EAST BAY MUNICIPAL UTILITY DISTRICT

Walnut Creek Water Treatment Plant Pretreatment Project

Draft Environmental Impact Report

SCH # 2022020573

Volume I – Draft EIR

Prepared By:

Woodard & Curran

September 2023

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East Bay Municipal Utility District

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Acronyms and Abbreviations

AB	Assembly Bill
ABAG	Association of Bay Area Governments
ACM	asbestos-containing materials
ADT	Average daily traffic
AERMOD	American Meteorological Society/Environmental Protection Agency Regulatory Model
AOC	Areas of Concern
AST	Aboveground Storage Tank
ASTM	American Society for Testing and Materials
ATCM	Airborne Toxics Control Measure
AWSC	all-way stop-controlled intersection
AWWA	American Water Works Association
BAAQMD	Bay Area Air Quality Management District
BACT	Best Available Control Technology
BART	Bay Area Rapid Transit
BMP	Best Management Practices
B.P.	Before present
CAAA	Clean Air Act Amendments
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
CalARP	California Accidental Release Program
CAL FIRE	California Department of Forestry and Fire Protection
Cal-IPC	California Invasive Plant Council
CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officers Association
CAPP	Community Air Protection Program
CARB	California Air Resources Board
Care	Community air risk evaluation
CBC	California Building Code
CCAA	California Clean Air Act

CCC	Chlorine contact chamber
CCCFPD	Contra Costa County Fire Protection District
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CDMG	California Division of Mines and Geology
CDC	California Department of Conservation
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CGS	California Geologic Survey
CH_4	methane
CHRIS	California Historical Resources Information System
CMP	Congestion Management Program
CNDDB	California Natural Diversity Database
CNG	Compressed natural gas
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Ranks
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
CY	cubic yard
dB	decibel
dBA	A-weighted decibel
dbh	diameter at breast height
DBPR	Disinfection Byproducts Rule

DNL	Day-night noise level
DOSH	California Department of Occupational Safety and Health
DPM	diesel particulate matter
DSOD	Division of Safety of Dams
DTSC	Department of Toxic Substances Control
DWR	Department of Water Resources
EBMUD	East Bay Municipal Utility District
EBRPD	East Bay Regional Park District
EIR	Environmental Impact Report
EMFAC	Emissions Factor
EO	Executive Order
EPCRA	Emergency Planning and Community Right-To-Know Act
ES	Executive Summary
ESA	Endangered Species Act
ESA (Phase 1)	Environmental Site Assessment (Phase 1)
ESL	Environmental Screening Levels
FMC	Facilities Maintenance and Construction
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHSZ	Fire Hazard Severity Zone
FHWA	Federal Highway Administration
FMP	Fire Management Plan
GHG	Greenhouse Gas
GSP	Groundwater Sustainability Plan
H_2S	Hydrogen Sulfide
HAP	Hazardous Air Pollutants
HARP	Hotspot Analysis and Reporting Program Air Dispersion Modeling and Risk Assessment Tool
HCP	habitat conservation plan
HEPA	high efficiency particulate air
HFC	hydrofluorocarbons
HI	Hazard index
HMBP	Hazardous Materials Business Plan

HMTA	Hazardous Materials Transportation Act
HRA	Health Risk Assessment
Hwy	Highway
I-680	Interstate 680
in/sec	inches per second
IPaC	USFWS Information for Planning and Consultation
IPCC	Intergovernmental Panel on Climate Change
IS	Initial Study
Lamorinda	Lafayette/Moraga/Orinda
lb/day	Pounds per day
LBP	lead-based paint
LCFS	Low Carbon Fuel Standard
L_{dn}	Day-Night Average Sound Level
L_{eq}	Equivalent Sound Level
LHMP	Local Hazard Mitigation Plan
L_{max}	Maximum Sound Level
LNG	Liquified natural gas
LOS	Level of Service
LOX	Liquid oxygen
LRA	Local Responsibility Area
LT	Long-term
MACT	Maximum Achievable Control Technology
MBTA	Migratory Bird Treaty Act
MG	Million gallon
MGD	Million gallons per day
MM	Mitigation measure
mph	miles per hour
MT	metric tons
ug/m^3	Micrograms per cubic meter
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan

NESHAP	National Emission Standards for Hazardous Air Pollutants
NFPA	National Fire Prevention Association
NHPA	National Historic Preservation Act
NIOSH	National Institute of Safety and Health
NO	Nitric Oxide
N_2O	Nitrous Oxide
NO_2	Nitrogen Dioxide
NO_X	Nitrogen Oxides
NOAA	National Oceanic and Atmospheric Administration
NOC	Notice of Completion
NOI	Notice of Intent
NOP	Notice of Preparation
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NSPS	New Source Performance Standards
NWIC	Northwest Information Center
O_3	Ozone
OEHHA	California Office of Environmental Health Hazard Assessment
OPR	Office of Planning and Research
OSHA	Occupational Safety and Health Administration
PACI	Polyaluminum chloride
PCB	Polychlorinated byphenyl
Pb	lead
PFC	perfluorocarbons
PGA	Peak ground acceleration
PG&E	Pacific Gas & Electric
PM	Particulate Matter
PM_{10}	PM_{10} particulate matter (10 microns or less in diameter)
$PM_{2.5}$	$PM_{2.5}$ particulate matter (2.5 microns or less in diameter)
PMI	point of maximum impact
ppm	parts per million
PPV	Peak Particle Velocity

PRC	Public Resources Code
PRD	Permit Registration Documents
PSD	Prevention of Significant Deterioration
Project	Walnut Creek Water Treatment Plant Pretreatment Project
RCNM	Roadway Construction Noise Model
RCRA	Resource Conservation and Recovery Act
REM	Rapid eye movement
Risk MAP	Risk Mapping, Assessment, and Planning
RMP	Risk management plan
ROG	Reactive Organic Gases
ROW	right-of-way
RRMP	Range Resource Management Plan
RSL	Regional Screening Levels
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCU	Santa Clara Unit
SDP	Special Discharge Permit
SFBAAB	San Francisco Bay Area Air Basin
SFRWQCB	San Francisco Bay Area Regional Water Quality Control Board
SF_6	sulfur hexafluoride
SIP	State Implementation Plan
SMARA	Surface Mining and Reclamation Act
SMARTS	Storm Water Multi-Application & Report Tracking System
SMP	Surface Mining Permit
SO_2	sulfur dioxide
SR-24	State Route 24
SRA	State Responsibility Area
ST	Short-term
STC	sound transmission class
STLC	Soluble Threshold Limit Concentrations
SU	Significant and Unavoidable
SWPPP	Stormwater Pollution Prevention Plan

SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminants
TCLP	Toxic Characteristic Leaching Procedures
TCP	Traffic Control Plan
TMDL	Total Maximum Daily Load
TNM	Traffic Noise Model
TPY	tons per year
TTLC	Total Threshold Limit Concentrations
UC	University of California
US	United States
USA	Underground Service Alert
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USDA	U.S. Department of Agriculture
U.S.	United States
U.S. EPA	U.S. Environmental Protection Agency
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	Underground storage tank
UWMP	Urban Water Management Plan
v/c	Volume/capacity
VDECS	Verified Diesel Emissions Control Strategies
VegCAMP	California Vegetation Classification and Mapping Program
VHFHSV	Very High Fire Hazard Severity Zone
VMT	vehicle miles traveled
VOC	Volatile organic compounds
WGCEP	Working Group on California Earthquake Probabilities
WDRs	Waste Discharge Requirements
WEN	Water Energy Nexus
WTP	Water treatment plant
WTTIP	Water Treatment and Transmission Improvement Program

WUI	Wildland-Urban Interface
VOC	volatile organic compound

Executive Summary

ES.1 Introduction

The East Bay Municipal Utility District (EBMUD) is proposing the Walnut Creek Water Treatment Plant (WTP) Pretreatment Project (Project), which involves enhancing the existing Walnut Creek WTP built in 1967 and making improvements at the Lafayette WTP. These water treatment plants are situated on EBMUD-owned properties in Walnut Creek and Lafayette, California, respectively. The Walnut Creek WTP serves approximately 225,000 people in EBMUD's East-of-Hills service area, which includes portions of Pleasant Hill, Walnut Creek, Alamo, Lafayette, Danville, Blackhawk, and San Ramon Valley communities. The Walnut Creek WTP primarily treats Mokelumne River water stored in the Sierra foothills at Pardee Reservoir, but also treats untreated water stored locally in EBMUD's Briones Reservoir. The Walnut Creek WTP lacks pretreatment and ozone facilities that limit its ability to treat water from the Sacramento River or other water transfers via the Freeport Regional Water Project (Freeport) facility and from neighboring water agencies via interties during planned and unplanned outages, as well as during droughts. The Project would add pretreatment facilities to the Walnut Creek WTP that would allow EBMUD to more reliably treat a broader range of untreated Pardee and Briones water resulting from high rainfall runoff, wildfires, algae blooms, climate change and emerging contaminants, and improve the ability to treat supplemental supplies from Freeport or the interties during planned and unplanned outages and future droughts. The Project would also improve treated water quality, taste, and odor by removing organics and by adding ozone treatment. The Project would also increase the Walnut Creek WTP capacity to meet planned future demands, improve water system reliability and operational flexibility, and allow for the potential decommissioning of the Lafayette WTP.

The Project includes construction of staging areas, removal of vegetation including tree removal, grading, construction of new pretreatment facilities, ozone facilities, consolidated maintenance building, buried pipelines, outdoor lighting, stormwater facilities, security fencing, and paving, relocation of informal hiking trails, demolition of existing facilities and maintenance facilities, and site restoration including new trees at the Walnut Creek WTP. The Project also includes removal of vegetation including tree removal, grading, construction of new weir structures, buried pipelines, and paving, demolition of an existing weir structure, and site restoration including new trees at the Lafayette WTP. The site plan for Walnut Creek WTP is shown on **Figure ES-1** and the site plan for Lafayette WTP is shown on **Figure ES-2**. The Project would be constructed in two phases. Phase 1 involves construction at both sites and would allow the Walnut Creek WTP to treat a broader range of untreated water quality and increase the capacity from 115 million gallons per day (MGD) to 125 MGD. Phase 2 involves construction at the Walnut Creek WTP and would allow the Walnut Creek WTP to further improve the ability to treat a broader range of untreated water quality and would increase the capacity to 160 MGD. Increasing the capacity would allow the Walnut Creek WTP to serve planned land use changes and redevelopment projects disclosed and incorporated into relevant land jurisdiction general plans.

Figure ES-1: Walnut Creek WTP Site Plan and Phasing

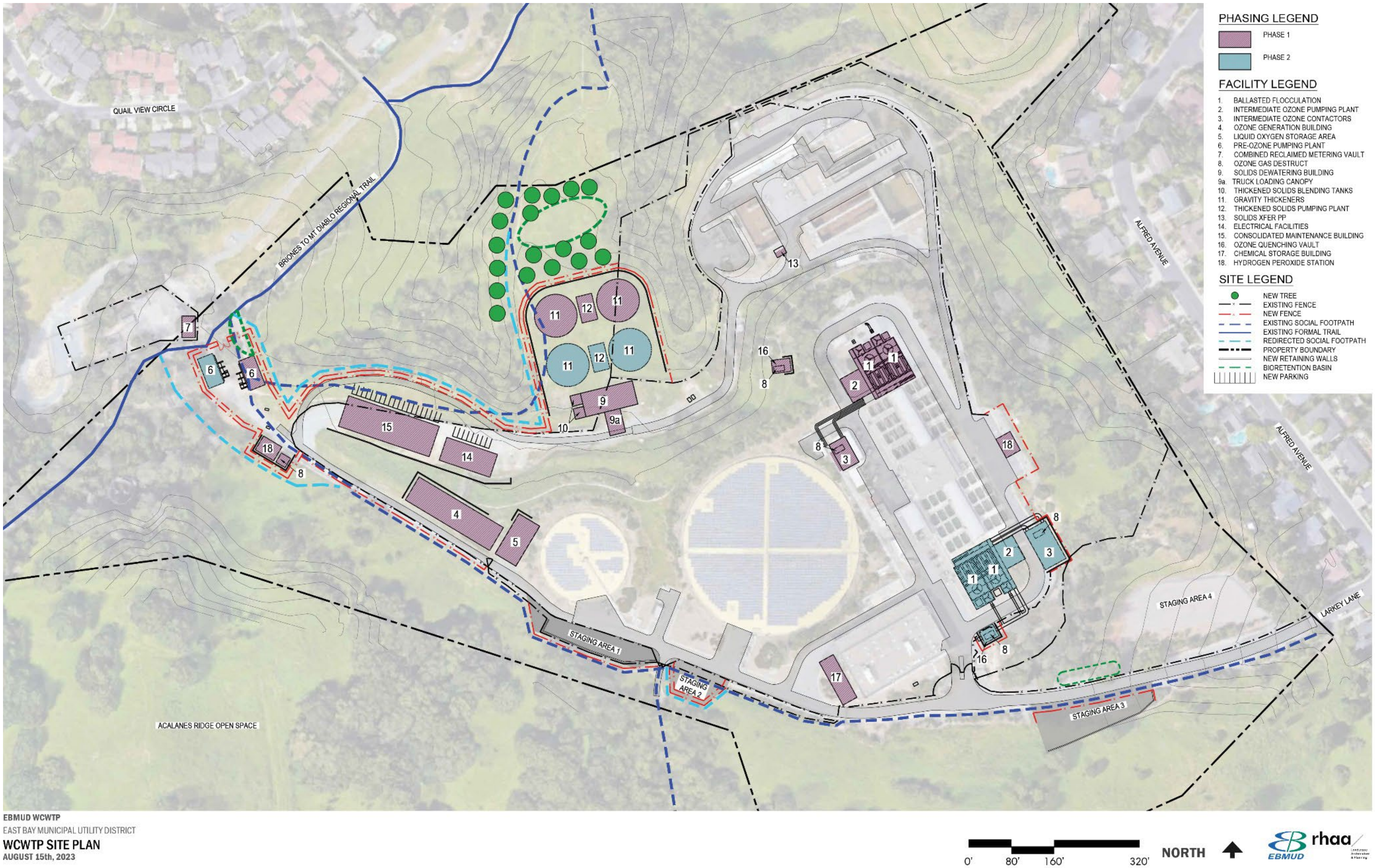
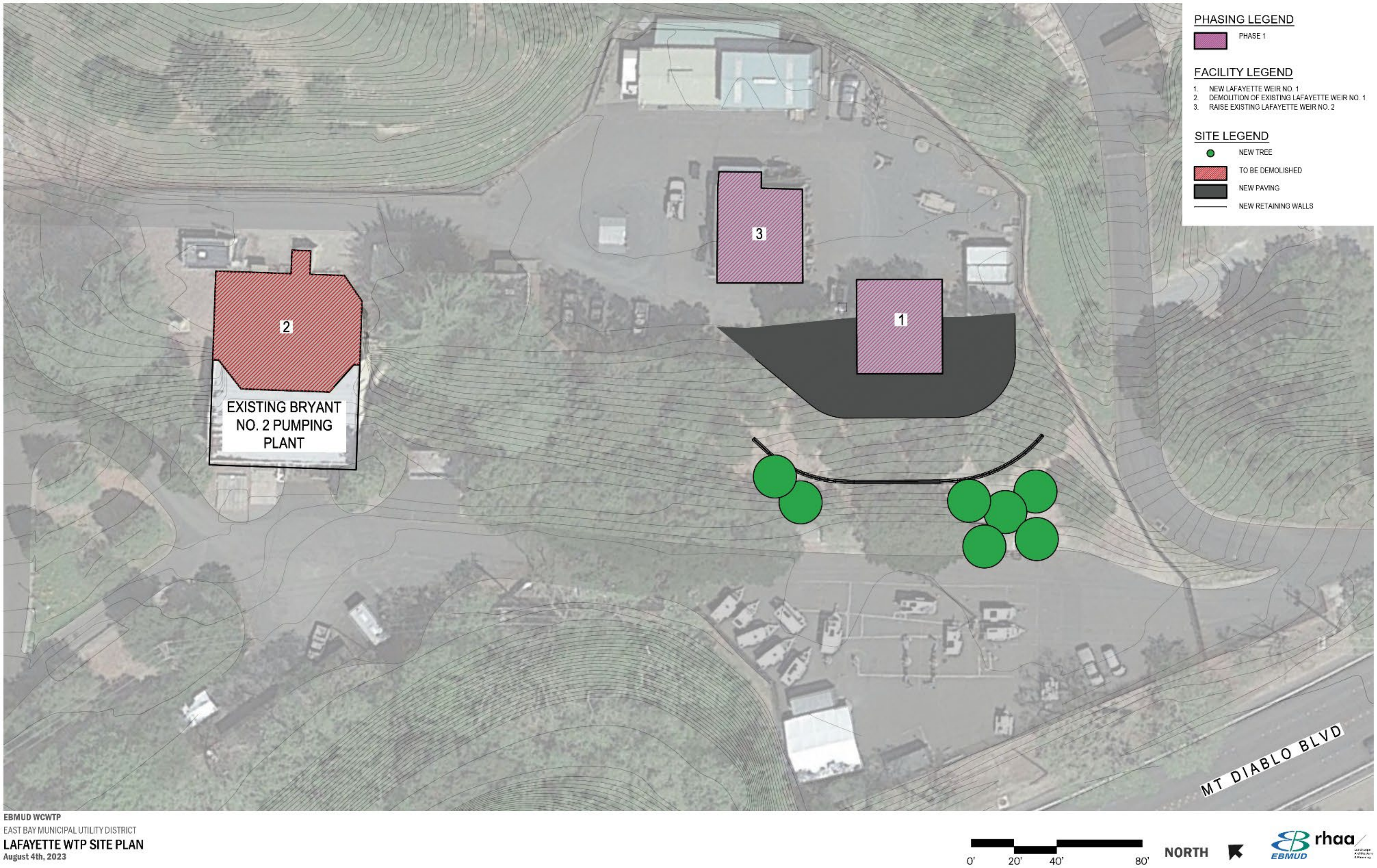


Figure ES-2: Lafayette WTP Site Plan



EBMUD prepared an Initial Study (IS) to provide the public and Responsible and Trustee Agencies reviewing the Project with information about the Project's potential impacts on the environment. The IS evaluated the Project relative to various environmental resource areas and identified potentially significant impacts to several resource areas that required further study to determine whether such impacts are significant and, if so, whether they can be mitigated to less than significant levels. Based on the IS completed for the Project, the following areas of potentially significant environmental impact are addressed in detail in this Environmental Impact Report (EIR): Aesthetics, Air Quality, Biological Resources, Cultural Resources, Energy, Geology, Soils and Seismicity, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Hydrology and Water Quality, Land Use and Planning, Noise and Vibration, Recreation, Transportation, Tribal Cultural Resources and Wildfire. Potential cumulative impacts and potential for growth inducement are addressed and alternatives, including the No Project Alternative, are evaluated.

