within the Hayward WPCF would contribute to a potential discontiguous historic district within the Hayward WPCF.

Integrity Analysis

In addition to being eligible for listing under at least one of the four National Register/California Register criteria, a resource must also retain sufficient integrity to convey its historical significance. There are seven aspects to consider when evaluating the integrity of a resource: location, design, setting, materials, workmanship, feeling, and association. As discussed above, Building 20 does not appear to be individually significant under any National Register or California Register criteria, either as a standalone resource or as a contributor to a known or potential historic district. Therefore, a discussion of integrity is not presented.

Summary

Building 20 is not recommended individually eligible for listing in the National Register, California Register, or the City of Hayward's register of designated historical resources under any criteria. It is also not recommended eligible as a contributor to a known or potential historic district eligible for individual listing in the National Register, California Register, or the City of Hayward's register of designated historical resources. As such, the building would not be considered a historic property for the purposes of NHPA Section 106 or a historical resource for the purposes of CEQA.

State of California -- The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings ____________________
Review Code ______ Reviewer __________ Date __________

Page 1 **of** 4 ***Resource Name or #:** (Assigned by recorder) Structure 23

P1. Other Identifier: Digester No. 1

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted**

***a. County** Alameda **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad** San Leandro, CA **Date** 2021 **T** __; **R** __; __ ☐ **of** __ ☐ **of Sec** __; ____**B.M.**

c. Address 3700 Enterprise Avenue City Hayward Zip 94545

d. UTM: (Give more than one for large and/or linear resources) Zone 10S, 576705.54 mE/ 4165645.29 mN

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, decimal degrees, etc., as appropriate)
APN 439-0099-002-02

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

Structure 23 (Digester No. 1) is located within the Hayward Water Pollution Control Facility (WPCF). It is a cylindrical concrete structure measuring approximately 80 feet in diameter. It is capped by a domed roof with a circular metal service ingress and surrounded by metal railing along the top ledge. Metal bracing along the roof and structure perimeter connects ingoing and outgoing metal piping to an adjacent structure (Digester No. 2). The east side of Structure 23 is physically attached to Building 28 (Mixing and Heating Building).

***P3b. Resource Attributes:** (List attributes and codes) HP9. Public Utility Building

P5a. Photograph or Drawing

***P4. Resources Present:**
☐ Building ☒ Structure ☐ Object
☐ Site ☐ District ☐ Element of District
☐ Other (Isolates, etc.)

P5b. Description of Photo: Structure 23, view facing northeast. Photo by ESA, January 2024.

***P6. Date Constructed/Age and Source:** ☒ Historic ☐ Prehistoric ☐ Both
1976 (City of Hayward, 2024)

***P7. Owner and Address:**
City of Hayward
777 B Street
Hayward, CA 94541-5007

***P8. Recorded by:** (Name, affiliation, and address)
Amy Langford / ESA
180 Grand Avenue, Suite 1050
Oakland, CA 94612

***P9. Date Recorded:**
January 4, 2024

***P10. Survey Type:** Reconnaissance

***P11. Report Citation**: (Cite survey report and other sources, or enter "none.")
ESA. *Cultural Resources Survey Report for the City of Hayward Water Pollution Control Facility Improvements Phase II Project.* Prepared for the City of Hayward. January 2024.

***Attachments:** ☐NONE ☐Location Map ☒Continuation Sheet ☒Building, Structure, and Object Record
☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record
☐Artifact Record ☐Photograph Record ☐Other (List): ____________________

BUILDING, STRUCTURE, AND OBJECT RECORD

***Resource Name or #** (Assigned by recorder) Structure 23 ***NRHP Status Code** 6Z

B1. Historic Names: Structure 23, Digester No. 1
B2. Common Names: Structure 23, Digester No. 1
B3. Original Use: digester tank B4. Present Use: digester tank.
***B5. Architectural Style:** Utilitarian
***B6. Construction History:** Previous documentation of the WPCF indicates that Building 28 was constructed ca. 1975. Correspondence with Hayward WPCF staff indicates that the building underwent unspecified modifications ca. 2017. No recent exterior alterations were observed by ESA staff.

***B7. Moved?** ☒**No** ☐**Yes** ☐**Unknown** **Date:** N/A **Original Location:** N/A
***B8. Related Features:** Digester No. 1 (Structure 23) is attached to an auxiliary mixing and heating building (Building 28). Metal bracing connects ingoing and outgoing metal piping to an adjacent structure (Digester No. 2).

B9a. Architect: Jenks & Adamson (sanitary engineer) **b. Builder**: Unknown
***B10. Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A

Development of the Hayward WPCF

The following history of the development of the Hayward WPCF is an excerpt from the *Historic Resources Inventory and Evaluation Report [for the] City of Hayward Recycled Water Project, Alameda County, California* (Melvin, 2017). Corrected construction dates were provided by the City of Hayward in January 2024 and added in brackets below.