Based on the evaluation of impacts in the IS, it was determined that the Project would have no impacts on Agriculture and Forestry Resources, Mineral Resources, Population and Housing, Public Services, and less than significant impacts on Utilities and Service Systems. Therefore, a detailed discussion of these resources has been excluded from this EIR. EBMUD is the lead agency for compliance with the California Environmental Quality Act (CEQA) environmental review process for the Project.

The EIR considers the Project, as described above. In addition, the EIR considers the following alternatives:

- No Project Alternative: This alternative assumes that the pretreatment and ozone facilities would not be constructed, and the current treatment facilities at the Walnut Creek WTP would be unchanged.
- No Dewatering Building Alternative: This alternative involves eliminating the dewatering building from the Project and reducing the size of the gravity thickeners, which would reduce the overall construction impacts associated with the Project. There would be no change to the facilities that would be constructed at the Lafayette WTP. With no dewatering building and smaller gravity thickeners, the overall construction footprint would be smaller, and facilities would fit on the site without the need for major earthwork.

ES.2 Project Location

The Walnut Creek WTP is located in the city of Walnut Creek, California, as shown in **Figure ES-3**. The Project site is bounded by Alfred Avenue to the east, the Briones to Mt. Diablo Regional Trail to the north, and Acalanes Ridge Open Space to the south and west. The Walnut Creek WTP site is surrounded to the east and north by single-family residential homes with open space to the south and west. The Lafayette WTP is located in the city of Lafayette, California, as shown in **Figure ES-4**. The Lafayette WTP is bounded by Mt. Diablo Boulevard to the south and west, Temple Isaiah to the east, and State Route 24 to the north.

ES.3 Purpose and Need

The primary purpose of the Project is to allow the Walnut Creek WTP to more reliably treat a broader range of untreated water quality from various sources resulting from high rainfall runoff, wildfires, algae blooms, climate change and emerging contaminants, and improve the ability to treat supplemental supplies from Freeport or the interties during planned and unplanned outages and future droughts. The Project would also improve treated water quality, taste, and odor by removing organics and by adding ozone treatment. The Project would also increase the Walnut Creek WTP capacity to meet planned future demands, improve water system reliability and operational flexibility, and allow for the potential decommissioning of the Lafayette WTP. The Project would be constructed in two phases. Phase 1 would allow the Walnut Creek WTP to treat a broader range of untreated water quality and increase the capacity from 115 MGD to 125 MGD. Phase 2 would allow the Walnut Creek WTP to further improve the ability to treat a broader range of untreated water quality and would increase the capacity to 160 MGD.

ES.4 CEQA Objectives

Specific Project objectives related to operations, water quality, water service reliability, maintenance, the environment, and cost are listed in **Table ES-1**.

Figure ES-3: Walnut Creek Water Treatment Plant Pretreatment Project Walnut Creek Location

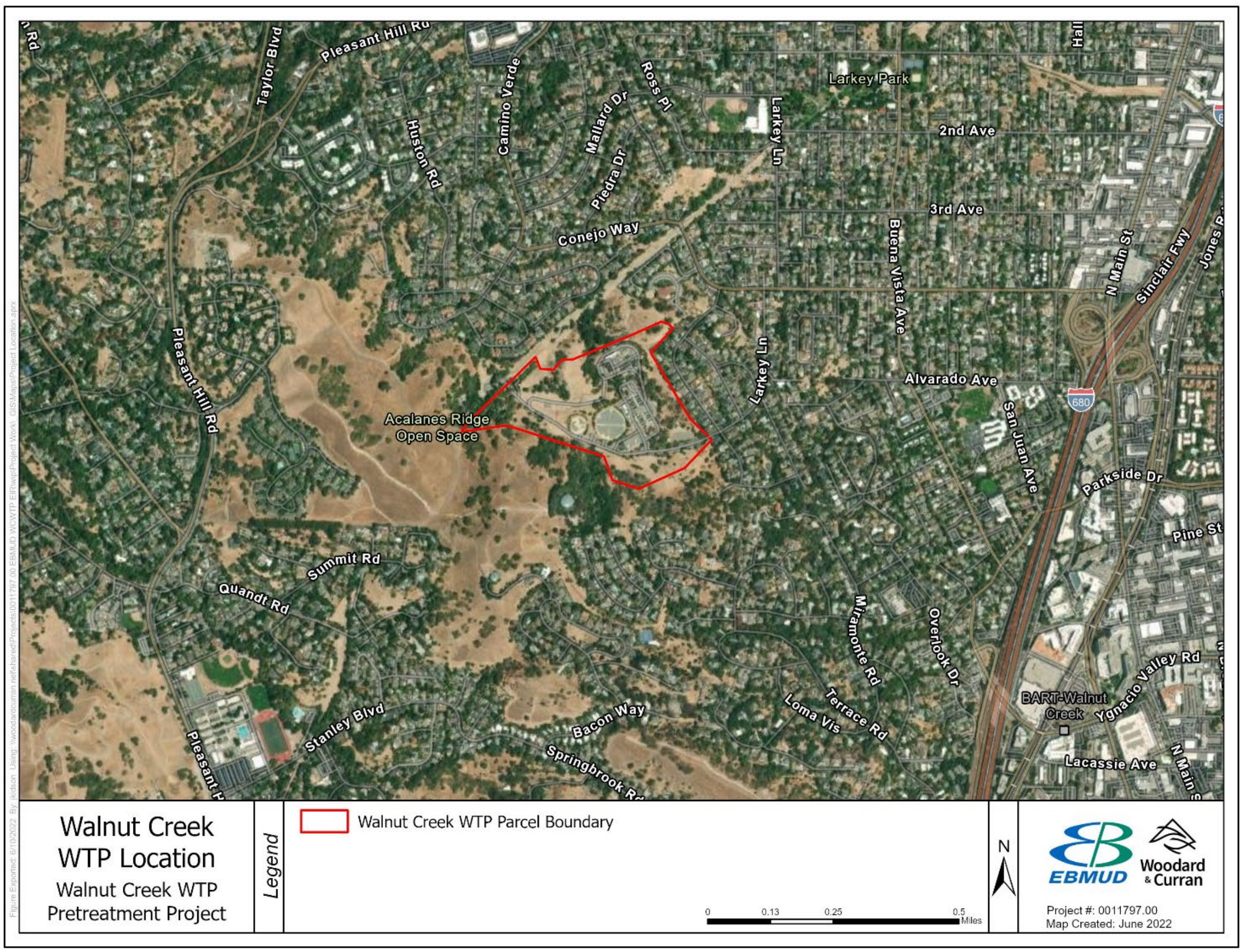


Figure ES-4: Walnut Creek Water Treatment Plant Pretreatment Project Lafayette Location

Table ES-1: Project Objectives

Category	Objective
Primary Operational Objectives	Maintain water treatment capacity at the Walnut Creek WTP when untreated water quality is diminished at Pardee Reservoir or Briones Reservoir due to high rainfall runoff, watershed fire events, droughts, algae blooms, and emerging contaminants.
	Increase flexibility to treat a broader range of water quality from supplemental water supplies entering EBMUD's water system from the Sacramento River via Freeport Regional Water Project.
	Increase flexibility to treat a broader range of water quality from supplemental water supplies entering EBMUD's water system from neighboring water agencies through untreated water agency interties during planned and unplanned outages as well as droughts.
	Increase the water treatment capacity to meet planned future demands, support planned and unplanned outages and rate restrictions at other water treatment plants, recover distribution storage quickly after power outages, allow distribution pumping plants to operate only when renewable electricity is most plentiful and electricity costs are lowest, and accommodate the potential decommissioning of the Lafayette WTP.
	Continue to meet drinking water and environmental regulations and achieve EBMUD's internal long-term water quality goals.
Secondary Operational Objectives	Maintain a similar and acceptable aesthetic site environment after construction.
	Minimize life-cycle costs (capital, operating, and maintenance) to EBMUD's customers.
	Maximize the useful life of existing facilities in a manner that reduces costs for customers.
	Minimize operational emissions of greenhouse gases.
Construction Objectives	Minimize environmental impacts on the community during construction.
	Reuse or recycle building materials on site to the extent feasible, including concrete demolition materials and excavated earth.
	Maintain water service and emergency flows during construction.
	Protect the local community from construction hazards.
	Provide safe construction site conditions.

ES.5 Summary of Impacts

Table ES-2 below provides a summary of potential Project impacts by environmental resource topic area, and EBMUD Practices and Procedures that would be applied to the Project. **Table ES-3** is a summary of all significant impacts following implementation of EBMUD's Practices and Procedures and required mitigation measures identified for the Project. For all significant impacts, the significance after mitigation is determined.

Table ES-2: Summary of Impacts and EBMUD Practices and Procedures

Impact Area	Significance Before Practices and Procedures[1]	EBMUD Practices and Procedures[2]	Significance After Practices and Procedures[1]
Aesthetics			
Impact AES-1: Have a substantial adverse effect on a scenic vista.	PS	**EBMUD Standard Construction Specification 01 35 44, Environmental Requirements** *Section 1.1, Summary* B. Site Activities 1. Protect storm drains and surface waters from impacts of project activity. 2. Store materials and wastes such as demolition material, soil, sand, asphalt, rubbish, paint, cement, concrete or washings thereof, oil or petroleum products, or earthen materials in a manner to prevent it from being washed by rainfall or runoff outside the construction limits. 3. Reuse or dispose of excess material consistent with all applicable legal requirements and disposal facility permits. 4. Clean up all spills and immediately notify the Engineer in the event of a spill. 5. Equip stationary equipment such as motors, pumps, and generators with drip pans. 6. Divert or otherwise control surface water and waters flowing from existing projects, structures, or surrounding areas from coming onto the work and staging areas. The method of diversions or control shall be adequate to ensure the safety of stored materials and of personnel using these areas. 7. Following completion of Work, remove ditches, dikes, or other ground alterations made by the Contractor. The ground surfaces shall be returned to their former condition, or as near as practicable, in the Engineer's opinion. 8. Prevent visible dust emissions from leaving the work areas. 9. Maintain construction equipment in good operating condition to reduce emissions. 10. Handle, store, apply, and dispose of any chemical or hazardous material used in the performance of the Work in a manner consistent with all applicable federal, state, and local laws and regulations. **EBMUD Standard Construction Specification 01 35 45, Biological, Cultural, and Paleontological Resource Requirements** *Section 3.1, Protection of Native and Non-Native Protected Trees* A. Tree Protection 1. Locations of trees to be removed and protected are shown in the construction drawings. Pruning and trimming shall be completed by the Contractor and approved by the Engineer. Pruning shall adhere to the Tree Pruning Guidelines of the International Society of Arboriculture. 2. Erect exclusion fencing five feet outside of the drip lines of trees to be protected prior to ground disturbing activities. Erect and maintain a temporary minimum 3-foot high orange plastic mesh exclusion fence at the locations as shown in the drawings prior to ground disturbing activities. The fence posts shall be six-foot minimum length steel shapes, installed at 10-feet minimum on center, and be driven into the ground. The Contractor shall be	LTS

[1] Note: LTS = Less than significant; PS = Potentially Significant; SU = Significant and Unavoidable.

Impact Area	Significance Before Practices and Procedures[1]	EBMUD Practices and Procedures[2]	Significance After Practices and Procedures[1]
		prohibited from entering or disturbing the protected area within the fence except as directed by the Engineer. Exclusion fencing shall remain in place until construction is completed and the Engineer approves its removal. 3. No grading, construction, demolition, trenching for irrigation, planting or other work, except as specified herein, shall occur within the tree protection zone established by the exclusion fencing installed shown in the drawings. In addition, no excess soil, chemicals, debris, equipment or other materials shall be dumped or stored within the tree protection zone. 4. In areas that are within the tree drip line and outside the tree protection zone that are to be traveled over by vehicles and equipment, the areas shall be covered with a protective mat composed of a 12-inch thickness of wood chips or gravel and covered by a minimum ¾-inch-thick steel traffic plate. The protective mat shall remain in place until construction is completed and the Engineer approves its removal. 5. Tree roots exposed during trench excavation shall be pruned cleanly at the edge of the excavation and treated to the satisfaction of a certified arborist provided by EBMUD. 6. Any tree injured during construction shall be evaluated as soon as possible by a certified arborist provided by EBMUD, and replaced as deemed necessary by the certified arborist. **EBMUD Standard Construction Specification 01 74 05, Cleaning** *Section 1.1, Description* A. Section includes: Perform the work necessary for cleaning during construction and final cleaning on completion of the work. B. Cleaning for specific products or work is specified in the individual specification sections. *Section 3.1, General* A. At all times maintain areas covered by the Contract and public properties free from accumulations of waste, debris, and rubbish caused by construction operations. B. Conduct cleaning and disposal operations to comply with local ordinances and anti pollution laws. Do not burn or bury rubbish and waste materials on project site. Do not dispose of volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains. Do not dispose of wastes into streams or waterways. C. Use only cleaning materials recommended by manufacturer of surface to be cleaned. D. Use cleaning materials only on surfaces recommended by cleaning material manufacturers. *Section 3.2, Cleaning During Construction* A. During execution of work, clean site and public properties and legally dispose of waste materials, debris, and rubbish to assure that buildings, grounds, and public properties are maintained free from accumulations of waste materials and rubbish. All soil and any other material tracked onto the streets by the Contractor shall be cleaned immediately. The Contractor shall comply with all rules and regulations as applicable for its cleaning method. B. Dispose of all refuse off EBMUD property as often as necessary so that at no time shall there be any unsightly or unsafe accumulation of rubbish.	

[1] Note: LTS = Less than significant; PS = Potentially Significant; SU = Significant and Unavoidable.

Impact Area	Significance Before Practices and Procedures[1]	EBMUD Practices and Procedures[2]	Significance After Practices and Procedures[1]
		1. Pine needles, leaves, sticks, and other vegetative debris on the ground shall be removed if they are in the way of construction, present a safety hazard, or present a fire hazard. Otherwise they shall be left in place during construction and final cleaning C. Wet down dry materials and rubbish to lay dust and prevent blowing dust. D. Provide approved containers for collection and disposal of waste materials, debris, and rubbish. E. Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials from exposed and semi exposed surfaces. F. Repair, patch, and touch up marred surfaces to specified finish to match adjacent surfaces. G. Vacuum clean all interior spaces, including inside cabinets. Broom clean paved surfaces; rake clean other surfaces of grounds. H. Handle materials in a controlled manner with as few handlings as possible; do not drop or throw materials from heights. I. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly painted surfaces. J. Vacuum clean interior of shop building areas when ready to receive finish painting and continue vacuum cleaning on an as needed basis until successful completion of the Startup Test as defined in Section 01 75 17 – Field Startup and Testing. *Section 3.3, Final Cleaning* A. At the completion of work on all portions of the contract and immediately prior to final inspection, cleaning of the entire project will be accomplished according to the following provisions: 1. Thoroughly clean, sweep, wash, and polish all work and equipment, including finishes. The cleaning shall leave the structures and site in a complete and finished condition to the satisfaction of the Engineer. 2. Should the Contractor not remove rubbish or debris or not clean buildings and site as specified above, EBMUD reserves the right to have the cleaning done at the expense of the Contractor. B. Employ professional cleaners for final cleaning. C. In preparation for contract completion, conduct final inspection of sight exposed interior and exterior surfaces, and of concealed spaces. D. Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials from sight exposed interior and exterior finished surfaces; polish surfaces so designated to shine finish. E. Repair, patch, and touch up marred surfaces to specified finish, to match adjacent surfaces. F. Broom clean paved surfaces; rake clean other surfaces of grounds. G. Replace air handling filters if units were operated during construction. H. Clean ducts, blowers, and coils, if air handling units were operated without filters during construction. I. Clean luminaires in accordance with manufacturer's recommendations and relamp. Clean all light fixtures. J. Clean debris from roofs, gutters, and downspouts.	