> *In 1946, the California State Board of Public Health passed a resolution prohibiting raw sewage discharge into San Francisco Bay; the resolution also ordered municipalities to begin immediate development of wastewater treatment facilities. By 1952, the only cities not yet in compliance were Millbrae, Sausalito, and Hayward.*
>
> *In November 1950, the City of Hayward used funds from a federal loan to hire prominent sanitary engineer Harry N. Jenks as a consultant in developing its sewage treatment plant.… Constructed for approximately $2 million on 40 acres purchased from William Johnson, the plant was financed by a $1.7 million revenue bond issue passed in April 1952, later augmented by another $300,000 bond issue passed that December. Contractors Barrett & Hilp and DeLuca Construction Co. completed construction in late 1953. The Hayward Municipal Sewage Treatment Plant [as the WPCF was originally known] originally included a primary biofilter (Structure 1), a primary clarifier (Structure 3), a secondary clarifier (Structure 2), a primary mixing tank (Structure 5), a secondary mixing tank (Structure 4), a vacuator (Structure 6), a primary digester (Structure 7), a control house & pumping plant (Building 8), a hydraulic jump aerator (non-extant), an effluent box (non-extant), sludge drying beds (non-extant), … an effluent pond (Structures 9 and 10, originally designed as one of three ponds) [and a bypass control box (Structure 11)]. …*

(Continued on page 3)

B11. Additional Resource Attributes: None
***B12. References:**

Kyle Carbert (City of Hayward). Email to Johanna Kahn (ESA). January 8, 2024.
Melvin, Steven. *Historic Resources Inventory and Evaluation Report [for the] City of Hayward Recycled Water Project, Alameda County, California*. Prepared by JRP Historical Consulting, LLC, Davis, CA, for the City of Hayward. May 2017.

B13. Remarks: None

***B14. Evaluator:** Johanna Kahn and Amy Langford / ESA
***Date of Evaluation:** January 2024

(This space reserved for official comments.)

Source: Google Earth, 2024.

B10. Significance (continued):

In 1958, Hayward earmarked $835,000 for plant expansion in that year's public works bond issue. Three years later, the City of Hayward approved expansion plans submitted by Jenks, who was hired on again as a consultant. Among the additions were an additional digester (Structure 12), an additional vacuator (Structure 13), a sludge-conditioning tank (Structure 14), a large final clarifier (non-extant), and a biorainator (non-extant). The addition of a sludge conditioning tank allowed for sludge to be de-watered faster using floccule reagents and chemicals. In addition to structures related to wastewater treatment, Jenks' plans also called for the construction of a storage and maintenance building (Building 16) as well as a concrete equipment slab (non-extant, later replaced by Building 19 after 1970). The additions were constructed by Berkeley-based contracting firm C. Norman Peterson, Inc. at a cost of $882,200, well over the amount allotted three years earlier. These additions were all in place by 1966. …

By 1969, the plant was processing on average 11 [million gallons per day, or MGD], with 16 MGD during the canning season. This level of production severely taxed the system, which had been upgraded only to handle brief peak periods of 15 MGD. The following year, the City received plans for phase I of a $15 million plant expansion drafted by John Jenks' firm, Jenks & Adamson, to meet the city's needs over the next 20 years. The plans included designs for a new operations [and administration] building (Building 17), an equipment housing structure (Building 19), [an air compressor building] (Building 20), and the conversion of the primary mixing tank (Structure 5) to a flotator-thickener. The plans additionally included designs for extensive chlorination facilities adjacent to the oxidation ponds…. These chemical facilities were urgently needed at the plant, as that June, the Bay Regional Water Quality Control Board, reacting to aerial slide photographs of brownish effluent pouring into the bay from the Hayward Outfall Channel, threatened the city with a cease-and-desist order under the provisions of the Porter-Cologne Water Quality Act. …

The south Alameda County municipalities commissioned sanitary engineering firms Jenks & Adamson and Kennedy Engineers to draft a report outlining the most efficient method of implementing [a] sub-regional plan in 1970. Within two years, the firms had designed the inter-municipal "super sewer" at a projected construction cost of $82.42 million, which would be shared by the Alameda County sub-regional dischargers, collectively called the East Bay Dischargers Authority (EBDA)…. At the same time that the EBDA "super sewer" plan was developing, the City of Hayward also planned the expansion of its own local sewage treatment facility, called the Hayward Wastewater Treatment Plant by 1975. Having received formal approval by the EBDA and the State Water Resources Control Board, the City of Hayward began implementing the $2.2 million Phase II expansion, which included the construction of an additional digester (Structure 23), a mixing and heating building (Building 28), a waste gas burner [(non-extant)], additional oxidation ponds … [a gasoline pump (Structure 21), and] a centrifuge building extension (non-extant, added to Building 27) …

Since the mid-1970s, the plant has undergone several subsequent expansions. Somewhat minor additions to the plant include the construction of additional storage facilities [(Building 30 ca. 1980 and Building 37 ca. 2005) [, the old power generation station (Building 25) in 1982, and the high-pressure gas storage tank (Structure 26) in 1982 as well as] the renovation and expansion of the [operations and] administration building (ca. [1981 and] 1994). In the early 1980s, the plant was expanded to include a fluid bed reactor (Structure 29)... In the mid-to-late 1990s, the Headworks (Building 34) [was] constructed [, and in 2002, the boiler building (Building 35) was constructed]. In 2008, the plant completed the massive $58 million Phase I of the Water Pollution Control Facility Improvement Project. This expansion included a second trickling filter (Structure 40), two new final clarifiers (Structures 47 and 48), [aeration blower building (Building 31)], solids contact basins (Structure 32 replaced the ca. 1962 final clarifier), solids thickening facilities (Building 44), [the water reclamation station (Structure 15), the trickling filter pumping station (Structure 41), two biofilters (Structures 43 and 45), the soil bed odor filter (Structure 49), the sludge polymer feed system (Structure 50), the stormwater pump station (Structure 51), the final clarifier electrical building (Building 52)], and a 12kV electrical system (Buildings 39, 42, and 46). In 2013, the FOG (fat, oil, and grease) receiving station (Structure 18) was constructed[. In 2014, the cogeneration system waste heat radiator(Structure 24) was added. In 2016,] the [gas conditioning area (Structure 36) and the] cogeneration building (Building 38) [were] constructed, and Structure 5 was converted to the southwest primary clarifier. Building 33, the engineering office, is a temporary building erected in 2016 to oversee planning and construction. [The southwest primary clarifier electrical building (Building 22) was constructed in 2017.] (Melvin, 2017:16-21)

Significance Evaluation

Structure 23 is evaluated below for potential historic significance according to National Register of Historic Places (National Register) Criteria A through D and California Register of Historical Resources (California Register) Criteria 1 through 4. The City of Hayward applies California Register criteria to determine eligibility for local designation.

Criterion A/1 – Event. Research does not indicate that Structure 23 is associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States. The Hayward WPCF was originally constructed in 1953 to treat sanitary wastewater before it is released into San Francisco Bay. The facility was expanded over subsequent decades, and Structure 23 was constructed in 1976 as one of several buildings and structures added during the 1970s. As a digester, Structure 23 supports the overall process of wastewater treatment, and no records were identified to suggest that Structure 23 specifically is the site of important events. For these reasons, Structure 23 does not appear to be individually eligible for listing under Criterion A/1.

Criterion B/2 – Person. Research does not indicate that Structure 23 is associated with the lives of persons important to local, California, or national history. (Design professionals are discussed under Criterion C.) No individuals are directly associated with the structure, which has apparently functioned as a digester since 1976. For this reason, Structure 23 does not appear to be individually eligible for listing under Criterion B/2.

Criterion C/3 – Design/Construction. Structure 23 does not embody the distinctive characteristics of a type, period, region, or method of construction. It was built ca. 1975, nearly two decades after the original Hayward WPCF. Structure 23 is a utilitarian, concrete structure and does not appear to represent the work of a master or possess high artistic values. For these reasons, Structure 23 does not appear to be individually eligible for listing under Criterion C/3.

Criterion D/4 – Information Potential. Criterion D/4 typically applies to archaeological resources rather than architectural resources. When Criterion D/4 does relate to architectural resources, it is relevant when the building/structure itself is the principal source of important construction-related information. Structure 23 was constructed using common materials and building techniques and does not appear to have the potential to provide important information related to materials or construction types. Therefore, Structure 23 does not appear to be individually eligible for listing under Criterion D/4.

Historic District Considerations

In 2017, an evaluation of the Hayward WPCF concluded that it was not eligible for listing in the National Register or California Register as a historic district under any criteria (Melvin, 2017). ESA updated the evaluation in 2024 and concurred with the previous finding. No apparent patterns emerge to suggest that there is a potential district or districts within the Hayward WPCF that include Structure 23. Additionally, City of Hayward records do not indicate that any of the age-eligible architectural resources within the Hayward WPCF would contribute to a potential discontiguous historic district within the Hayward WPCF.

Integrity Analysis

In addition to being eligible for listing under at least one of the four National Register/California Register criteria, a resource must also retain sufficient integrity to convey its historical significance. There are seven aspects to consider when evaluating the integrity of a resource: location, design, setting, materials, workmanship, feeling, and association. As discussed above, Structure 23 does not appear to be individually significant under any National Register or California Register criteria, either as a standalone resource or as a contributor to a known or potential historic district. Therefore, a discussion of integrity is not presented.

Summary

Structure 23 is not recommended individually eligible for listing in the National Register, California Register, or the City of Hayward's register of designated historical resources under any criteria. It is also not recommended eligible as a contributor to a known or potential historic district eligible for individual listing in the National Register, California Register, or the City of Hayward's register of designated historical resources. As such, the building would not be considered a historic property for the purposes of NHPA Section 106 or a historical resource for the purposes of CEQA.

State of California -- The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings ______
Review Code ______ Reviewer ______ Date ______

 ***Resource Name or #:** (Assigned by recorder) Building 27

P1. Other Identifier: Maintenance and Electrical Shop

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted**

***a. County** Alameda **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad** San Leandro, CA **Date** 2021 **T** _; **R** __; _ ☐ **of** _ ☐ **of Sec** _; ____**B.M.**

c. Address 3700 Enterprise Avenue City Hayward Zip 94545

d. UTM: (Give more than one for large and/or linear resources) Zone 10S, 576651.71 mE/ 4165592.46 mN

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, decimal degrees, etc., as appropriate)
APN 439-0099-002-02

***P3a. Description:**
Building 27 (Maintenance and Electrical Shop) is located within the Hayward Water Pollution Control Facility (WPCF). It is a 4,830-square-foot, one-story, metal-frame building. It features a rectangular footprint, is clad in raised-seam metal siding, and capped by a front-gable roof covered with metal roofing and a row of roof vents. The primary (south) façade contains a pair of partially glazed metal doors and two metal-frame, single-hung, sash windows. The rear (north) façade features two single-hung, metal sash windows and two ground-level vents. The side façades (east and west) each contain a single, flush panel door, two metal-frame, single-hung, sash windows, ground-level vents, and four roll-up metal garage doors. Typical fenestration features metal-frame, single-hung, sash windows. Several windows have been covered with metal bars. Building 27 was designed in a utilitarian architectural style.