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Impact Area	Significance Before Practices and Procedures[1]	EBMUD Practices and Procedures[2]	Significance After Practices and Procedures[1]
		K. Remove from EBMUD property all temporary structures and all material, equipment, and appurtenances not required as a part of, or appurtenant to, the completed work. L. Leave watercourses, storm drains, inlets, and ditches open and clear.	
Impact AES-3: Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.	PS	**EBMUD Standard Construction Specification 01 35 44, Environmental Requirements** *Section 3.9, Lighting Used During Nighttime Work* A. Ensure that temporary stationary lighting used during nighttime construction is only used when needed. All lighting used for nighttime construction shall be designed, installed, and operated to minimize glare that affects traffic near the work zone or that causes annoyance or discomfort for residences near the work zone. Lighting fixtures shall be located and aimed to provide the required level of illumination and uniformity in the work zone without the creation of unnecessary glare.	LTS
Air Quality			
Impact AIR-1: Conflict with or obstruct implementation of the applicable air quality plan.	PS	**EBMUD Standard Construction Specification 01 35 44, Environmental Requirements** *Section 1.4(F), Dust Control and Monitoring Plan* 1. Submit a plan detailing the means and methods for controlling and monitoring dust generated by demolition and other work on the site for the Engineer's acceptance prior to any work at the jobsite. a. Identify methods to comply with all applicable regulations including but not limited to the Bay Area Air Quality Management District (BAAQMD) visible emissions regulation and Public Nuisance Rule. b. Outline practices for preventing dust emissions and procedures to be used during operations and maintenance activities. c. Include measures for the control of paint overspray and abrasive blasting emissions, including, but not limited to containment, ventilation systems and monitoring for damage and leaks. d. Describe equipment and methods used to monitor compliance with the plan. *Section 3.5, Air Quality Control* A. Implement all necessary air pollutant construction measures per the Bay Area Air Quality Management District "Basic Construction Mitigation Measures" (BAAQMD CEQA Guidelines May 2017), including, but not limited to the following: 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 mph. 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.	LTS

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Impact Area	Significance Before Practices and Procedures[1]	EBMUD Practices and Procedures[2]	Significance After Practices and Procedures[1]
		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. The contractor shall post an EBMUD-furnished, publicly visible sign with EBMUD and Air District contact information regarding dust complaints. B. Implement all necessary air pollutant construction measures per the Bay Area Air Quality Management District "Additional Construction Mitigation Measures" (BAAQMD CEQA Guidelines May 2017) including but not limited to the following: 1. All exposed surfaces shall be watered at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe. 2. All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph. 3. Wind breaks (e.g., trees, fences) shall be installed on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50 percent air porosity. 4. Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established. 5. The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time. 6. All trucks and equipment, including their tires, shall be washed off prior to leaving the site. 7. Site accesses to a distance of 100 feet from the paved road shall be treated with a 6- to 12-inch compacted layer of wood chips, mulch, or gravel. 8. Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than one percent. 9. Minimizing the idling time of diesel-powered construction equipment to two minutes. 10. The project shall develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) would achieve a project wide fleet-average 20 percent NOx reduction and 45 percent PM reduction compared to the most recent ARB fleet average. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available. 11. Use low VOC (i.e., ROG) coatings beyond the local requirements (i.e., Regulation 8, Rule 3: Architectural Coatings).	

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Impact Area	Significance Before Practices and Procedures[1]	EBMUD Practices and Procedures[2]	Significance After Practices and Procedures[1]
		12. Requiring that all construction equipment, diesel trucks, and generators be equipped with Best Available Control Technology for emission reductions of NOx and PM. 13. Requiring all contractors use equipment that meets CARB's most recent certification standard for off-road heavy duty diesel engines. C. Implement all necessary EBMUD air pollutant construction measures, including but not limited to the following: 1. Gravel or apply non-toxic soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites. Submit specifications for any dust palliatives applied to unpaved roads to the Engineer. 2. Water and/or cover soil stockpiles daily. 3. All transitions from soil to a paved road shall have best management practices applied to prevent drag out of soil. 4. Water used for dust control shall not run off the job site and cause erosion or other issues. 5. Use of recycled water for dust control is encouraged. 6. Use line power instead of diesel generators at all construction sites where line power is available. 7. Temporary sources of air emissions (such as portable pumps, compressors, generators, etc.) shall be electrically powered unless the use of such equipment is not practical, feasible, or available. 8. All portable engines and equipment units used as part of construction shall be properly registered with the California Air Resources Board or otherwise permitted by the appropriate local air district, as required 9. Minimize the use of diesel generators where possible. 10. Follow applicable regulations for fuel, fuel additives, and emission standards for stationary, diesel-fueled engines. 11. Locate generators at least 100 feet away from adjacent homes, schools, and parks. 12. Perform regular low-emission tune-ups on all construction equipment, particularly haul trucks and earthwork equipment. 13. On road and off-road vehicle tire pressures shall be maintained to manufacturer specifications. Tires shall be checked and re-inflated at regular intervals. 14. Demolition debris shall be recycled for reuse to the extent feasible. See the Construction and Demolition Waste Disposal Plan paragraphs above for requirements for wood treated with preservatives (TWW). D. Dust Control during Abrasive Blasting: 1. Provide a containment system for the structure prior to beginning abrasive blasting operations. The system shall remain in place during the abrasive blasting operations and the painting of exterior surfaces.	

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Impact Area	Significance Before Practices and Procedures[1]	EBMUD Practices and Procedures[2]	Significance After Practices and Procedures[1]
		Section 3.6, Dust Monitoring during Demolition and Construction A. Provide air monitoring along the perimeter of the job site. A minimum of 4 stations, one on each side of the District property, shall be established, capable of continuous measurement of total particulate concentration when any dust generating activity is occurring. B. Conduct real-time air monitoring at appropriate locations onsite based on wind direction, type of construction activity, and sensitive receptors to ensure dust control measures are effective. C. All environmental and personal air sampling equipment shall be in conformance with the Association of Industrial Hygiene and National Institute of Safety and Health (NIOSH) standards. 1. All analysis shall be completed by an ELAP certified laboratory for the specific parameters of interest. 2. The Contractor shall provide to the Engineer, within 72 hours of sampling, all test results. D. The dust control system shall comply with the requirements of this section and any applicable laws and regulations. Specific limitations that shall be met include the following: 1. Ringelmann No. 1 Limitation: Contractor shall not emit from any source for a period or periods aggregating more than three minutes in any hour, a visible emission which is as dark or darker than No. 1 on the Ringelmann Chart, or of such opacity as to obscure an observer's view to an equivalent or greater degree. 2. Opacity Limitation: Contractor shall not emit from any source for a period or periods aggregating more than three minutes in an hour an emission equal to or greater than 20% opacity as perceived by an opacity sensing device, where such device is required by Air Quality Management District regulations. **EBMUD Standard Construction Specification 02 82 13, Asbestos Control Activities** *Section 1.1, Compliance and Intent* A. Furnish all labor, materials, facilities, equipment, services, employee training and testing, permits, and agreements necessary to perform the lead removal in accordance with these specification and with the latest regulations from the U.S. Environmental Protection Agency (EPA), the Occupational Safety and Health Administration (OSHA), the Air Quality Management District with authority over the project, the Cal/EPA Department of Toxic Substance Control, the California Occupational Safety and Health Administration (Cal/OSHA), and other federal, state, county, and local agencies. Whenever there is a conflict or overlap of the above references, the most stringent provision is applicable. B. The Electrical and Instrumentation Building has the potential to contain asbestos materials. Notify the BAAQMD at (415) 749-4762 regarding the demolition of any facility containing asbestos at least ten (10) work days prior to beginning demolition activities. *Section 1.5, Submittals (Pre-Job)* A. Project Safety and Health Plan: The Contractor shall provide a Project Safety and Health Plan prior to project initiation as specified in Section 01 35 24. B. Plan of Action 1. Asbestos Abatement:	

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Impact Area	Significance Before Practices and Procedures[1]	EBMUD Practices and Procedures[2]	Significance After Practices and Procedures[1]
		a. Submit a detailed plan of the procedures proposed for use in complying with the regulations included in this specification. The plan shall include the location and layout of decontamination areas, the sequencing of asbestos work, the interface of trades involved in the performance of work, disposal plan including location of approved disposal site, and a detailed description of the methods to be employed to control pollution. Expand upon the use of portable HEPA ventilation system, method of removal to prohibit visible emissions in work area, and packaging of removed asbestos debris. Include asbestos abatement in the Construction and Demolition Waste Disposal Plan, in accordance with Section 01 35 44. **EBMUD Procedure 600** Purpose: To promote effective proactive communication and interaction with the public to maintain and enhance relationships between EBMUD and its customers. This procedure ensures residents are provided advance notice of potentially disruptive construction activities and provides mechanisms for customers and the public to get concerns and questions addressed.	
Impact AIR-2: Expose sensitive receptors to substantial pollutant concentrations.	PS	**EBMUD Standard Construction Specification 01 35 44, Environmental Requirements** *Section 3.5, Air Quality Control* (Details as listed under Impact AIR-1)	LTS
Impact AIR-3: 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.	PS	**EBMUD Standard Construction Specification 01 35 44, Environmental Requirements** *Section 3.5, Air Quality Control* (Details as listed under Impact AIR-1)	LTS
Biological Resources			
Impact BIO-1: 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 CDFW or USFWS.	PS	**EBMUD Standard Construction Specification 01 35 45, Biological, Cultural, and Paleontological Resource Requirements** *Section 3.1, Protection of Native and Non-Native Protected Trees* (Details as listed under Impact AES-1) *Section 3.2, Protection of Birds Protected Under the Migratory Bird Treaty Act and Roosting Bats* A. Provide 30 days' written notice to the Engineer prior to ground disturbing activities, pruning, and trimming. 1. EBMUD will conduct biological reconnaissance in advance of construction and will conduct biologic monitoring during construction as necessary. B. Protected Species 1. If protected species or suitable habitat for protected species is found during biological reconnaissance surveys: a. Before beginning construction, all Contractor construction personnel are required to attend an environmental training program provided by EBMUD of up to one-day for site supervisors, foreman and project managers, and up to 30-minutes for non-supervisory	LTS

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Impact Area	Significance Before Practices and Procedures[1]	EBMUD Practices and Procedures[2]	Significance After Practices and Procedures[1]
		contractor personnel. The training program will be completed in person or by watching a video at an EBMUD-designated location, conducted by a designated biologist. The program will discuss all sensitive habitats and sensitive species that may occur within the project work limits, including the responsibilities of Contractor's construction personnel, applicable mitigation measures, and notification requirements. The Contractor is responsible for ensuring that all workers requiring training are identified to EBMUD. Prior to accessing or performing construction work, all Contractor personnel shall: 1) Sign a wallet card provided by the Engineer verifying that all Contractor construction personnel have attended the appropriate level of training relative to their position; have read and understood the contents of the environmental training; and shall comply with all project environmental requirements. 2) Display an environmental training hard hat decal (provided by EBMUD after completion of the training) at all times. b. Birds Protected under the Migratory Bird Treaty Act (MBTA): 1) It is unlawful to pursue, hunt, take, capture, or kill any migratory bird without a permit issued by the U.S. Department of the Interior. 2) If construction commences between February 1 and August 31, during the nesting season, EBMUD will conduct a preconstruction survey for nesting birds within 7 days prior to construction to ensure that no nest will be disturbed during construction. 3) If active nests of migratory bird species (listed in the MBTA) are found within the project site, or in areas subject to disturbance from construction activities, an avoidance buffer to avoid nest disturbance shall be constructed. The buffer size shall be determined by the Designated Biologist in consultation with California Department of Fish and Wildlife (CDFW) and is based on the nest location, topography, cover and species' tolerance to disturbance. 4) If an avoidance buffer is not achievable, the Designated Biologist shall monitor the nest(s) to document that no take of the nest (nest failure) has occurred. Active nests shall not be taken or destroyed under the MBTA and, for raptors, under the CDFW Code. If it is determined that construction activity is resulting in nest disturbance, work should cease immediately, and the Contractor shall notify the Engineer who will consult with the Designated Biologist and appropriate regulatory agencies. 5) If preconstruction surveys indicate that nests are inactive or potential habitat is unoccupied during the construction period, no further action is required. Trees and shrubs within the construction footprint that have been determined to be unoccupied by special-status birds or that are located outside the avoidance buffer for active nests may be removed. Nests initiated during construction (while significant disturbance from construction activities persist) may be presumed to be unaffected, and only a minimal buffer, determined by the Designated Biologist, would be necessary. c. Roosting Bats: 1) If construction commences between March 1 and July 31, during the bat maternity period, EBMUD will conduct a preconstruction survey for roosting bats within two	

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Impact Area	Significance Before Practices and Procedures[1]	EBMUD Practices and Procedures[2]	Significance After Practices and Procedures[1]
		weeks prior to construction to ensure that no roosting bats will be disturbed during construction. 2) If roosting surveys indicate potential occupation by a special-status bat species, and/or identify a large day roosting population or maternity roost by any bat species within 200 feet of a construction work area, the Designated Biologist shall conduct focused day- and/or night-emergence surveys, as appropriate. 3) If active maternity roosts or day roosts are found within the project site, or in areas subject to disturbance from construction activities, an avoidance buffers shall be constructed. The buffer size will be determined by the Designated Biologist in consultation with CDFW. 4) If a non-breeding bat roost is found in a structure scheduled for modification or removal, the bats shall be safety evicted, under the direction of the Designated Biologist, in consultation with CDFW to ensure that the bats are not injured. 5) If preconstruction surveys indicate that no roosting is present, or potential roosting habitat is unoccupied during the construction period, no further action is required. Trees and shrubs within the construction footprint that have been determined to be unoccupied by roosting bats, or that are located outside the avoidance buffer for active roosting sites may be removed. Roosting initiated during construction is presumed to be unaffected, and no buffer would be necessary.	
Impact BIO-2: 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 CDFW or USFWS.	PS	**EBMUD Standard Construction Specification 01 35 44, Environmental Requirements** *Section 1.1(B), Site Activities* (Details as listed under Impact AES-1) *Section 1.4(A), Storm Water Management* 1. Construction General Permit a. Submit the Notice of Intent, Storm Water Pollution Prevention Plan (SWPPP), and all other documents prepared for compliance with the General Construction Storm Water Permit (NPDES No. CAS000002) to the Engineer and upload them in the SWRCB's Storm Water Multi-Application & Report Tracking System (SMARTS). 1) The Engineer will electronically acknowledge appropriate submittals in SMARTS after review. 2) Contractor shall pay for all registration and annual fees under this permit/program. 2. Storm Water Management Plan a. Submit a Storm Water Management Plan that describes measures that shall be implemented to prevent the discharge of contaminated storm water runoff from the jobsite. Contaminants to be addressed include, but are not limited to soil, sediment, concrete residue, pH less than 6.5 or greater than 8.5, and any other contaminants known to exist at the jobsite location as described in Document 00 31 24 – Materials Assessment Information. 3. Local Storm Water Permits a. Obtain any local storm water permits (e.g. city, county, etc.), submit copies, and comply with their requirements.	LTS

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		b. For jobs in unincorporated Contra Costa County that are greater than one acre, Contractor shall obtain and comply with Contra Costa County's Watershed Program to enable the inspection of C.6 construction stormwater BMPs. *Section 1.4(B), Water Control and Disposal Plan* 1. Submit a detailed Water Control and Disposal Plan that complies with all requirements of the Specification and includes provisions for the types of discharges and permits in a through c below, if applicable to the project. a. Drinking Water System Discharges 1) Plan shall comply with Drinking Water Systems Discharges Statewide Permit, General Order CAG140001. a) Include the approximate discharge start date, location, receiving water, estimated flow rate, and volume of all proposed discharges to surface waters, including discharges to storm drains. b) Identify the tracking system to record all actual discharges to a surface water body or a storm drain system that drains to a surface water body, regardless of volume. c) Describe monitoring program for drinking water system discharges greater than 325,850 gallons. The Planned Discharge Tracking Form, attached to the end of this section, may be used to fulfill this requirement. d) Notify the Engineer at least one week prior to the start of a planned discharge equal to or greater than 325,850 gallons. e) Describe dechlorination and erosion/sediment controls to be used for discharges. Note: These controls shall meet or exceed EBMUD minimum standards (see Supplement 1 attached to the end of this section). f) Outline potential beneficial reuse of water from drinking water systems. Potential reuse strategies may include landscape irrigation, agricultural irrigation, dust control, and discharge to stormwater capture basins or other groundwater recharge systems. 2) Submit all records of actual discharges, monitoring, water quality data, and beneficial reuse described above to the Engineer. 3) Follow city/county/local requirements for discharging water from drinking water systems into storm drains. b. Non-Stormwater Discharges 1) Plan shall describe measures for containment, handling, treatment (as necessary), and disposal of discharges such as groundwater (if encountered), runoff of water used for dust control, stockpile leachate, tank heel water, wash water, sawcut slurry, test water and construction water. c. Sanitary Sewer Discharges 1) Plan shall describe required applications and/or permits from the sanitary sewer system owner or agency having jurisdiction regarding the planned discharge.	