***P3b. Resource Attributes:** (List attributes and codes) HP9. Public Utility Building

P5a. Photograph or Drawing

***P4. Resources Present:**
☒ Building ☐ Structure ☐ Object
☐ Site ☐ District ☐ Element of District
☐ Other (Isolates, etc.)

P5b. Description of Photo: Building 27, view facing northeast. Photo by ESA, January 2024.

***P6. Date Constructed/Age and Source:** ☒ Historic ☐ Prehistoric ☐ Both
Ca. 1968-75 (City of Hayward, 2024)

***P7. Owner and Address:**
City of Hayward
777 B Street
Hayward, CA 94541-5007

***P8. Recorded by:**
Amy Langford / ESA
180 Grand Avenue, Suite 1050
Oakland, CA 94612

***P9. Date Recorded:**
January 4, 2024

***P10. Survey Type:** Reconnaissance

***P11. Report Citation**: (Cite survey report and other sources, or enter "none.")
ESA. *Cultural Resources Survey Report for the City of Hayward Water Pollution Control Facility Improvements Phase II Project.* Prepared for the City of Hayward. January 2024.

***Attachments:** ☐NONE ☐Location Map ☒Continuation Sheet ☒Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐Other (List): ______

BUILDING, STRUCTURE, AND OBJECT RECORD

***Resource Name or #** (Assigned by recorder) Building 27 ***NRHP Status Code** 6Z

B1. Historic Names: Building 27, Maintenance and Electrical Shop
B2. Common Names: Building 27, Maintenance and Electrical Shop
B3. Original Use: Sludge Dewatering Facility B4. Present Use: Maintenance and electrical shop
***B5. Architectural Style:** Utilitarian
***B6. Construction History:** Previous documentation of the WPCF indicates that Building 27 was constructed ca. 1968-1975, with a centrifuge building extension added ca. 1975. Recent alterations observed by ESA staff include the installation of metal bars on several windows along the primary (south) and side (west) facades.

***B7. Moved?** ☒No ☐Yes ☐Unknown **Date:** N/A **Original Location:** N/A
***B8. Related Features:** Building 27 is part of the larger Hayward WPCF.

B9a. Architect: Jenks & Adamson (sanitary engineer) **b. Builder**: Unknown
***B10. Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A

Development of the Hayward WPCF

The following history of the development of the Hayward WPCF is an excerpt from the *Historic Resources Inventory and Evaluation Report [for the] City of Hayward Recycled Water Project, Alameda County, California* (Melvin, 2017). Corrected construction dates were provided by the City of Hayward in January 2024 and added in brackets below.

> *In 1946, the California State Board of Public Health passed a resolution prohibiting raw sewage discharge into San Francisco Bay; the resolution also ordered municipalities to begin immediate development of wastewater treatment facilities. By 1952, the only cities not yet in compliance were Millbrae, Sausalito, and Hayward.*
>
> *In November 1950, the City of Hayward used funds from a federal loan to hire prominent sanitary engineer Harry N. Jenks as a consultant in developing its sewage treatment plant.… Constructed for approximately $2 million on 40 acres purchased from William Johnson, the plant was financed by a $1.7 million revenue bond issue passed in April 1952, later augmented by another $300,000 bond issue passed that December. Contractors Barrett & Hilp and DeLuca Construction Co. completed construction in late 1953. The Hayward Municipal Sewage Treatment Plant [as the WPCF was originally known] originally included a primary biofilter (Structure 1), a primary clarifier (Structure 3), a secondary clarifier (Structure 2), a primary mixing tank (Structure 5), a secondary mixing tank (Structure 4), a vacuator (Structure 6), a primary digester (Structure 7), a control house & pumping plant (Building 8), a hydraulic jump aerator (non-extant), an effluent box (non-extant), sludge drying beds (non-extant), … an effluent pond (Structures 9 and 10, originally designed as one of three ponds) [and a bypass control box (Structure 11)]. …*

(Continued on page 3)

B11. Additional Resource Attributes: None
***B12. References:**

Kyle Carbert (City of Hayward). Email to Johanna Kahn (ESA). January 8, 2024.
Melvin, Steven. *Historic Resources Inventory and Evaluation Report [for the] City of Hayward Recycled Water Project, Alameda County, California*. Prepared by JRP Historical Consulting, LLC, Davis, CA, for the City of Hayward. May 2017.

B13. Remarks: None

***B14. Evaluator:** Johanna Kahn and Amy Langford / ESA
***Date of Evaluation:** January 2024

(This space reserved for official comments.)

Source: Google Earth, 2024.