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		a) Outline monitoring and reporting expected to support sanitary sewer discharge, including a sampling and analysis plan required in Paragraph 1.4.J. All monitoring results shall be submitted to the Engineer prior to the end of the Work. **EBMUD Standard Construction Specification 01 35 45, Biological, Cultural, and Paleontological Resource Requirements** *Section 3.1, Protection of Native and Non-Native Protected Trees* (Details as listed under Impact AES-1)	
Impact BIO-3: 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.	PS	**EBMUD Standard Construction Specification 01 35 44, Environmental Requirements** *Section 1.1(B), Site Activities* (Details as listed under Impact AES-1) *Section 1.4(A), Storm Water Management* (Details as listed under Impact BIO-2) *Section 1.4(B), Water Control and Disposal Plan* (Details as listed under Impact BIO-2)	LTS
Impact BIO-4: 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.	PS	**EBMUD Standard Construction Specification 01 35 45, Biological, Cultural, and Paleontological Resource Requirements** *Section 3.2, Protection of Birds Protected Under the Migratory Bird Treaty Act and Roosting Bats* (Details as listed under Impact BIO-1)	LTS
Impact BIO-5: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	PS	**EBMUD Standard Construction Specification 01 35 45, Biological, Cultural, and Paleontological Resource Requirements** *Section 3.1, Protection of Native and Non-Native Protected Trees* (Details as listed under Impact AES-1)	LTS
Cultural Resources			
Impact CUL-2: Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to §15064.5.	PS	**EBMUD Standard Construction Specification 01 35 45, Biological, Cultural, and Paleontological Resource Requirements** *Section 3.3, Protection of Cultural and Paleontological Resources* A. Confidentiality of Information on Cultural and Paleontological Resources 1. In conjunction with Contractor's performance under this contract, the Contractor may obtain information as to the location and/or nature of certain cultural or paleontological resources, including Native American artifacts and remains. This information may be provided to the Contractor by EBMUD or a third party, or may be discovered directly by the Contractor	LTS

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		through its performance under the contract. All such information shall be considered "Confidential Information" for the purposes of this Article. 2. Pursuant to California Government Code Section 6254.10, cultural resource information is protected from public disclosure. The Contractor agrees that the Contractor, its subcontractors, and their respective agents and employees shall not publish or disclose any Confidential Information to any person, unless specifically authorized in advance, in writing by the Engineer. B. Conform to the requirements of statutes as they relate to the protection and preservation of cultural and paleontological resources. Unauthorized collection of prehistoric or historic artifacts or fossils along the Work Area, or at Work facilities, is strictly prohibited. C. Before beginning construction, Contractor construction personnel involved in ground disturbing activities shall attend a cultural and paleontological resources training course provided by EBMUD of up to two hours for site supervisors, foreman, project managers, and non-supervisory contractor personnel. The training program will be completed in person or by watching a video, at an EBMUD designated location, conducted by a qualified archaeologist and/or paleontologist provided by EBMUD, or by EBMUD staff. The program will discuss cultural and paleontological resources awareness within the project work limits, including the responsibilities of Contractor's construction personnel, applicable mitigation measures, confidentiality, and notification requirements. The Contractor is responsible for ensuring that all workers requiring training are identified to EBMUD. Prior to accessing the construction site, or performing site work, all Contractor personnel shall: 1. Sign an attendance sheet provided by the Engineer verifying that all Contractor construction personnel involved in ground disturbing activities have attended the appropriate level of training; have read and understood the contents of the training; have read and understood the contents of the "Confidentiality of Information on Cultural and Paleontological Resources" document, and shall comply with all project environmental requirements. D. In the event that potential cultural or paleontological resources are discovered at the site of construction, the following procedures shall be instituted: 1. Discovery of prehistoric or historic-era archaeological resources requires that all construction activities shall immediately cease at the location of discovery and within 100 feet of the discovery. a. The Contractor shall immediately allow EBMUD to evaluate the find. The Contractor is responsible for stopping work and notifying the Engineer and shall not recommence work until authorized to do so by the Engineer. b. EBMUD will retain a qualified archaeologist to inspect the findings within 24 hours of discovery. If it is determined that the Project could damage a historical resource as defined by CEQA (or a historic property as defined by the National Historic Preservation Act of 1966, as amended), construction shall cease in an area determined by the archaeologist until a management plan has been prepared, approved by the Engineer, and implemented to the satisfaction of the archaeologist (and Native American representative if the resource is prehistoric, who shall be identified by the Native American Heritage Commission [NAHC]). In consultation with the Engineer, the archaeologist (and Native American representative) will determine when construction can resume.	

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		2. Discovery of human remains requires that all construction activities immediately cease at, and within 100 feet of the location of discovery. a. The Contractor shall immediately notify the Engineer who will engage a qualified archaeologist provided by EBMUD to evaluate the find. The Contractor is responsible for stopping work and notifying the Engineer and shall not recommence work until authorized to do so by the Engineer. b. EBMUD will contact the County Coroner, who will determine whether or not the remains are Native American. If the remains are determined to be Native American, the Coroner will contact the Native American Heritage Commission (NAHC). The NAHC will then identify the person or persons it believes to be the most likely descendant from the deceased Native American, who in turn would make recommendations to EBMUD for the appropriate means of treating the human remains and any associated funerary objects. 3. Discovery of paleontological resources requires that all construction activities immediately cease at, and within 100 feet of the location of discovery. a. The Contractor shall immediately notify the Engineer who will engage a qualified paleontologist provided by EBMUD to evaluate the find. The Contractor is responsible for stopping work and notifying the Engineer and shall not recommence work until authorized to do so by the Engineer. b. EBMUD will retain a qualified paleontologist to inspect the findings within 24 hours of discovery. The qualified paleontologist, in accordance with Society of Vertebrate Paleontology guidelines (Society of Vertebrate Paleontology 2010), will assess the nature and importance of the find and recommend appropriate salvage, treatment, and future monitoring and management. If it is determined that construction activities could damage a paleontological resource as defined by the Society of Vertebrate Paleontology guidelines (Society of Vertebrate Paleontology 2010), construction shall cease in an area determined by the paleontologist until a salvage, treatment, and future monitoring and management plan has been prepared, approved by the Engineer, and implemented to the satisfaction of the paleontologist. The Engineer, in consultation with the paleontologist, will determine when construction can resume. E. If EBMUD determines that the find requires further evaluation, at the direction of Engineer, the Contractor shall suspend all construction activities at the location of the find and within a larger radius, as required.	
Impact CUL-3: Disturb any human remains, including those interred outside of dedicated cemeteries.	PS	**EBMUD Standard Construction Specification 01 35 45, Biological, Cultural, and Paleontological Resource Requirements** *Section 3.3, Protection of Cultural and Paleontological Resources* (Details as listed under CUL-2)	LTS

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Energy			
Impact EN-1: Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.	PS	**EBMUD Standard Construction Specification 01 35 44, Environmental Requirements** *Section 3.5, Air Quality Control* (Details as listed under Impact AIR-1)	LTS
Geology, Soils, and Seismicity			
Impact GEO-1: Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: rupture of a known earthquake fault; strong seismic groundshaking; seismic-related ground failure (liquefaction, lateral spreading); or landslides.	PS	**EBMUD Standard Construction Specification 01 81 02, Seismic Design Criteria** *Section 1.1 References:* A. ASCE 7 , American Society of Civil Engineers, Minimum Design Loads for Buildings and Other Structures. *Section 1.2 Related Sections:* A. Section 01 42 19 – Reference Standards B. Section 01 43 11 – Seismic Qualification and Certification C. Section 05 05 19 – Mechanical Anchoring to Concrete and Masonry D. Section 26 05 00 – Common Work Results for Electrical E. Section 26 23 00 – Low Voltage Switchgear F. Section 26 24 19 – Motor Control Centers *Section 1.2 System Description* A. Design Requirements: 1. Architectural elements, mechanical and electrical components, equipment housings and their attachments, supporting structures, and anchorages shall comply with the requirements of ASCE 7, using the following values: a. Design spectral acceleration at short periods, SDS = ___ b. Design spectral acceleration at long periods, SD1 =___ c. Seismic Design Category, [C] [D] [E] [F] d. Component importance Factor, Ip = 1.50 e. Component amplification factor, ap: In accordance with ASCE 7, Tables 13.5-1 and 13.6-1. f. Component response modification factor, Rp: In accordance with ASCE 7, Tables 13.5-1 and 13.6-1. g. Overstrength Factor, Ω: In accordance with ASCE 7, Tables 13.5-1 and 13.6-1 for anchorage in concrete. 2. Do not use friction to resist sliding due to seismic forces.	LTS

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		3. Do not use more than 60 percent of the weight of the mechanical and electrical equipment for designing anchors for resisting overturning due to seismic forces. 4. Do not use more than 60 percent of the weight of the tanks for resisting overturning due to seismic forces. 5. Resist seismic forces through direct bearing on anchors and fasteners. Do not design or provide connections that use friction to resist seismic loads. 6. Anchoring and fastening to concrete and masonry. a. Use cast-in anchors (anchor bolts or welded studs) whenever possible for anchors at connections that resist seismic forces. b. Do not use concrete anchors, flush shells, sleeve anchors, screw anchors, powder actuated fasteners, or other types of post-installed anchors unless indicated on the Drawings or accepted in writing by the Engineer. *Section 1.3 Seismic Qualification and Certification* A. The equipment and all components listed in this specification shall not undergo loss of their intended function after application of the Code prescribed seismic forces as specified in Section 01 43 11. *Section 1.4 Submittals* A. Shop drawings and calculations: Complete shop drawings and seismic calculations. B. Seismic Qualification and Certification shall be verified by an approved calculation that demonstrates the adequacy of the system for seismic forces. This calculation may be based on principles of structural analysis and engineering mechanics, or based on similarity to approved shake table tests as specified in Section 01 43 11. C. Contractor shall submit for review and approval test data or calculations signed and sealed by a Civil or Structural Engineer registered in the State of California to show compliance with the above requirements. **EBMUD Engineering Standard Practice 512.1** Engineering Standard Practice 512.1, Water Main and Services Design Criteria, establishes basic criteria for the design of water pipelines and establishes minimum requirements for pipeline construction materials. **EBMUD Engineering Standard Practice 550.1, Seismic Design Requirements** Engineering Standard Practice 550.1, Seismic Design Requirements, sets forth minimum criteria for the seismic design of new and existing EBMUD facilities which include (but are not limited to) offices, operating centers, water and wastewater treatment plants, water and other liquids storage structures, pumping plants, retaining walls, underground vaults, pipelines, and miscellaneous structures not covered above.	
Impact GEO-2: Result in substantial soil erosion or the loss of topsoil.	PS	**EBMUD Standard Construction Specification 01 35 44, Environmental Requirements** *Section 1.1(B), Site Activities* (Details as listed under Impact AES-1) *Section 1.4(A), Storm Water Management* (Details as listed under Impact BIO-2)	LTS

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Impact Area	Significance Before Practices and Procedures[1]	EBMUD Practices and Procedures[2]	Significance After Practices and Procedures[1]
Impact GEO-3: 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.	PS	**EBMUD Standard Construction Specification 01 35 24, Project Safety Requirements** *Section 1.3(L), Excavation Safety Plan* 1. Section 6705 of the Labor Code requires that the excavation of any trench 5 feet or more in depth shall not begin until the Contractor has received from the Engineer notification of the Engineer's acceptance of the Contractor's detailed plan for worker protection from the hazards of caving ground during the excavation of such trench. a. The plan shall show the details of the design of shoring, bracing, sloping or other provisions to be made for worker protection during such excavation. b. The plan shall meet the requirements of the Construction Safety Orders, Title 8, California Code of Regulations. 2. Contractor shall obtain an excavation permit per Cal/OSHA Title 8, CCR § 341(a)(1). 3. California Government Code § 4216 describes the requirements and procedures for excavation notifications and utility excavation.	LTS
Impact GEO-5: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	PS	**EBMUD Standard Construction Specification 01 35 45, Biological, Cultural, and Paleontological Resource Requirements** *Section 3.3, Protection of Cultural and Paleontological Resources* (Details as listed under Impact CUL-2)	LTS
Greenhouse Gas Emissions			
Impact GHG-1: Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.	PS	**EBMUD Standard Construction Specification 01 35 44, Environmental Requirements** *Section 3.5, Air Quality Control* (Details as listed under Impact AIR-1)	LTS
Impact GHG-2: Conflict with a plan, policy, or regulation adopted for the purpose of reducing GHG emissions.	PS	**EBMUD Standard Construction Specification 01 35 44, Environmental Requirements** *Section 3.5, Air Quality Control* (Details as listed under Impact AIR-1)	LTS
Hazards and Hazardous Materials			
Impacts HAZ-1 and HAZ-2: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving	PS	**EBMUD Standard Construction Specification 01 35 24, Project Safety Requirements** *Section 1.3(B), Project Health and Safety Plan* 1. Submit a Project Health & Safety Plan for the Work to be performed prior to start of the Notice to commence field work (NTCFW) and/or prior to any limited notice to commence field work (LNTCFW). 2. The Project Health & Safety Plan shall implement applicable Title 8, California Code of Regulations for the work performed. *Section 1.3(K), Electrical Safety Plan* 1. Submit a detailed electrical safety plan that is in accordance with NFPA 70E Article 110. The plan shall include at a minimum:	LTS

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Impact Area	Significance Before Practices and Procedures[1]	EBMUD Practices and Procedures[2]	Significance After Practices and Procedures[1]
the likely release of hazardous materials into the environment.		a. Electrical hazard potential b. Electrical safety program principles per Annex E.1 of NFPA 70E c. Electrical safety program controls per Annex E.2 of NFPA 70E d. Electrical safety program procedures per Annex E.3 of NFPA 70E e. Risk assessment and risk control procedures per Annex F of NFPA 70E f. Job briefing and planning checklists per Annex I of NFPA 70E g. Auditing effectiveness of project electrical safety program *Section 1.3 (L) Excavation Safety Plan* (Details as listed under GEO-3) **EBMUD Standard Construction Specification 01 35 44, Environmental Requirements,** *Section 1.1(B), Site Activities* (Details as listed under AES-1) *Section 1.4(A), Storm Water Management* (Details as listed under BIO-2) *Section 1.4(B), Water Control and Disposal Plan* (Details as listed under BIO-2) *Section 1.4(C), Waste Management* 1. Prepare a Waste Management Plan and submit a copy of the plan for the Engineer's acceptance prior to start of work (except for water wastes which shall be addressed in the Water Control and Disposal Plan). The Waste Management Plan shall address all Construction and Demolition Waste, universal wastes, Hazardous Wastes, Excavation Soils, and any other solid debris intended to be removed from the project site(s). a. Identify each type of material that will be generated during the project for disposal, recycling, salvage, or other management and estimate the volume/weight of each. b. Identify how the Contractor will handle, transport, dispose of, or otherwise divert each type of material required to be removed under this contract in a safe, appropriate, and lawful manner in compliance with all applicable regulations of local, state, and federal agencies having jurisdiction over the removed materials. c. Specify rules, regulations, and ordinances in the plan required by local agencies having jurisdiction over the handling, transportation, and disposal of waste. At a minimum, the following local rules, regulations or ordinances shall be followed: d. Identify diversion goals for all Construction and Demolition Wastes generated during the project. The specified diversion goals shall meet the minimum requirements of the local ordinances in the City/County/jurisdiction where each project site is located. e. Identify any onsite or offsite soil reuse or recycling but note the limitations on this practice below. 1) Excavation Soils shall not be reused or recycled without explicit approval from the Engineer. Do not assume approval for any reuse of soils. Any proposed reuse shall be initially discussed with the Engineer for evaluation. If soil reuse is planned onsite or offsite, include a Soil Reuse Plan within the Waste Management submittal outlining sites and specific locations where soil will be reused and the estimated volumes of soil to be used at each site. Necessary sampling and analytical work shall be included in the Sampling and Analytical Plan submittal in Paragraph 1.4.J1.4.I.	

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Impact Area	Significance Before Practices and Procedures[1]	EBMUD Practices and Procedures[2]	Significance After Practices and Procedures[1]
		2) Soil reuse is not allowed in excavations for EBMUD drinking water pipelines. 3) Soil reuse is not allowed at sites with land use covenants or other site restrictions. 4) Notwithstanding items 2 and 3 above, soil reuse may be allowed in other circumstances as outlined below: a) Soil may be placed in the same trench or excavation it came from on EBMUD property if no evidence of contamination (e.g. oil, sheen, chemical odors, discoloration, etc.) is found in the excavated soil. b) Soil may be sent to offsite reuse facilities with published contaminant acceptance criteria when: i) Offsite facility is on EBMUD-Approved Disposal Facility list ii) Offsite facility has regulatory approval to accept soil iii) Contractor tests soil for acceptability at facility iv) Contractor submits test results and approval of facility receiving soil for reuse f. Include a list of recycling facilities and processing facilities that will be receiving recyclable or recoverable materials, including, but not limited to concrete, asphalt, and metals. g. Identify materials that are not recyclable or not recovered which will be disposed of in a landfill (or other means acceptable by the State of California and local ordinance and regulations). List the permitted landfill, or other permitted disposal facilities, which will be accepting the disposed waste materials. All landfills, hazardous waste, and universal waste disposal sites shall be approved for use by the Engineer. Engineer will provide a list of approved facilities. h. Identify how the Contractor will comply with DTSC Alternative Management Strategies (AMS) when handling and disposing of TWW in compliance with Health and Safety Code Section 25230. i. Plan should state that TWW records demonstrating proper management of TWW shall be submitted to the Engineer within 5 work days of off-haul. j. Describe planned sampling and analysis for characterizing wastes or the Sampling and Analysis Plan below in Paragraph 1.4.J. 2. The following additional waste management provisions shall be included in the Waste Management Plan to demonstrate compliance with requirements of local agencies having jurisdiction over the handling, transportation, and disposal of waste. a. Include a good faith quantity estimate of each type of Construction and Demolition Waste that would be generated if no diversion methods were implemented. Submit estimate with calculations based on weight of each material. The following materials are subject to the estimate requirement: 1) Asphalt 2) Concrete 3) Aggregates	

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		4) Brick, masonry, clay products, and ceramic tile 5) Excavation Soils 6) Wood products, including clean dimensional wood, palette wood, plywood, OSB, and particleboard 7) Metals, including banding, ductwork, flashing, piping, rebar, steel, iron, galvanized sheet steel, stainless steel, aluminum, copper, zinc, lead, brass and bronze 8) Plant and tree trimmings (may be included in wood products if accepted by recycling service) 9) Cardboard, paper products, and packaging 10) Treated Wood Waste 11) Drywall 12) Mixed waste, including, but not necessarily limited to the following: a) Beverage containers b) Insulation c) Roofing d) Glass, excluding that used for containers e) Gypsum board f) Acoustical ceiling materials g) Plastics, including ABS, PVC, and piping h) Latex paint i) Other materials b. Specify the haulers that will be used to transport or haul waste to landfills and disposal/reuse/recycling sites. c. Include an example of a waste log or other tracking mechanism that will clearly show each load and its destination. The record shall clearly distinguish between anything sent to landfill or recycling/reuse or salvage. 1) Include in log the type of load, load weight, name of hauling service, recycling service or landfill, and date accepted by recycling service or by landfill (or other service). d. Submit copies of any submittals to local agencies required by their local ordinance. This includes permit applications, Waste Reduction and Recycling Plans, Construction and Demolition Summary Reports, or other similar documents. The permit application and Waste Reduction and Recycling Plan shall be submitted as an Appendix to the Waste Management Plan when possible. 3. For any proposed facility that is not on EBMUD-approved disposal list, submit permission to reuse, recycle, reclaim, or dispose of material from the site owner along with any other information needed by EBMUD to evaluate the acceptability of the proposed reuse, recycling, or disposal site and obtain acceptance of the Engineer prior to removing any material from the project site.	

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Impact Area	Significance Before Practices and Procedures[1]	EBMUD Practices and Procedures[2]	Significance After Practices and Procedures[1]
		4. All information pertinent to the characterization of the material or waste shall be disclosed to EBMUD and the reuse, recycling, reclamation, or disposal facility. Submit copies of any profile forms and/or correspondence between the Contractor and the reuse, recycling, reclamation, or disposal facility. *Section 1.4(E), Spill Prevention and Response Plan* 1. Submit plan detailing the means and methods for preventing and controlling the spilling of known hazardous substances used on the jobsite or staging areas. a. Include a list of the hazardous substances proposed for use or generated by the Contractor on site, including petroleum products. b. Define measures that will be taken to prevent spills, monitor hazardous substances, and provide immediate response to spills. c. Include provisions for notification of the Engineer or alternate contact and appropriate agencies including phone numbers; spill-related worker, public health, and safety issues; spill control, and spill cleanup. d. Map showing hazardous materials project-related storage locations, names of the hazardous materials, and volumes/quantities. e. Submit a Safety Data Sheet (SDS) for each hazardous substance proposed to be used prior to delivery of the material to the jobsite. *Section 1.4(I), Waste Disposal Records* 1. Copies of waste management and disposal records including bills of lading, manifests, weight tickets, and receipts from waste management facilities shall be submitted to the Engineer. This provision applies to Hazardous Wastes, universal wastes, treated wood wastes, solid wastes disposed at landfills, and radioactive wastes. 2. Hazardous Waste Manifests a. Use the "Uniform Hazardous Waste Manifest", EPA form 8700-22. Contractor shall prepare and Engineer will review all hazardous waste manifests for acceptability prior to use. b. Submit the "Generator's Initial Copy" and a legible photocopy of the first page of hazardous waste manifests, land disposal restriction forms, or other documentation required by applicable regulations governing transport and disposal of Hazardous Wastes for disposal of hazardous substances within 5 days of off haul. 3. TWW Records a. Submit all disposal records to the Engineer within 5 work days of off-haul. b. Records shall include: 1) Name and address of the TWW facility to which the TWW was sent 2) Estimated weight of TWW, or the weight of the TWW as measured by the receiving TWW facility 3) EPA ID (for quantities greater than 10,000 pounds) 4) Date of the shipment of TWW.	

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		EBMUD Standard Construction Specification 02 82 13, Asbestos Control Activities *Section 1.1, Compliance and Intent* (Details as listed under Impact AIR-1) *Section 1.5, Submittals (Pre-Job)* (Details as listed under Impact AIR-1) **EBMUD Standard Construction Specification 02 83 13, Lead Hazard Control Activities** *Section 1.1, Compliance And Intent* A. Furnish all labor, materials, facilities, equipment, services, employee training and testing, permits, and agreements necessary to perform the lead removal in accordance with these specifications and with the latest regulations from the U.S. Environmental Protection Agency (EPA), the Occupational Safety and Health Administration (OSHA), the Air Quality Management District with authority over the project, the Cal/EPA Department of Toxic Substance Control, the California Occupational Safety and Health Administration (Cal/OSHA), and other federal, state, county, and local agencies. Whenever there is a conflict or overlap of the above references, the most stringent provision is applicable. B. During demolition procedures, the Contractor shall protect against contamination of soils, water, adjacent buildings and properties, and the airborne release of hazardous materials and dusts. The costs associated with the implementation of controls will be incurred by the Contractor. C. Any information developed from exploratory work done by EBMUD and any investigation done by the Contractor to acquaint himself with available information will not relieve the Contractor from the responsibility of properly estimating the difficulty or cost of successfully performing the work. EBMUD is not responsible for any conclusions or interpretations made by the Contractor based on the information made available by EBMUD or EBMUD's representative. D. Hazardous materials uncovered during the demolition activities shall be disposed of in an approved manner complying with all applicable federal, state, and local regulations. Appropriate waste manifests shall be furnished to the Engineer as per Section 01 35 44 – Environmental Requirements. Materials are conveyed to the Contractor "as is," without any warranty, expressed or implied, including but not limited to, any warranty to marketability or fitness for a particular purpose, or any purpose. *Section 1.4, Submittals (Pre-Job)* A. Site safety plan: The Contractor shall provide a site safety plan prior to project initiation as specified in Section 01 35 24 – Project Safety Requirements. B. Lead Demolition Plan: Lead-containing coating handling, engineering control, removal, and disposal procedures C. Cal/OSHA Lead Work Pre-Job Notification, if required D. Submittal of worker documentation for employees used on the job 1. Lead-Containing Coating Demolition Work: All Contractor's supervisors and workers performing lead-containing coating work shall meet the requirements of the California Department of Health Services (DHS) lead-related construction interim certification (17 CCR 350001). E. Licenses: Submit copies of state and local licenses and evidence of Cal-OSHA certification and permits necessary to perform the work of this contract.	

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		F. Submit name and Environmental Laboratory Accreditation Program Certificate number of laboratory that will test samples collected during air monitoring. See Article 3.2 below.
		EBMUD Engineering Standard Practice 514, Identifying Buried Conflicts
		Purpose: to provide pipeline project guidelines for the investigation needed to identify existing underground utilities, and to establish a uniform approach for site reconnaissance of existing buried conflicts, such as active and abandoned utilities. Minimum steps required to identify existing utilities are also provided. Efforts made during the planning, design, and pre-construction phases to identify existing buried conflicts should lessen the potential for subsequent impacts during construction.
		EBMUD Procedure 711, Hazardous Waste Removal
		Purpose: To define hazardous waste and establish removal responsibilities for hazardous wastes generated at EBMUD facilities.
		Definitions:
		• Waste: Any solid, liquid, or contained gaseous material that is (1) disposed of, recycled, or incinerated, or (2) accumulated, stored, or treated before or in lieu of being disposed of, recycled, or incinerated.
		• Hazardous Waste: Any waste that meets the criteria for identification of a hazardous waste as set forth in California Code of Regulations, Title 22, Section 66261.3. A waste may be hazardous if it exhibits one or more of the characteristics of toxicity, reactivity, corrosivity, or ignitability, or if it is included on a specific list of wastes the U.S. Environmental Protection Agency (EPA) and/or California Department of Toxic Substances Control (DTSC) has determined are hazardous because the waste poses substantial present or potential hazards to human health or the environment.
		• Hazardous Waste Manifest: EPA's hazardous waste manifest is a document (paper or electronic) designed to track hazardous waste from the moment it leaves the facility where it was generated, until it reaches the off -site waste management facility that will store, treat and/or dispose of the hazardous waste. The manifest is what ties the generator to the waste from "cradle to grave".
		• These definitions are instructive but not comprehensive. State and federal legal definitions of hazardous waste are complex and subject to exceptions. Waste sample collection, analyses, and data comparison with Title 22 action levels may be necessary to determine if a waste is a hazardous waste.
		Responsibilities:
		• The Work Unit Supervisor or Project Manager (or his/her designee)
		  o Identifies hazardous wastes and/or wastes requiring a determination for hazardous or non-hazardous classification and informs the Environmental Compliance Section (ECS).
		  o Contacts ECS staff to coordinate waste disposal, reuse, or recycling.
		  o Provides all known information about the waste to the ECS.
		  o Labels, stores, inspects, and maintains the waste inventory records as directed by the ECS.
		  o Ensures that the waste is available for transportation as scheduled through the ECS.	

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Impact Area	Significance Before Practices and Procedures[1]	EBMUD Practices and Procedures[2]	Significance After Practices and Procedures[1]
		○ Helps the ECS coordinate interim storage of non-routine hazardous waste while an appropriate disposal method is being determined. ○ Reviews, with assistance from the ECS, Hazardous Waste Manifests (Manifest) prepared by haulers, to confirm the accuracy of information. ○ Signs the Manifest, if authorized and trained by the ECS. ○ For paper manifests, sends the signed Generator copy of the Manifest to the ECS within seven (7) days of the off-haul date, unless the ECS has an agreement that the transporter sends the Generator copy directly to the ECS. ○ Provides the ECS with a budget unit number and a job number. • Environmental Compliance Section ○ Coordinates the appropriate steps to determine if the waste is hazardous. ○ Determines, with the help of the relevant department, what analyses are required to classify the waste. ○ Works with the EBMUD Laboratory and/or retained hazardous and nonhazardous waste management services contractor to analyze the waste or to assist in identifying other laboratories certified to perform the analyses. ○ Reviews analytical data to characterize the waste. ○ Obtains and provides EPA generator identification number. ○ Identifies and/or manages companies providing hazardous waste management services (sampling, hauling, and disposal) depending on EBMUD departmental needs. ○ Identifies and approves the waste disposal, reuse, or recycling method; additionally identifies disposal, reuse, or recycling facility. ○ Obtains hazardous waste acceptance documents (e.g., waste profile) from the disposal facility and provides to generating department to be included with hazardous waste shipment, as needed. ○ Provides training and guidance to unit or project staff on hazardous waste handling, disposal and Manifest completion requirements. ○ Reviews completed and signed Manifests prior to submittal to DTSC. ○ Tracks Manifest in dedicated database, and generates reports and summaries as needed. ○ Completes hazardous waste reporting requirements including , but not limited to, ○ Biennial Reports, Waste Minimization Plans, and hazardous waste fee and tax forms. ○ Provides additional information as needed.	
Impact HAZ-3: Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.	PS	**EBMUD Standard Construction Specification 01 35 24, Project Safety Requirements** *Section 1.3(B), Project Safety and Health Plan* (Details as listed under Impact HAZ-1 and HAZ-2) *Section 1.3(E), Emergency Action Plan* E. Submit an Emergency Action Plan that prepares responses to employee accident/injury events, or any serious unplanned event (e.g.: utility break, fire, structure collapse, etc.) that requires notifying	LTS

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Impact Area	Significance Before Practices and Procedures[1]	EBMUD Practices and Procedures[2]	Significance After Practices and Procedures[1]
		any first aid provider or responsive response agencies (e.g.: fire departments, utility agencies, rescue teams, etc.) 1. Plan shall include a map to medical facilities that are capable of caring for worker accidents & injury. 2. Plan shall include emergency contact numbers. *Section 3.2(G), Fire Prevention and Protection* G. Fire Prevention and Protection 1. Perform all Work in a fire safe manner and supply and maintain on the site adequate fire fighting equipment capable of extinguishing incipient fires. Comply with applicable federal, local, and state fire prevention regulations. Where these regulations do not apply, applicable parts of the National Fire Prevention Standards for Safeguarding Building Construction Operations (NFPA No. 241) shall be followed. 2. A long-handled, round-point shovel, or a fire extinguisher shall be kept at an accessible (unlocked) location on the construction site at all times. 3. Earthmoving and portable equipment with internal combustion engines shall be equipped with a spark arrestor to reduce the potential for igniting a wildfire. Such equipment shall be maintained to ensure proper functioning of spark arrestor. 4. For all work occurring between April 1 and December 1, or any other periods during which a high fire danger has been identified: a. Equipment that could produce a spark, fire, or flame shall not be used within 10 feet of any flammable materials. b. Portable tools powered by gasoline-fueled internal combustion engines shall not be used within 25 feet of any flammable materials. 5. Vegetation management for fire prevention and protection a. Prior to and during construction: 1) Create and maintain a defensible space (100 feet or to EBMUD property boundary, whichever is shorter) around construction site, construction ingress and egress sites through landscaping, mowing, disking, and/or spraying dry brush or native grasses to a height of 4-inches or less. 2) Remove dead trees within 100-feet of construction site. 3) Limb up trees within 100 feet of construction site so that no leafy foliage, twigs or branches are within 5-feet of the ground. To maintain tree health, tree limbing shall not remove more than 25 percent of a tree canopy within one growing season. 4) Ensure and maintain 5-feet of vertical clearance between roof surfaces and portions of trees overhanging all structures within construction site, and keep roofs free of leaves, needles, twigs, and other combustible matter. To maintain tree health, tree limbing shall not remove more than 25 percent of a tree canopy within one growing season. 5) Keep all overhanging trees, shrubs, and other vegetation, or portions thereof, free of dead limbs, branches, and other combustible matter.	

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		b. Neatly stack all combustible materials away from structures within construction site and have all combustible growth cleared 15-feet around the stack. 6. During construction, maintain an unobstructed horizontal clearance at access drives of not less than the required width of the access drives, and an unobstructed vertical clearance of not less than 13 feet 6 inches above all roadways.	
Hydrology and Water Quality			
Impact HYD-1: Violate any water quality standards or waste discharge requirements, or otherwise substantially degrade water quality.	PS	**EBMUD Standard Construction Specification 01 35 44, Environmental Requirements** *Section 1.1(B), Site Activities* (Details as listed under Impact AES-1) *Section 1.4(A), Storm Water Management* (Details as listed under Impact BIO-2) *Section 1.4(B), Water Control and Disposal Plan* (Details as listed under Impact BIO-2) *Section 1.4(E), Spill Prevention and Response Plan* (Details as listed under Impact HAZ-1 and HAZ-2) **EBMUD Standard Construction Specification 01 74 05, Cleaning** (Details as listed under Impact AES-1) **EBMUD Procedure 711, Hazardous Waste Removal** (Details as listed under Impact HAZ-1 and HAZ-2	LTS
Impact HYD-3: 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 result in substantial erosion or siltation on- or off-site, substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site, or 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.	PS	**EBMUD Standard Construction Specification 01 35 44, Environmental Requirements** *Section 1.1(B), Site Activities* (Details as listed under Impact AES-1) *Section 1.4(A), Storm Water Management* (Details as listed under Impact BIO-2) *Section 1.4(B), Water Control and Disposal Plan* (Details as listed under Impact BIO-2)	LTS

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Impact HYD-4: Conflict with or obstruct implementation of a Water Quality Control Plan or Sustainable Groundwater Management Plan.	PS	**EBMUD Standard Construction Specification 01 35 44, Environmental Requirements** *Section 1.4(A), Storm Water Management* (Details as listed under Impact BIO-2)	LTS
Noise and Vibration			
Impact NOI-1: Result in the 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.	PS	**EBMUD Standard Construction Specification 01 14 00, Work Restrictions** *Section 1.7, Construction Noise* A. Noise-generating activities greater than 90 dBA (impact construction such as concrete breaking, concrete crushing, tree grinding, etc) shall be limited to the hours of 7 a.m. and 7 p.m., Monday through Friday. **EBMUD Standard Construction Specification 01 35 44, Environmental Requirements** *Section 1.4(G), Noise Control and Monitoring Plan* 1. Submit a plan detailing the means and methods for controlling and monitoring noise generated by construction activities, including demolition, alteration, repair or remodeling of or to existing structures and construction of new structures, as well as by items of machinery, equipment or devices used during construction activities on the site. The plan shall detail the equipment and methods used to monitor compliance with the plan. *Section 3.8, Noise Control* A. Comply with sound control and noise level rules, regulations, and local ordinances and in the CEQA documents which apply to any work performed pursuant to the contract. Noise-generating activities shall be limited to the hours specified in Section 01 14 00. B. Take appropriate measures, including muffling of equipment, selecting quieter equipment, erecting noise barriers, modifying work operations, and other measures as needed to bring construction noise into compliance. C. Each internal combustion engine, used for any purpose on the job or related to the job, shall be equipped with a muffler of a type recommended by the manufacturer. D. Use the best available noise control techniques (including mufflers, intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds) for all equipment and trucks, as necessary. E. Truck operations (haul trucks and concrete delivery trucks) shall be limited to the daytime hours specified in Section 01 14 00. F. Stationary noise sources (e.g., chippers, grinders, compressors) shall be located as far from sensitive receptors as possible. Enclosure opening or venting shall face away from sensitive receptors. Enclosures shall be designed by a registered engineer regularly involved in noise control analysis and design. G. If impact equipment (e.g., jack hammers, pavement breakers, rock drills etc.) is used during project construction, Contractor is responsible for taking appropriate measures, including but not limited to the following:	SU