B10. Significance (continued):

In 1958, Hayward earmarked $835,000 for plant expansion in that year's public works bond issue. Three years later, the City of Hayward approved expansion plans submitted by Jenks, who was hired on again as a consultant. Among the additions were an additional digester (Structure 12), an additional vacuator (Structure 13), a sludge-conditioning tank (Structure 14), a large final clarifier (non-extant), and a biorainator (non-extant). The addition of a sludge conditioning tank allowed for sludge to be de-watered faster using floccule reagents and chemicals. In addition to structures related to wastewater treatment, Jenks' plans also called for the construction of a storage and maintenance building (Building 16) as well as a concrete equipment slab (non-extant, later replaced by Building 19 after 1970). The additions were constructed by Berkeley-based contracting firm C. Norman Peterson, Inc. at a cost of $882,200, well over the amount allotted three years earlier. These additions were all in place by 1966. …

By 1969, the plant was processing on average 11 [million gallons per day, or MGD], with 16 MGD during the canning season. This level of production severely taxed the system, which had been upgraded only to handle brief peak periods of 15 MGD. The following year, the City received plans for phase I of a $15 million plant expansion drafted by John Jenks' firm, Jenks & Adamson, to meet the city's needs over the next 20 years. The plans included designs for a new operations [and administration] building (Building 17), an equipment housing structure (Building 19), [an air compressor building] (Building 20), and the conversion of the primary mixing tank (Structure 5) to a flotator-thickener. The plans additionally included designs for extensive chlorination facilities adjacent to the oxidation ponds…. These chemical facilities were urgently needed at the plant, as that June, the Bay Regional Water Quality Control Board, reacting to aerial slide photographs of brownish effluent pouring into the bay from the Hayward Outfall Channel, threatened the city with a cease-and-desist order under the provisions of the Porter-Cologne Water Quality Act. …

The south Alameda County municipalities commissioned sanitary engineering firms Jenks & Adamson and Kennedy Engineers to draft a report outlining the most efficient method of implementing [a] sub-regional plan in 1970. Within two years, the firms had designed the inter-municipal "super sewer" at a projected construction cost of $82.42 million, which would be shared by the Alameda County sub-regional dischargers, collectively called the East Bay Dischargers Authority (EBDA).… At the same time that the EBDA "super sewer" plan was developing, the City of Hayward also planned the expansion of its own local sewage treatment facility, called the Hayward Wastewater Treatment Plant by 1975. Having received formal approval by the EBDA and the State Water Resources Control Board, the City of Hayward began implementing the $2.2 million Phase II expansion, which included the construction of an additional digester (Structure 23), a mixing and heating building (Building 28), a waste gas burner [(non-extant)], additional oxidation ponds … [a gasoline pump (Structure 21), and] a centrifuge building extension (non-extant, added to Building 27) …

Since the mid-1970s, the plant has undergone several subsequent expansions. Somewhat minor additions to the plant include the construction of additional storage facilities [(Building 30 ca. 1980 and Building 37 ca. 2005) [, the old power generation station (Building 25) in 1982, and the high-pressure gas storage tank (Structure 26) in 1982 as well as] the renovation and expansion of the [operations and] administration building (ca. [1981 and] 1994). In the early 1980s, the plant was expanded to include a fluid bed reactor (Structure 29)... In the mid-to-late 1990s, the Headworks (Building 34) [was] constructed [, and in 2002, the boiler building (Building 35) was constructed]. In 2008, the plant completed the massive $58 million Phase I of the Water Pollution Control Facility Improvement Project. This expansion included a second trickling filter (Structure 40), two new final clarifiers (Structures 47 and 48), [aeration blower building (Building 31)], solids contact basins (Structure 32 replaced the ca. 1962 final clarifier), solids thickening facilities (Building 44), [the water reclamation station (Structure 15), the trickling filter pumping station (Structure 41), two biofilters (Structures 43 and 45), the soil bed odor filter (Structure 49), the sludge polymer feed system (Structure 50), the stormwater pump station (Structure 51), the final clarifier electrical building (Building 52)], and a 12kV electrical system (Buildings 39, 42, and 46). In 2013, the FOG (fat, oil, and grease) receiving station (Structure 18) was constructed[. In 2014, the cogeneration system waste heat radiator(Structure 24) was added. In 2016,] the [gas conditioning area (Structure 36) and the] cogeneration building (Building 38) [were] constructed, and Structure 5 was converted to the southwest primary clarifier. Building 33, the engineering office, is a temporary building erected in 2016 to oversee planning and construction. [The southwest primary clarifier electrical building (Building 22) was constructed in 2017.] (Melvin, 2017:16-21)

Significance Evaluation

Building 27 is evaluated below for potential historic significance according to National Register of Historic Places (National Register) Criteria A through D and California Register of Historical Resources (California Register) Criteria 1 through 4. The City of Hayward applies California Register criteria to determine eligibility for local designation.

Criterion A/1 – Event. Research does not indicate that Building 27 is associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States. The Hayward WPCF was originally constructed in 1953 to treat sanitary wastewater before it is released into San Francisco Bay. The facility was expanded over subsequent decades, and Building 27 was constructed ca. 1968-1975 as one of several buildings and structures likely added during the 1970s. As the original Sludge Dewatering Facility building, Building 27 supports the overall process of wastewater treatment, and no records were identified to suggest that Building 27 specifically is the site of important events. For these reasons, Building 27 does not appear to be individually eligible for listing under Criterion A/1.