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		1. Hydraulically or electric-powered equipment shall be used wherever feasible to avoid the noise associated with compressed-air exhaust from pneumatically powered tools. However, where use of pneumatically powered tools is unavoidable, an exhaust muffler on the compressed-air exhaust shall be used. External jackets on the tools themselves shall be used, where feasible. Quieter procedures, such as drilling rather than impact equipment, shall be used whenever feasible. It is the Contractor's responsibility to implement any measures necessary to meet applicable noise requirements. 2. Impact construction including jackhammers, hydraulic backhoe, concrete crushing/recycling activities, vibratory pile drivers etc. shall be limited to the daytime hours specified in Section 01 14 00. 3. Erect temporary noise barriers or noise control blankets around the construction site, particularly along areas adjacent to residential buildings. 4. Limit the noisiest phases of construction to 10 work days at a time, where feasible. 5. Notify neighbors/occupants within 300 feet of project construction at least thirty days in advance of extreme noise generating activities about the estimated duration of the activity. 6. Noise Monitoring shall be conducted periodically during noise generating activities. Monitoring shall be conducted using a precision sound-level meter that is in conformance with the American National Standards Institute (ANSI) Standard S1.4, Specification for Sound Level Meters. Monitoring results shall be submitted weekly to the Engineer. **EBMUD Procedure 600** (Details as listed under Impact AIR-1)	
Impact NOI-2: Result in the generation of excessive groundborne vibration or groundborne noise levels.	PS	**EBMUD Standard Construction Specification 01 35 44, Environmental Requirements** *Section 1.4(H), Vibration Control and Monitoring Plan* 1. Submit a plan detailing the means and methods for controlling and monitoring surface vibration generated by demolition and other work on the site. The plan shall detail the equipment and methods used to monitor compliance with the plan. *Section 3.7, Vibration Control* A. Limit continuous surface vibration to no more than 0.5 in/sec Peak Particle Velocity (PPV), measured at the nearest residence or other sensitive structure. See Section 01 14 00.	LTS
Transportation			
Impact TRA-1: Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.	PS	**EBMUD Standard Construction Specification 01 32 36, Video Monitoring and Documentation** *PART 1 - General* *1.1 Summary* A. Section includes: 1. Audio-video documentation utilizing digital recording of surface features, supplemented by photography, that may be taken along the entire length of the project and may include work and storage areas, adjacent properties, and/or intersecting roadways.	PS

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Impact Area	Significance Before Practices and Procedures[1]	EBMUD Practices and Procedures[2]	Significance After Practices and Procedures[1]
		a. Prior to audio-video recording of the project, all areas to be inventoried shall be investigated visually with notations made of items not readily visible by audio-video recording or photographic methods. B. Related sections: 1. Section 01 11 00 – Summary of Work 2. Section 01 31 23.10 – Web-based Construction Document Management 3. Section 01 33 00 – Submittal Procedures *1.2 Site Survey Audio-Video Recording Requirements* A. The Contractor shall employ a qualified videographer, experienced in taking properly documented and annotated video to perform the Pre-Construction Site Survey, which shall be completed within 20 days after the issuance of the Notice to Proceed. The Pre-Construction Site Survey shall be completed and accepted prior to EBMUD issuance of the Notice to Commence Field Work (NTCFW). B. Pre-Construction Site Survey: The Contractor shall perform a Pre-Construction Site Survey of: 1. The project alignment 2. Proposed equipment and material staging areas 3. Access and haul routes to be utilized during construction (San Luis Road between Casa Way and Larkey Lane and on Larkey Lane between San Luis Road and Alfred Avenue), C. Prior to commencement of the Pre-Construction Site Survey recording, the Contractor shall notify the Engineer in writing within 48 hours of the recording. EBMUD will provide a designated representative to accompany and observe audio-video recording operations. Audio-video recording completed without an EBMUD Representative present will be unacceptable unless specifically authorized in writing and in advance by EBMUD. D. Provide a copy of the Pre-Construction Site Survey to EBMUD for review and comment. The Survey shall include all audio-video recordings, photography, annotations and all documentation. If the Engineer determines that critical areas are missing from the survey, the Contractor shall provide additional recording and documentation of the requested area and locations. Post-Construction Site Survey: The Contractor shall perform a Post-Construction Site Survey of the same areas recorded in the Pre-Construction Site Survey. The Engineer will review post-construction survey findings with the Contractor and develop a complete listing of project site restoration requirements to be accomplished by the Contractor. Prior to commencement of Post-Construction Site Survey recording, the Contractor shall notify the Engineer in writing within 48-hours of the recording. EBMUD will provide a designated representative to accompany and observe audio-video recording operations. Audio-video recording completed without an EBMUD Representative present will be unacceptable unless specifically authorized in writing and in advance by EBMUD. F. The Contractor shall be responsible for repairing any damage or defects not documented as existing prior to construction. *Part 2 - Products* *2.1 Audio-Video Recording*	

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Impact Area	Significance Before Practices and Procedures[1]	EBMUD Practices and Procedures[2]	Significance After Practices and Procedures[1]
		A. The resolution of the video shall be 1080p or higher. B. The format of the site survey shall be a digital audio-video file in mp4, avi, or mpg with narrative. C. Each recording shall contain the following information and arrangement at the beginning as a title screen: 1. "EBMUD" 2. PROJECT NAME 3. PROJECT NUMBER 4. CONTRACTOR: (Name of Contractor) 5. DATE: (When video was recorded) 6. VIDEO BY: (Firm Name of Videographer) 7. LOCATION: (Description of Location(s), View(s), Direction of Travel) D. Information appearing on the video recording must be continuous and run simultaneously by computer generated transparent digital information. No editing or overlaying of information at a later date will be acceptable. E. Time must be accurate and continuously displayed on the recording. F. Written documentation must coincide with the information on the recordings so as to make easy retrieval of locations at a later date. G. The video recording system shall have the capability to transfer individual frames of video electronically into hard copy prints or photographic negatives. H. The finalized audio-video recordings shall be saved on appropriate physical media (e.g. USB flash drive, DVD) viewable on computer with standard media player software and shall contain a Table of Contents outlining the file folder hierarchy and description of files included. I. The physical media shall be labeled with the following information: 1. "EBMUD" 2. Project Name and Number 3. Date of Recording 4. Contractor Name J. Ownership of Recordings: All audio-video recordings will become the property of EBMUD. K. Any portion of the recorded coverage deemed unacceptable by EBMUD shall be re-taped by the Contractor at no additional cost to EBMUD. *Part 3 - Execution* *3.1 Views and Narrative Required* A. Prior to conducting the survey, the Contractor shall discuss with the Engineer to establish specific areas that must be recorded. If surveying of these areas requires private property access, the Contractor shall obtain written permission from the property owner(s), which shall be submitted to the Engineer.	

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Impact Area	Significance Before Practices and Procedures[1]	EBMUD Practices and Procedures[2]	Significance After Practices and Procedures[1]
		B. [Coverage shall include all surface features within 100-feet of the limits of Work to be used by the Contractor and shall be supported by appropriate audio description made simultaneously with video coverage.] Such coverage shall include, but not be limited to, existing driveways, sidewalks, pavement, curbs, gutters, ditches, berms, roadways, landscaping, trees, culverts, headwalls, and retaining walls, fencing, gates, handrails, signage, manholes, vaults, utility boxes, lighting, traffic signals and controls, loop detectors, landscaping, irrigation controllers, street furniture, equipment, appurtenances, structures, and other existing features etc. located within the work zone. Video coverage shall extend to the maximum height of all structures within the work zone. D. [When the Work includes construction of water, wastewater, recycled, or other lines in the vicinity of any street or road, the Contractor shall take digital audio-video recordings of existing conditions along both sides of the street or road.] E. All video recording shall be done during times of good visibility. No outside recording shall be done during periods of visible precipitation, mist, fog, or when the ground area is covered with snow, standing water, leaves or debris, unless otherwise authorized by the Engineer. F. Sufficient sunlight shall be present to properly illuminate the subjects of recording and to produce bright, sharp video recordings of those subjects. Shadowing and glare shall be avoided. In order to produce the proper detail and perspective, adequate auxiliary lighting shall be provided to fill in shadow areas caused by trees, utility poles, road signs and other such objects, as well as other conditions requiring artificial illumination. . The camera shall be firmly stabilized such that transport of the camera during the recording process will not cause an unsteady picture. H. The average rate of speed in the general direction of travel of the conveyance used during taping shall not exceed 60-feet per minute. Panning rates and zoom-out rates shall be controlled sufficiently so that playback will produce adequate clarity of the object and features of interest being viewed. I. When conventional wheeled vehicles are used as conveyances for the recording, the distance from the camera lens to the ground shall be such as to ensure proper perspective. In instances where tape coverage will be required in areas not accessible to conventional wheeled vehicles, such coverage shall be obtained by walking or by special conveyance approved by the Engineer but with the same requirements for tape quality and content as specified herein, except as may be specifically exempted by the Engineer. J. When detail of areas in question are unable to be captured on video, high-resolution digital photography of adequate resolution shall be used to supplement video, with written annotations and descriptions. K. The video recorder shall take special efforts to point out and provide audio commentary on cracking, breakage, damage, settlement and other defects in existing features. Restrict commentary to factual descriptions of all features without commentary on causation. **EBMUD Standard Construction Specification 01 55 26, Traffic Regulation** *Section 1.1, Summary* A. Section includes: Comply with the traffic regulation requirements as specified herein.	

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Impact Area	Significance Before Practices and Procedures[1]	EBMUD Practices and Procedures[2]	Significance After Practices and Procedures[1]
		B. Where specific requirements are not detailed herein or in permits, comply with the requirements of the most current version of the California Manual on Uniform Traffic Control Devices (MUTCD). C. All proposed street closures shall be clearly identified in the Traffic Control Plan (TCP) and shall conform to the section "Traffic Control Devices" below. Construction area signs for street closure and detours shall be posted a minimum of forty-eight (48) hours prior to the commencement of street closure. Contractor shall maintain safe access around the project limit at all times. Street closures shall be limited to those locations indicated on the construction documents. D. Related requirements specified elsewhere: 1. Section 01 14 00 – Work Restrictions *Section 1.2, Submittals* A. Submit at least 15 calendar days prior to work a detailed traffic control plan, that is approved by all agencies having jurisdiction and that conforms to all requirements of these specifications and the most recently adopted edition of the MUTCD. Traffic Control Plan shall include: 1. Circulation and detour plans to minimize impacts to local street circulation. Use haul routes minimizing truck traffic on local roadways to the extent possible. 2. A description of emergency response vehicle access. If the road or area is completely blocked, preventing access by an emergency responder, a contingency plan must be included. 3. Procedures, to the extent feasible, to schedule construction of project elements to minimize overlapping construction phases that require truck hauling. 4. Designated Contractor staging areas for storage of all equipment and materials, in such a manner to minimize obstruction to traffic. 5. Locations for parking by construction workers. *Section 2.1, Traffic Control Devices* A. Traffic signs, flashing lights, barricades and other traffic safety devices used to control traffic shall conform to the requirements of the most recently adopted edition of the MUTCD and the agency having jurisdiction. 1. Portable signals shall not be used unless permission is given in writing by the agency having jurisdiction. 2. Warning signs used for nighttime conditions shall be reflectorized or illuminated. "Reflectorized signs" shall have a reflectorized background and shall conform to the current State of California Department of Transportation specification for reflective sheeting on highway signs. *Section 3.1, General* A. Except where public roads have been approved for closure, traffic shall be permitted to pass through designated traffic lanes with as little inconvenience and delay as possible. B. Install temporary traffic markings where required to direct the flow of traffic. Maintain the traffic markings for the duration of need and remove by abrasive blasting when no longer required.	

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Impact Area	Significance Before Practices and Procedures[1]	EBMUD Practices and Procedures[2]	Significance After Practices and Procedures[1]
		C. Convenient access to driveways and buildings in the vicinity of work shall be maintained as much as possible. Temporary approaches to, and crossing of, intersecting traffic lanes shall be provided and kept in good condition. D. When leaving a work area and entering a roadway carrying public traffic, the Contractor's equipment, whether empty or loaded, shall in all cases yield to public traffic. E. Provide temporary signs as required by the traffic control plan and remove signs when no longer required. F. Haul routes for each construction phase shall be provided to all trucks serving the site during the construction period. G. For complete road closures, immediate emergency access to be provided if needed to emergency response vehicles. H. A minimum of twelve (12) foot travel lanes must be maintained unless otherwise approved. *Section 3.2, Alternating One-Way Traffic* A. Where alternating one-way traffic has been authorized, the following shall be posted at each end of the one-way traffic section at least one week prior to start of work: 1. The approximate beginning and ending dates that traffic delays will be encountered. 2. The maximum time that traffic will be delayed. B. The maximum delay time shall be approved by the agency having jurisdiction. *Section 3.3, Flagging* A. Provide flaggers to control traffic where required by the approved traffic control plan. 1. Flaggers shall perform their duties and shall be provided with the necessary equipment in accordance with the current "Instructions to Flaggers" of the California Department of Transportation. 2. Flaggers shall be employed full time on traffic control and shall have no other duties. *Section 3.4, Temporary Traffic Control* A. All traffic control devices shall conform to the latest edition of the MUTCD, and as amended by the latest edition of the MUTCD California supplement. Electronic signage board with changeable message shall be placed on a street in both directions 2 weeks in advance. B. The Contractor shall replace within 72 hours, all traffic signal loop detectors damaged during construction. Any work that disturbs normal traffic signal operations and ensure proper temporary traffic control (lane shifts, lane closures, detours etc.) shall be coordinated with the agency having jurisdiction, at least 72 hours prior to commencing construction. C. A minimum of twelve (12) foot travel lanes must be maintained unless otherwise approved. D. Access to driveways will be maintained at all times unless other arrangements are made. E. All traffic control devices shall be removed from view when not in use. F. Before leaving a work area, ensure the area is left orderly. Trenches must be backfilled or plated during non-working hours.	

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Impact Area	Significance Before Practices and Procedures[1]	EBMUD Practices and Procedures[2]	Significance After Practices and Procedures[1]
		G. Sidewalks for pedestrians will remain open if safe for pedestrians. Alternate routes and signing will be provided if pedestrian routes are to be closed.	
Impact TRA-3: Substantially increase hazards due to a design feature or incompatible uses.	PS	**EBMUD Standard Construction Specification 01 55 26, Traffic Regulation** (Details as listed under Impact TRA-1)	PS
Impact TRA-4: Result in inadequate emergency access..	PS	**EBMUD Standard Construction Specification 01 55 26, Traffic Regulation** (Details as listed under Impact TRA-1)	LTS
Tribal Cultural Resources			
Impact TC-1: 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	PS	**EBMUD Standard Construction Specification 01 35 45, Biological, Cultural, and Paleontological Resource Requirements** *Section 3.3, Protection of Cultural and Paleontological Resources* (Details as listed under CUL-2)	LTS
Wildfire			
Impact WF-1: 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.	PS	**EBMUD Standard Construction Specification 01 35 44, Environmental Requirements** *Section 1.3(B), Project Health and Safety Plan* (Details as listed under Impact HAZ-1 and HAZ-2) *Section 1.3(E), Emergency Action Plan* (Details as listed under Impact HAZ-3) *Section 3.2(G), Fire Prevention and Protection* (Details as listed under Impact HAZ-3) G. Fire Prevention and Protection 1. Perform all Work in a fire safe manner and supply and maintain on the site adequate fire fighting equipment capable of extinguishing incipient fires. Comply with applicable federal, local, and state fire prevention regulations. Where these regulations do not apply, applicable parts of the National Fire Prevention Standards for Safeguarding Building Construction Operations (NFPA No. 241) shall be followed. 2. A long-handled, round-point shovel, or a fire extinguisher shall be kept at an accessible (unlocked) location on the construction site at all times. 3. Earthmoving and portable equipment with internal combustion engines shall be equipped with a spark arrestor to reduce the potential for igniting a wildfire. Such equipment shall be maintained to ensure proper functioning of spark arrestor.	LTS

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Impact Area	Significance Before Practices and Procedures[1]	EBMUD Practices and Procedures[2]	Significance After Practices and Procedures[1]
		4. For all work occurring between April 1 and December 1, or any other periods during which a high fire danger has been identified: a. Equipment that could produce a spark, fire, or flame shall not be used within 10 feet of any flammable materials. b. Portable tools powered by gasoline-fueled internal combustion engines shall not be used within 25 feet of any flammable materials. 5. Vegetation management for fire prevention and protection a. Prior to and during construction: 1) Create and maintain a defensible space (100 feet or to EBMUD property boundary, whichever is shorter) around construction site, construction ingress and egress sites through landscaping, mowing, disking, and/or spraying dry brush or native grasses to a height of 4-inches or less. 2) Remove dead trees within 100-feet of construction site. 3) Limb up trees within 100 feet of construction site so that no leafy foliage, twigs or branches are within 5-feet of the ground. To maintain tree health, tree limbing shall not remove more than 25 percent of a tree canopy within one growing season. 4) Ensure and maintain 5-feet of vertical clearance between roof surfaces and portions of trees overhanging all structures within construction site, and keep roofs free of leaves, needles, twigs, and other combustible matter. To maintain tree health, tree limbing shall not remove more than 25 percent of a tree canopy within one growing season. 5) Keep all overhanging trees, shrubs, and other vegetation, or portions thereof, free of dead limbs, branches, and other combustible matter. b. Neatly stack all combustible materials away from structures within construction site and have all combustible growth cleared 15-feet around the stack. 6. During construction, maintain an unobstructed horizontal clearance at access drives of not less than the required width of the access drives, and an unobstructed vertical clearance of not less than 13 feet 6 inches above all roadways.	
Impact WF-2: 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.	PS	**EBMUD Standard Construction Specification 01 35 44, Environmental Requirements** *Section 1.1(B), Site Activities* (Details as listed under Impact AES-1) *Section 1.4(A), Storm Water Management* (Details as listed under Impact BIO-2)	LTS

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Table ES-3: Summary of Impacts and Mitigation Measures

Impact Area	Significance Before Practices and Procedures[1]	Mitigation Measure[2]	Significance After Mitigation[1]
Noise			
Impact NOI-1: Result in the 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.	PS	**Mitigation Measure NOI-1: Additional Noise Control and Monitoring Plan Measures at the Walnut Creek WTP** The Noise Control and Monitoring Plan required in the Project specifications would include specific measures to reduce noise to ensure that noise at residential receptors does not exceed 60 dBA L_{eq} before 7:00 a.m. in Walnut Creek. The following measures, or their equivalent, would be used in combination to meet the noise limits: • Coordinate worksite activities to minimize or eliminate non-essential noise-generating activities between 6:00 a.m. and 7:00 a.m. • Install temporary sound barriers achieving a minimum sound transmission class (STC) 25 to block the line of sight from concrete activities to nearby residences (**Figure 3.11-5**) for the duration of the applicable construction phase(s). ○ To reduce noise by at least 8 dBA from concrete trucks at the Hydrogen Peroxide Station during Phase 1, sound barriers would need to be at minimum 8 feet high and located on the northeast side of the Hydrogen Peroxide Station. ○ To reduce noise by at least 5 dBA from concrete trucks at the Combined Reclaimed Metering Vault during Phase 1, sound barriers would need to be at minimum 9 feet high, and located on the north, northeast, and northwest sides of the vault. ○ To reduce noise by at least 3 dBA from concrete trucks at the Thickened Solids Pumping Plants and Gravity Thickeners during Phases 1 and 2, sound barriers would need to be at minimum 9 feet high and located on the northeast side of the work area. ○ To reduce noise from early morning worker arrivals and parking at Staging Area 4 during Phases 1 and 2, sound barriers would need to be at minimum 6 feet high and located on the east side of the staging area. **Mitigation Measure TRA-1: Minimize Impacts of Heavy Truck Traffic at the Walnut Creek WTP** (Details as listed under Impact TRA-1)	SU
Transportation			
Impact TRA-1: Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.	PS	**Mitigation Measure TRA-1: Minimize Impacts of Heavy Truck Traffic at the Walnut Creek WTP** • Use of soil and demolition off-haul and large equipment delivery trucks to and from the Walnut Creek WTP will be restricted to between the hours of 9:00 a.m. to 3:30 p.m. • The required Traffic Control Plan shall include the following measures: ○ EBMUD's Contractor shall distribute written traffic safety requirements to all Contractor heavy construction vehicle drivers. All drivers shall provide signed acknowledgement of having read and understood all traffic safety requirements and consequences of non-compliance. ○ Written traffic safety requirements shall include:	LTS

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Impact Area	Significance Before Practices and Procedures[1]	Mitigation Measure[2]	Significance After Mitigation[1]
		▪ Construction work hours specifying when construction traffic would be allowed to access the Walnut Creek WTP and staging areas. ▪ Construction haul routes and associated speed limits. ▪ Designated parking and queuing locations. ○ Contractor shall provide Project sticker or equivalent to drivers who have provided written acknowledgement of traffic safety requirements. ▪ Project sticker shall be made available upon request by EBMUD during the construction contract period. ○ Contractor heavy construction vehicle drivers shall conform to designated construction hours, including no driving, queuing, idling or parking on local roadways outside of designated construction hours as outlined in written traffic safety requirements. ○ Contractor heavy construction vehicle drivers shall use only designated construction traffic haul routes. ○ Contractor shall provide Radar Speed Feedback Signs along Larkey Lane for the entire Project duration (two, one in each direction of traffic on Larkey Lane) to deter speeding by heavy construction vehicles on construction traffic routes. ○ Contractor heavy construction vehicle drivers shall comply with roadway traffic safety rules as outlined in written traffic safety requirements, including, but not limited to: ▪ Stoplight signals and stop signs. ▪ Roadway speed limits (reduced speeds in construction zones and near schools). • Prior to Project construction, EBMUD shall require the contractor(s) to video document pavement conditions on San Luis Road between Casa Way and Larkey Lane and on Larkey Lane between San Luis Road and Alfred Avenue that will be used by Project-related vehicles. Pavement conditions shall also be documented after Project construction is complete. If there is visible deterioration in the pavement condition, any pavement damaged by Project construction-related traffic shall be repaired to a structural condition equal to that which existed prior to Project construction activity.	
Impact TRA-3: Substantially increase hazards due to a design feature or incompatible uses.	PS	**Mitigation Measure TRA-2: Additional Flagger Requirements at Larkey Lane for Walnut Creek WTP** Contractors shall implement the following measures as part of the Traffic Control Plan in Walnut Creek: • On extended workdays with large concrete pours and days with soil off-hauling at the Walnut Creek WTP, provide a traffic control flagger at the intersection of Larkey Lane and Alvarado Avenue during school start and dismissal times with a buffer before school starts and after school ends. • The construction contractor shall confirm with the Contra Costa Christian Schools (2721 Larkey Lane, Walnut Creek) and Buena Vista Elementary School (2355 San Juan Avenue, Walnut Creek) the typical start and dismissal times, school events, and irregular start and dismissal times prior to the beginning of each school year.	LTS

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Chapter 1 Introduction

1.1 Overview, Purpose, and Authority

The California Environmental Quality Act (CEQA) requires that all state and local government agencies consider the environmental consequences over which they have discretionary authority before taking an action that has the potential to affect the environment. This Environmental Impact Report (EIR) assesses the potential impacts associated with the Walnut Creek Water Treatment Plant (WTP) Pretreatment Project (Project) proposed by the East Bay Municipal Utility District (EBMUD). This document was prepared in conformance with CEQA (California Public Resources Code, Section 21000 et seq.), *CEQA Guidelines* (CCR Title 14 Section 15000 et seq.), and EBMUD policies and procedures. This EIR is intended to serve as an informational document for agency decision-makers and the public regarding the Project.

1.1.1 Overview

The proposed Project involves enhancing the existing Walnut Creek WTP built in 1967 and making improvements at the Lafayette WTP. These water treatment plants are situated on EBMUD-owned properties in Walnut Creek and Lafayette, California, respectively. The Walnut Creek WTP serves approximately 225,000 people in EBMUD's East-of-Hills service area, which includes portions of Pleasant Hill, Walnut Creek, Alamo, Lafayette, Danville, Blackhawk, and San Ramon Valley communities. The Walnut Creek WTP primarily treats Mokelumne River water stored in the Sierra foothills at Pardee Reservoir, but also treats untreated water stored locally in EBMUD's Briones Reservoir. The Walnut Creek WTP lacks pretreatment and ozone facilities that limit its ability to treat water from the Sacramento River or other water transfers via the Freeport Regional Water Project (Freeport) facility and from neighboring water agencies via interties during planned and unplanned outages, as well as during droughts.

The Project would add pretreatment facilities to the Walnut Creek WTP that would allow EBMUD to more reliably treat a broader range of untreated Pardee and Briones water resulting from high rainfall runoff, wildfires, algae blooms, climate change and emerging contaminants, and improve the ability to treat supplemental supplies from Freeport or the interties during planned and unplanned outages and future droughts. The Project would also improve treated water quality, taste, and odor by removing organics and by adding ozone treatment. The Project would also increase the Walnut Creek WTP capacity to meet planned future demands, improve water system reliability and operational flexibility, and allow for the potential decommissioning of the Lafayette WTP.

The Project includes construction of staging areas, removal of vegetation including tree removal, grading, construction of new pretreatment facilities, ozone facilities, consolidated maintenance building, buried pipelines, outdoor lighting, stormwater facilities, security fencing, and paving, redirection of social footpaths, demolition of existing facilities and maintenance facilities, and site restoration including new trees at the Walnut Creek WTP. The Project also includes removal of vegetation including tree removal, grading, construction of new weir structures, buried pipelines, paving, demolition of an existing weir structure, and site restoration including new trees at the Lafayette WTP. The Project would be constructed in two phases. Phase 1 involves construction at both sites and would allow the Walnut Creek WTP to treat a broader range of untreated water quality and increase the capacity from 115 million gallons per day (MGD) to 125

MGD. Phase 2 involves construction at the Walnut Creek WTP and would allow the Walnut Creek WTP to further improve the ability to treat a broader range of untreated water quality and would increase the capacity to 160 MGD. Increasing the capacity would allow the Walnut Creek WTP to serve planned land use changes and redevelopment projects disclosed and incorporated into relevant land jurisdiction general plans.

1.1.2 Purpose and Authority

This EIR provides an analysis of the potential environmental effects of the Project. The environmental impacts of the Project are analyzed to the appropriate degree of specificity, in accordance with Section 15146 of the *CEQA Guidelines*. This document addresses the potentially significant adverse environmental impacts that may be associated with construction and operation of the Project and identifies appropriate and feasible mitigation measures and alternatives that may be adopted to reduce or avoid significant impacts.

1.2 Lead Agency Determination

EBMUD is designated as the lead agency for the purposes of this EIR. *CEQA Guidelines* Section 15367 defines the lead agency as "…the public agency, which has the principal responsibility for carrying out or approving a project." Other public agencies may use this EIR in the decision-making or permitting process and consider the information in this EIR along with other information that may be presented during the CEQA process.

1.3 Notice of Preparation

In accordance with Sections 15082(a), 15103, and 15375 of the *CEQA Guidelines*, EBMUD prepared and circulated a Notice of Preparation (NOP) of an EIR for the Project for a 30-day comment period between February 28, 2022 and March 30, 2022. A postcard mailer was sent to over 510 residents and property owners notifying them of the NOP. Additionally, an email was sent to approximately 1,000 EBMUD WaterSmart customers, and meeting notifications were posted to Nextdoor neighborhood groups, which reached about 1,300 customers. The full NOP was sent to an additional 31 individuals representing agencies and special interest stakeholders.

EBMUD conducted a virtual public outreach and scoping meeting to discuss the Project and to solicit public input. The public meeting was held on March 16, 2022, to receive public comments on the scope and content of the EIR. **Appendix A** contains a copy of the NOP and Initial Study (IS) for the Project, and **Appendix B** contains the comment letters submitted by agencies and the public in response to the NOP. Comment letters were received from eight residents and two agencies/organizations.

Residents	Agencies/Organizations
Julia Jackson	City of Walnut Creek
Lisa Katzki	Native American Heritage Commission
Maureen Loughney	
Arvind Mallya	
Karen and Kevin Nicles	
Bob Simon	
Cliff Threlkeld	
Katelyn Walker	

1.4 Issues Raised During Public Outreach and Scoping

Issues and concerns raised during the public outreach and scoping meeting conducted by EBMUD include, but are not limited to the following:

- Noise, dust and traffic during construction;
- Potential damage to local roads;
- Chemical use at the Walnut Creek WTP;
- Visual impacts of the new facilities;
- Planting of trees to screen facilities;
- Impacts on public trails and social footpaths on EBMUD property;
- A suggestion for revising the project design to raise weirs in Walnut Creek instead of at the Lafayette WTP; and
- Compatibility of project with existing land use designation.

1.5 Review and Use of EIR

Upon completion of this EIR, EBMUD filed a Notice of Completion (NOC) with the Governor's Office of Planning and Research to begin the 45-day public review period (Public Resources Code, Section 21161). Concurrent with the NOC, this EIR has been distributed to responsible and trustee agencies, other affected agencies, surrounding cities, and interested parties, as well as all parties requesting a copy of the EIR in accordance with Public Resources Code 21092(b)(3). During the public review period, the EIR and technical appendices are available for review at EBMUD's main office during regular business hours (8:00 a.m. to 4:30 p.m., Monday through Friday), located at the address provided below, at the Walnut Creek Public Library, at 1644 North Broadway, at the Lafayette Library, at 3491 Mt. Diablo Boulevard, and on EBMUD's website (www.ebmud.com/wcwtppretreatment). Agencies, organizations, and interested parties, including those not previously contacted, or who did not respond to the NOP, currently have the opportunity to comment on the EIR during the public review period.

Written comments on this EIR should be addressed to:

Chien Wang, Project Manager
East Bay Municipal Utility District
375 Eleventh Street, MS 701
Oakland, CA 94607-4240

Email: wcwtp.pretreatment@ebmud.com

1.6 Organization of the EIR

The EIR is organized into the following main chapters:

Executive Summary. This chapter includes a summary of the Project evaluated in this EIR. It includes a table that summarizes the impacts, mitigation measures, and level of significance after mitigation measures are incorporated.

Chapter 1: Introduction. This chapter provides an introduction and overview describing the Project, purpose and scope of this EIR, brief explanation of the areas of consideration and issues to be resolved, and a summary of the CEQA review process.

Chapter 2: Project Description. This chapter describes the Project including objectives, location, construction methods, and operations and maintenance activities. A list of responsible agencies and required approvals is included.

Chapter 3: Environmental Setting, Impacts, and Mitigation Measures. This chapter analyzes the environmental impacts of the Project. Each topic area includes a description of the environmental setting, methodology, significance criteria, impacts, mitigation measures, and significance after mitigation.

Section 3.0: Introduction and Environmental Analysis. This section provides an overview of the environmental analysis and presents the format for each topical section. It describes issues that have been determined to have no or less-than-significant impacts and therefore are not carried forward for further analysis. The approach for the analysis of cumulative impacts is also described.

Section 3.1: Aesthetics. This section evaluates impacts on visual and scenic resources.

Section 3.2: Air Quality. This section addresses local and regional air quality impacts as well as consistency with Bay Area Air Quality Management District rules and regulations.

Section 3.3 Biological Resources. This section addresses impacts on habitat, vegetation, and wildlife; the potential degradation or elimination of important habitat; and impacts on listed, proposed, and candidate threatened and endangered species.

Section 3.4: Cultural Resources. This section addresses impacts on known historical resources and potential archaeological and paleontological resources.

Section 3.5: Energy. This section evaluates energy consumption.

Section 3.6: Geology, Soils, and Seismicity. This section evaluates the potential for local geological hazards to impact facilities.

Section 3.7: Greenhouse Gas Emissions. This section addresses the potential for construction and operation of the Project to generate greenhouse gases.

Section 3.8: Hazards and Hazardous Materials. This section addresses the likelihood of the presence of hazards and hazardous materials or conditions on the Project site that may have the potential to impact human health.

Section 3.9: Hydrology and Water Quality. This section addresses impacts on local hydrological conditions, including drainage areas, and changes in water quality.

Section 3.10 Land Use and Planning. This section addresses compatibility with local land use policies.

Section 3.11: Noise and Vibration. This section addresses potential construction and operational noise impacts from mobile and stationary sources and also addresses the impact of noise generation on neighboring uses.

Section 3.12: Recreation. This section evaluates Project impacts on existing recreational facilities.

Section 3.13: Transportation. This section addresses impacts on the local and regional roadway system, public transportation, bicycle, and pedestrian access.

Section 3.14: Tribal Cultural Resources. This section evaluates potential effects on resources with cultural value to a California Native American tribe.

Section 3.15: Wildfire. This section addresses the potential for the Project to exacerbate wildfire risk in the Project vicinity.

Chapter 4: Alternatives. This chapter compares the impacts of the Project with other alternatives considered by EBMUD, including the No Project Alternative. The environmentally superior alternative is evaluated.

Chapter 5 Other CEQA Considerations. This chapter describes potential growth-inducing impacts associated with the Project, a summary of significant environmental impacts, including unavoidable and cumulative effects, and the Project's irreversible and irretrievable commitment of resources.

Chapter 6: Report Preparers. This chapter lists the authors that assisted in the preparation of the EIR, by name and company or agency affiliation.

Appendices. This section includes all notices and other procedural documents pertinent to the EIR, as well as all technical material prepared to support the analysis.