Criterion B/2 – Person. Research does not indicate that Building 27 is associated with the lives of persons important to local, California, or national history. (Design professionals are discussed under Criterion C/3.) No individuals are directly associated with the building, which has apparently functioned as a sludge dewatering facility and then a general maintenance and electrical shop after 1975. For this reason, Building 27 does not appear to be individually eligible for listing under Criterion B/2.

Criterion C/3 – Design/Construction. Building 27 does not embody the distinctive characteristics of a type, period, region, or method of construction. It was built ca. 1968-1975, nearly two decades after the original Hayward WPCF. Building 27 is a utilitarian, metal-frame building originally intended for standard water treatment processes and later used for miscellaneous utility repairs and does not appear to represent the work of a master or possess high artistic values. For these reasons, Building 27 does not appear to be individually eligible for listing under Criterion C/3.

Criterion D/4 – Information Potential. Criterion D/4 typically applies to archaeological resources rather than architectural resources. When Criterion D/4 does relate to architectural resources, it is relevant when the building/structure itself is the principal source of important construction-related information. Building 27 was constructed using common materials and building techniques and does not appear to have the potential to provide important information related to materials or construction types. Therefore, Building 27 does not appear to be individually eligible for listing under Criterion D/4.

Historic District Considerations

In 2017, an evaluation of the Hayward WPCF concluded that it was not eligible for listing in the National Register or California Register as a historic district under any criteria (Melvin, 2017). ESA updated the evaluation in 2024 and concurred with the previous finding. No apparent patterns emerge to suggest that there is a potential district or districts within the Hayward WPCF that include Building 27. Additionally, City of Hayward records do not indicate that any of the age-eligible architectural resources within the Hayward WPCF would contribute to a potential discontiguous historic district within the Hayward WPCF.

Integrity Analysis

In addition to being eligible for listing under at least one of the four National Register/California Register criteria, a resource must also retain sufficient integrity to convey its historical significance. There are seven aspects to consider when evaluating the integrity of a resource: location, design, setting, materials, workmanship, feeling, and association. As discussed above, Building 27 does not appear to be individually significant under any National Register or California Register criteria, either as a standalone resource or as a contributor to a known or potential historic district. Therefore, a discussion of integrity is not presented.

Summary

Building 27 is not recommended individually eligible for listing in the National Register, California Register, or the City of Hayward's register of designated historical resources under any criteria. It is also not recommended eligible as a contributor to a known or potential historic district eligible for individual listing in the National Register, California Register, or the City of Hayward's register of designated historical resources. As such, the building would not be considered a historic property for the purposes of NHPA Section 106 or a historical resource for the purposes of CEQA.

State of California -- The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings ______
Review Code ______ Reviewer ______ Date ______

 ***Resource Name or #:** (Assigned by recorder) Building 28

P1. Other Identifier: Mixing and Heating Building

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted**

***a. County** Alameda **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad** San Leandro, CA **Date** 2021 **T** _; **R** _; _ ☐ **of** _ ☐ **of Sec** _; ____**B.M.**

c. Address 3700 Enterprise Avenue City Hayward Zip 94545

d. UTM: (Give more than one for large and/or linear resources) Zone 10S, 576721.99 mE/ 4165646.48 mN

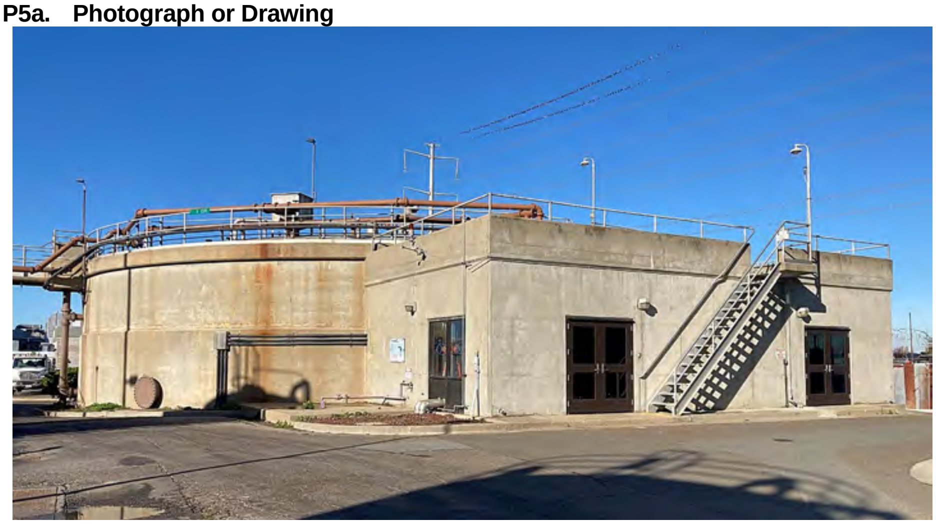
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, decimal degrees, etc., as appropriate)
APN 439-0099-002-02

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

Building 28 (Mixing and Heating Building) is located within the Hayward Water Pollution Control Facility (WPCF). It is a 830-square-foot, one-story concrete building. It is capped by a flat roof with parapets framed by a metal protective railing. The roof is accessible from the primary (east) façade by a utilitarian metal staircase with metal handrails. The primary (east) façade also features two pairs of partially glazed, metal doors. The side (south) façade features two fixed, metal-frame windows. Building 28 was designed in a utilitarian architectural style. The west wall of Building 28 is physically attached to Structure 23 (Digester No. 1).

***P3b. Resource Attributes:** (List attributes and codes) HP9. Public Utility Building

P5a. Photograph or Drawing



***P4. Resources Present:**
☒ Building ☐ Structure ☐ Object
☐ Site ☐ District ☐ Element of District
☐ Other (Isolates, etc.)

P5b. Description of Photo: Building 28 in right foreground (Structure 23 is visible in left background), view facing northwest. Photo by ESA, January 2024.

***P6. Date Constructed/Age and Source:** ☒ Historic ☐ Prehistoric ☐ Both
Ca. 1975 (City of Hayward, 2024)

***P7. Owner and Address:**
City of Hayward
777 B Street
Hayward, CA 94541-5007

***P8. Recorded by:** (Name, affiliation, and address)
Amy Langford / ESA
180 Grand Avenue, Suite 1050
Oakland, CA 94612

***P9. Date Recorded:** January 4, 2024

***P10. Survey Type:** Reconnaissance

***P11. Report Citation**: (Cite survey report and other sources, or enter "none.")
ESA. *Cultural Resources Survey Report for the City of Hayward Water Pollution Control Facility Improvements Phase II Project.* Prepared for the City of Hayward. January 2024.

***Attachments:** ☐NONE ☐Location Map ☒Continuation Sheet ☒Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐Other (List): ______

BUILDING, STRUCTURE, AND OBJECT RECORD

***Resource Name or #** (Assigned by recorder) Building 28 ***NRHP Status Code** 6Z

B1. Historic Names: Building 28, Mixing and Heating Building
B2. Common Names: Building 28, Mixing and Heating Building
B3. Original Use: auxiliary mixing and heating building for Digesters No. 1-3. B4. Present Use: auxiliary mixing and heating building for Digesters No. 1-3.
***B5. Architectural Style:** Utilitarian
***B6. Construction History:** Previous documentation of the WPCF indicates that Building 28 was constructed ca. 1975. Correspondence with Hayward WPCF staff indicates that the building underwent unspecified modifications ca. 2017.

***B7. Moved?** ☒**No** ☐**Yes** ☐**Unknown** **Date:** N/A **Original Location:** N/A
***B8. Related Features:** Building 28 (west façade) is attached to Digester No. 1 (Structure 23).

B9a. Architect: Jenks & Adamson (sanitary engineer) **b. Builder**: Unknown
***B10. Significance: Theme** N/A **Area** N/A
Period of Significance N/A **Property Type** N/A **Applicable Criteria** N/A

Development of the Hayward WPCF

The following history of the development of the Hayward WPCF is an excerpt from the *Historic Resources Inventory and Evaluation Report [for the] City of Hayward Recycled Water Project, Alameda County, California* (Melvin, 2017). Corrected construction dates were provided by the City of Hayward in January 2024 and added in brackets below.

> *In 1946, the California State Board of Public Health passed a resolution prohibiting raw sewage discharge into San Francisco Bay; the resolution also ordered municipalities to begin immediate development of wastewater treatment facilities. By 1952, the only cities not yet in compliance were Millbrae, Sausalito, and Hayward.*
>
> *In November 1950, the City of Hayward used funds from a federal loan to hire prominent sanitary engineer Harry N. Jenks as a consultant in developing its sewage treatment plant.… Constructed for approximately $2 million on 40 acres purchased from William Johnson, the plant was financed by a $1.7 million revenue bond issue passed in April 1952, later augmented by another $300,000 bond issue passed that December. Contractors Barrett & Hilp and DeLuca Construction Co. completed construction in late 1953. The Hayward Municipal Sewage Treatment Plant [as the WPCF was originally known] originally included a primary biofilter (Structure 1), a primary clarifier (Structure 3), a secondary clarifier (Structure 2), a primary mixing tank (Structure 5), a secondary mixing tank (Structure 4), a vacuator (Structure 6), a primary digester (Structure 7), a control house & pumping plant (Building 8), a hydraulic jump aerator (non-extant), an effluent box (non-extant), sludge drying beds (non-extant), … an effluent pond (Structures 9 and 10, originally designed as one of three ponds) [and a bypass control box (Structure 11)]. …*

(Continued on page 3)

B11. Additional Resource Attributes: None
***B12. References:**

Kyle Carbert (City of Hayward). Email to Johanna Kahn (ESA). January 8, 2024.
Melvin, Steven. *Historic Resources Inventory and Evaluation Report [for the] City of Hayward Recycled Water Project, Alameda County, California*. Prepared by JRP Historical Consulting, LLC, Davis, CA, for the City of Hayward. May 2017.

B13. Remarks: None

***B14. Evaluator:** Johanna Kahn and Amy Langford / ESA
***Date of Evaluation:** January 2024

(This space reserved for official comments.)

Source: Google Earth, 2024.

B10. Significance (continued):

In 1958, Hayward earmarked $835,000 for plant expansion in that year's public works bond issue. Three years later, the City of Hayward approved expansion plans submitted by Jenks, who was hired on again as a consultant. Among the additions were an additional digester (Structure 12), an additional vacuator (Structure 13), a sludge-conditioning tank (Structure 14), a large final clarifier (non-extant), and a biorainator (non-extant). The addition of a sludge conditioning tank allowed for sludge to be de-watered faster using floccule reagents and chemicals. In addition to structures related to wastewater treatment, Jenks' plans also called for the construction of a storage and maintenance building (Building 16) as well as a concrete equipment slab (non-extant, later replaced by Building 19 after 1970). The additions were constructed by Berkeley-based contracting firm C. Norman Peterson, Inc. at a cost of $882,200, well over the amount allotted three years earlier. These additions were all in place by 1966. …

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Since the mid-1970s, the plant has undergone several subsequent expansions. Somewhat minor additions to the plant include the construction of additional storage facilities [(Building 30 ca. 1980 and Building 37 ca. 2005) [, the old power generation station (Building 25) in 1982, and the high-pressure gas storage tank (Structure 26) in 1982 as well as] the renovation and expansion of the [operations and] administration building (ca. [1981 and] 1994). In the early 1980s, the plant was expanded to include a fluid bed reactor (Structure 29)... In the mid-to-late 1990s, the Headworks (Building 34) [was] constructed [, and in 2002, the boiler building (Building 35) was constructed]. In 2008, the plant completed the massive $58 million Phase I of the Water Pollution Control Facility Improvement Project. This expansion included a second trickling filter (Structure 40), two new final clarifiers (Structures 47 and 48), [aeration blower building (Building 31)], solids contact basins (Structure 32 replaced the ca. 1962 final clarifier), solids thickening facilities (Building 44), [the water reclamation station (Structure 15), the trickling filter pumping station (Structure 41), two biofilters (Structures 43 and 45), the soil bed odor filter (Structure 49), the sludge polymer feed system (Structure 50), the stormwater pump station (Structure 51), the final clarifier electrical building (Building 52)], and a 12kV electrical system (Buildings 39, 42, and 46). In 2013, the FOG (fat, oil, and grease) receiving station (Structure 18) was constructed[. In 2014, the cogeneration system waste heat radiator(Structure 24) was added. In 2016,] the [gas conditioning area (Structure 36) and the] cogeneration building (Building 38) [were] constructed, and Structure 5 was converted to the southwest primary clarifier. Building 33, the engineering office, is a temporary building erected in 2016 to oversee planning and construction. [The southwest primary clarifier electrical building (Building 22) was constructed in 2017.] (Melvin, 2017:16-21)

Significance Evaluation

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Criterion A/1 – Event. Research does not indicate that Building 28 is associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States. The Hayward WPCF was originally constructed in 1953 to treat sanitary wastewater before it is released into San Francisco Bay. The facility was expanded over subsequent decades, and Building 28 was constructed ca. 1975 as one of several buildings and structures added during the 1970s. As a mixing and heating building, Building 28 ensures the safe operation of the nearby digesters and supports the overall process of wastewater treatment, and no records were identified to suggest that Building 28 specifically is the site of important events. For these reasons, Building 28 does not appear to be individually eligible for listing under Criterion A/1.

Criterion B/2 – Person. Research does not indicate that Building 28 is associated with the lives of persons important to local, California, or national history. (Design professionals are discussed under Criterion C.) No individuals are directly associated with the building, which has apparently functioned as a mixing and heating building since 1975. For this reason, Building 28 does not appear to be individually eligible for listing under Criterion B/2.

Criterion C/3 – Design/Construction. Building 28 does not embody the distinctive characteristics of a type, period, region, or method of construction. It was built ca. 1975, nearly two decades after the original Hayward WPCF. Building 28 is a utilitarian, concrete building and does not appear to represent the work of a master or possess high artistic values. For these reasons, Building 28 does not appear to be individually eligible for listing under Criterion C/3.

Criterion D/4 – Information Potential. Criterion D/4 typically applies to archaeological resources rather than architectural resources. When Criterion D/4 does relate to architectural resources, it is relevant when the building/structure itself is the principal source of important construction-related information. Building 28 was constructed using common materials and building techniques and does not appear to have the potential to provide important information related to materials or construction types. Therefore, Building 28 does not appear to be individually eligible for listing under Criterion D/4.

Historic District Considerations

In 2017, an evaluation of the Hayward WPCF concluded that it was not eligible for listing in the National Register or California Register as a historic district under any criteria (Melvin, 2017). ESA updated the evaluation in 2024 and concurred with the previous finding. No apparent patterns emerge to suggest that there is a potential district or districts within the Hayward WPCF that include Building 28. Additionally, City of Hayward records do not indicate that any of the age-eligible architectural resources within the Hayward WPCF would contribute to a potential discontiguous historic district within the Hayward WPCF.

Integrity Analysis

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Summary

Building 28 is not recommended individually eligible for listing in the National Register, California Register, or the City of Hayward's register of designated historical resources under any criteria. It is also not recommended eligible as a contributor to a known or potential historic district eligible for individual listing in the National Register, California Register, or the City of Hayward's register of designated historical resources. As such, the building would not be considered a historic property for the purposes of NHPA Section 106 or a historical resource for the purposes of CEQA.