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Chapter 2 Project Description

2.1 Overview

East Bay Municipal Utility District (EBMUD) is proposing the Walnut Creek Water Treatment Plant (WTP) Pretreatment Project (Project). The Project includes improvements to the existing Walnut Creek WTP, originally constructed in 1967, located on an approximate 50-acre site owned by EBMUD in the City of Walnut Creek, California. The Project also includes improvements at the Lafayette WTP, located on an approximate 24-acre site owned by EBMUD in the City of Lafayette, California. The Walnut Creek WTP is bounded by Alfred Avenue to the east, the Briones to Mt. Diablo Regional Trail to the north, and Acalanes Ridge Open Space to the south and west (see **Figure 2-1**). Acalanes Ridge Open Space is a 171-acre preserve with recreational uses such as hiking, dog walking, and biking. The Lafayette WTP is bounded by Mt. Diablo Boulevard to the south and west, Temple Isaiah to the east, and State Route 24 to the north (see **Figure 2-2)**.

Figure 2-1: Walnut Creek Water Treatment Plant Pretreatment Project Walnut Creek Location

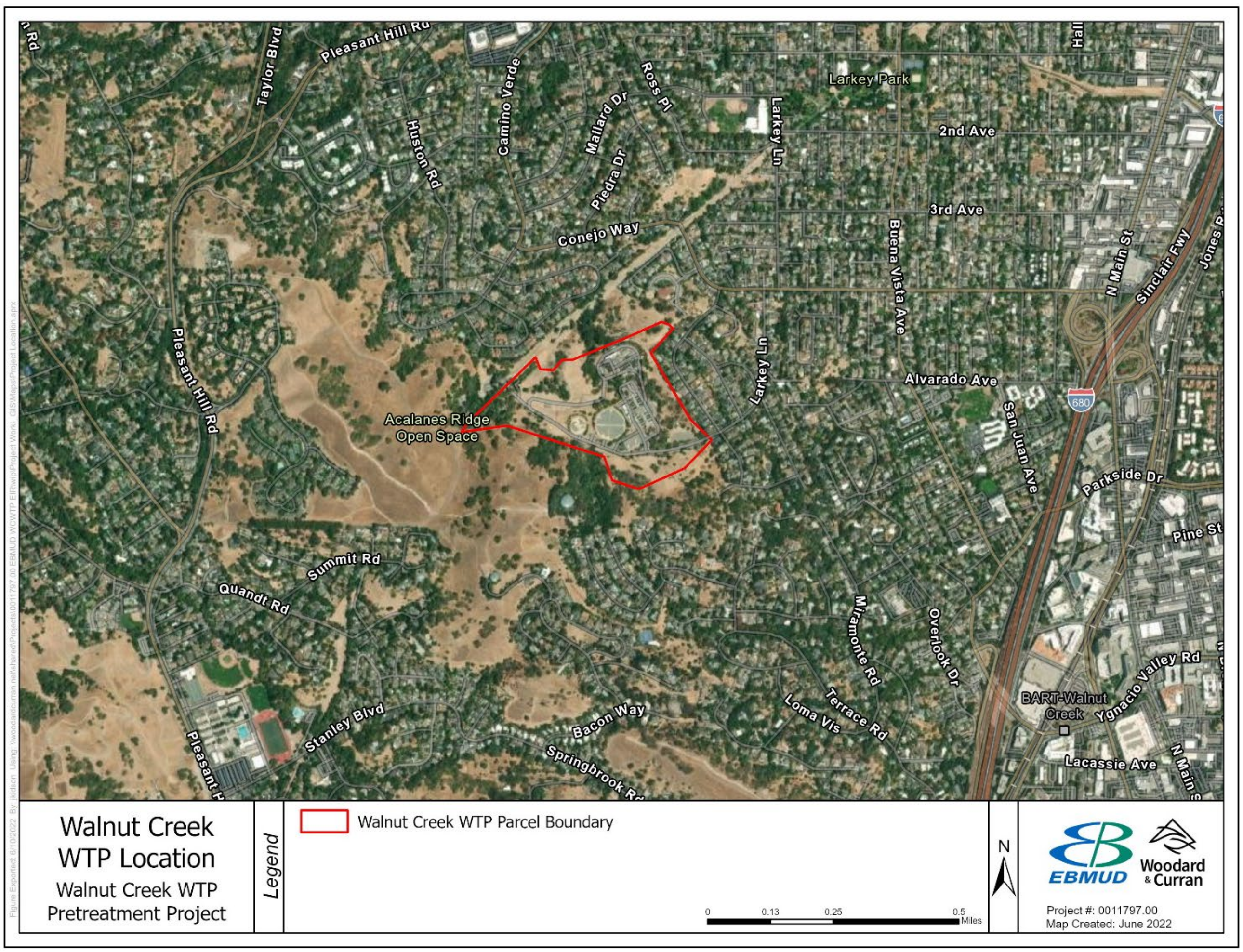


Figure 2-2: Walnut Creek Water Treatment Plant Pretreatment Project Lafayette Location

The Walnut Creek WTP provides the primary water supply for approximately 225,000 people within EBMUD's East-of-Hills service area located in Contra Costa County. The Walnut Creek WTP operates year-round and serves EBMUD customers in portions of Pleasant Hill, Walnut Creek, and Lafayette, as well as the Alamo, Danville, Blackhawk and San Ramon Valley communities. The Walnut Creek WTP primarily treats Mokelumne River water stored in the Sierra foothills at Pardee Reservoir, but also treats untreated water stored locally in EBMUD's Briones Reservoir. The Walnut Creek WTP lacks pretreatment and ozone facilities that limit its ability to treat water from the Sacramento River or other water transfers via the Freeport Regional Water Project (Freeport) facility and from neighboring water agencies via interties during planned and unplanned outages, as well as during droughts.

The Project would add pretreatment facilities to the Walnut Creek WTP that would allow EBMUD to more reliably treat a broader range of untreated Pardee and Briones water resulting from high rainfall runoff, wildfires, algae blooms, climate change and emerging contaminants, and improve the ability to treat supplemental supplies from Freeport or the interties during planned and unplanned outages and future droughts. The Project would also improve treated water quality, taste, and odor by removing organics and by adding ozone treatment. The Project would also increase the Walnut Creek WTP capacity to meet planned future demands, improve water system reliability and operational flexibility, and allow for the potential decommissioning of the Lafayette WTP. The Project would be constructed in two phases. Phase 1 would allow the Walnut Creek WTP to treat a broader range of untreated water quality and increase the capacity from 115 million gallons per day (MGD) to 125 MGD. Phase 2 would allow the Walnut Creek WTP to further improve the ability to treat a broader range of untreated water quality and would increase the capacity to 160 MGD. Increasing the capacity to 125 MGD (Phase 1) and 160 MGD (Phase 2) would allow the Walnut Creek WTP to serve planned land use changes and redevelopment projects disclosed and incorporated into relevant land jurisdiction general plans.

EBMUD is implementing a planned system of improvements as part of its Water Treatment and Transmission Improvement Program (WTTIP). The WTTIP includes new facilities and upgrades to existing facilities primarily in the cities of Lafayette, Moraga, Orinda, and Walnut Creek. The improvements address systemwide water treatment and distribution facilities that are needed to assure reliable water supply for current and future customers. Improvements to treatment processes at the Walnut Creek WTP were included in the WTTIP.

The environmental impacts of the WTTIP were evaluated in the WTTIP Environmental Impact Report (EIR, State Clearinghouse No. 2005092019) which was certified by EBMUD's Board of Directors in December 2006. The WTTIP EIR evaluated some improvements at a project level, and some improvements, for which sufficient design details were not available, were evaluated at a program level. The pretreatment improvements at the Walnut Creek WTP were considered in the WTTIP EIR at a program level because at the time the WTTIP EIR was prepared, the conceptual pretreatment design had not been completed for the improvements. The WTTIP EIR describes treatment improvements to include additional filtration and installation of high-rate sedimentation units adjacent to the existing filters as well as addition of ultraviolet disinfection facilities.

Since preparation of the WTTIP EIR, the proposed concept for the improvements at the Walnut Creek WTP has changed considerably, and the specific details of the proposed design, have been developed. Thus, this Project-specific EIR has been prepared to address the proposed Project.

Figure 2-3 shows the locations of Project facilities within the Walnut Creek WTP site and **Figure 2-4** shows locations of proposed facilities within the Lafayette WTP site. These facilities are described in detail later in this chapter.

Figure 2-3: Walnut Creek WTP Site Plan and Phasing

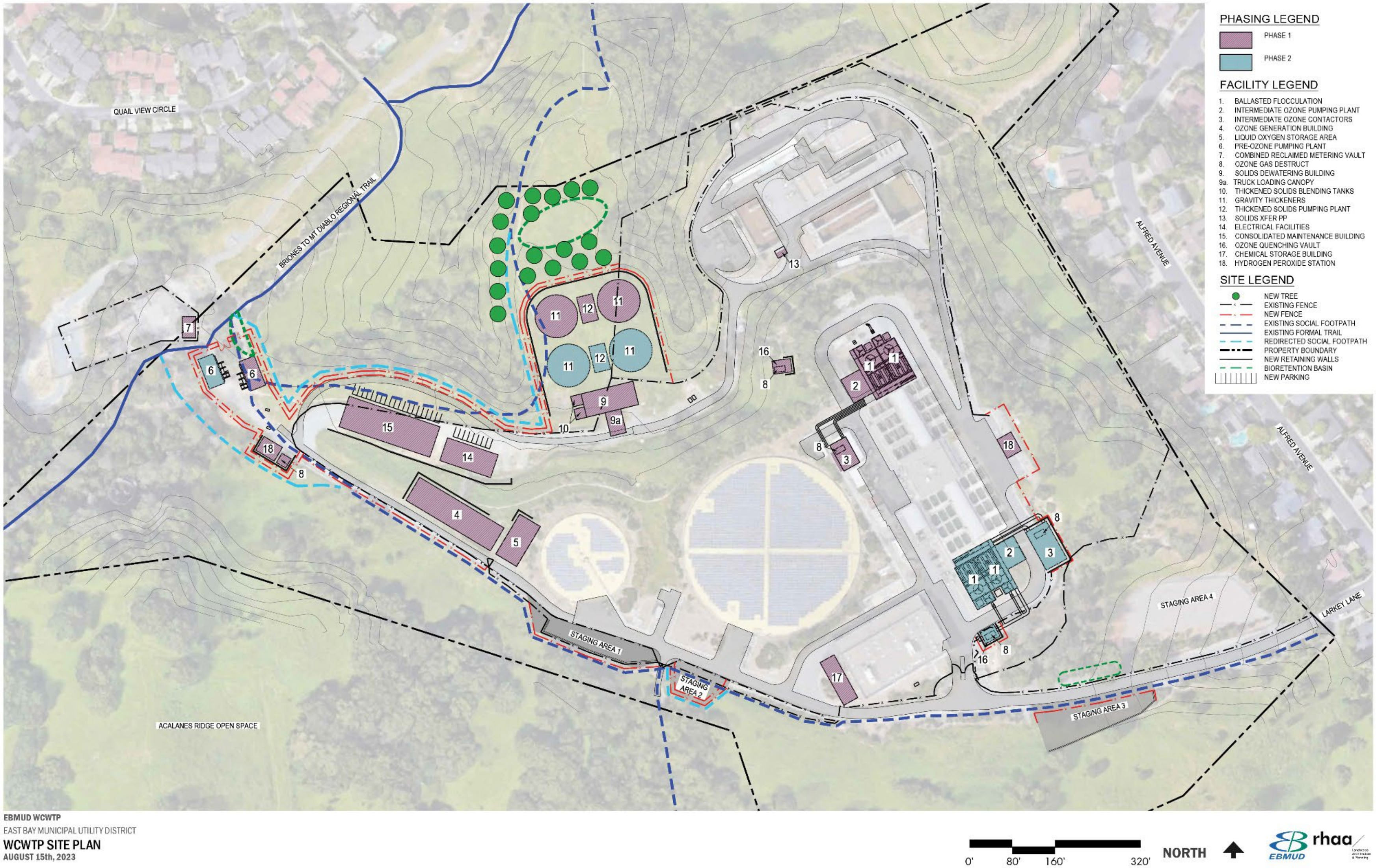
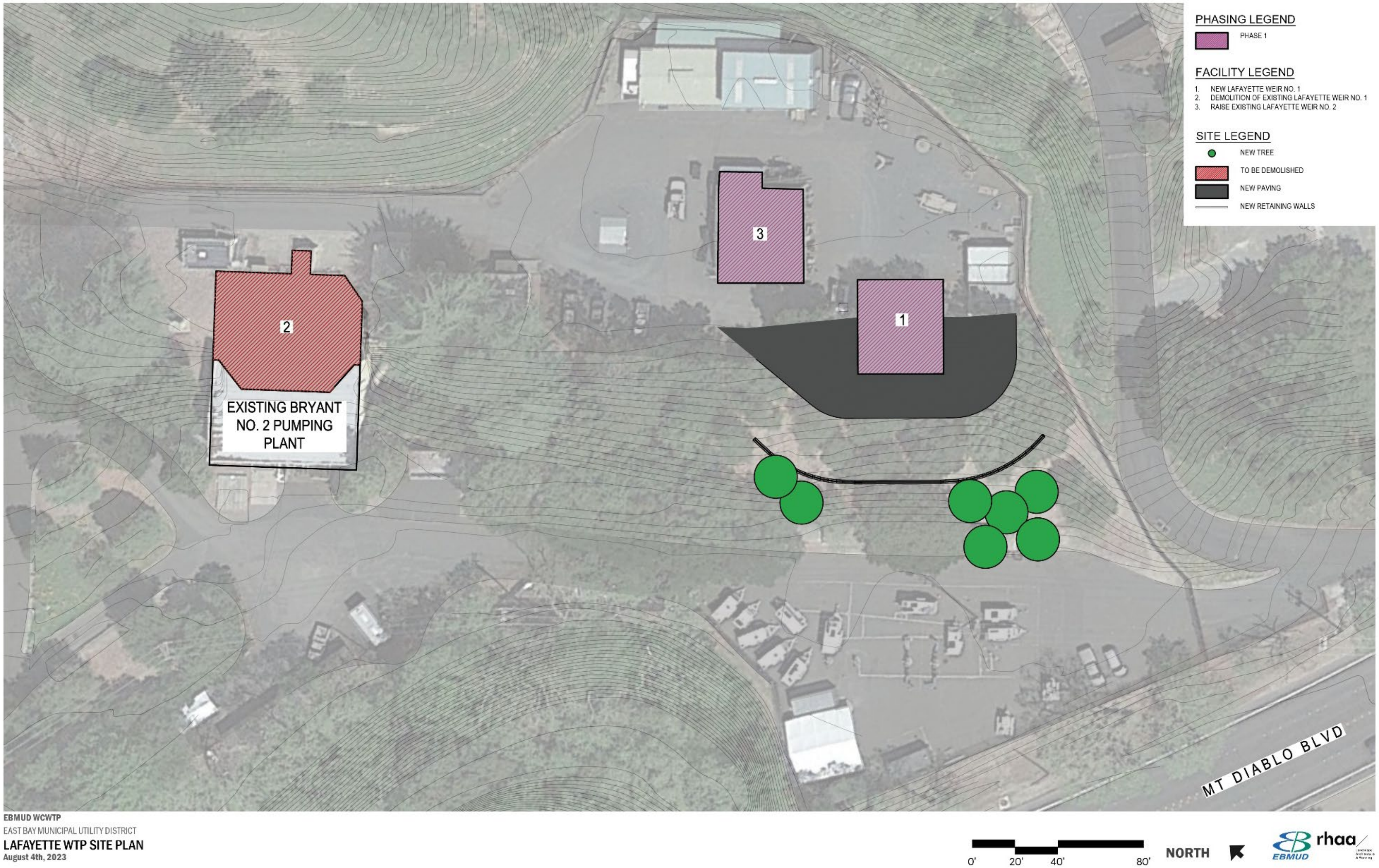


Figure 2-4: Lafayette WTP Site Plan



2.2 Project Background

2.2.1 EBMUD Service Area

Figure 2-5 shows the boundaries of the EBMUD water service area. EBMUD's water system currently serves approximately 1.4 million people in a 332-square-mile area in Alameda and Contra Costa Counties, serving 20 incorporated cities and 15 unincorporated areas. The EBMUD service area is divided by the Oakland-Berkeley Hills into the West-of-Hills and East-of-Hills service areas. The West-of-Hills area includes portions of both Alameda and Contra Costa Counties, while the East-of-Hills area is entirely within Contra Costa County. The Project is located within the East-of-Hills service area.

2.2.2 Overview of Existing Water System Operations

Water Supply

EBMUD's principal water source is relatively high-quality runoff from melting of Sierra snowpack in the Mokelumne River watershed, a 575-square-mile area of the Sierra Nevada mountains in Alpine, Amador and Calaveras Counties. The watershed is roughly bounded by Highway (Hwy) 88 to the north, Hwy 4 to the south, and the Sierra crest to the east. Water from the Mokelumne River watershed drains to the west and is stored behind two dams owned and operated by EBMUD at the Pardee and Camanche Reservoirs, about 40 miles northeast of the city of Stockton. Untreated water flows by gravity from Pardee Reservoir through the Mokelumne Aqueducts to the San Francisco Bay Area. The Mokelumne Aqueducts begin at the Pardee Tunnel in Campo Seco and terminate approximately 80 miles to the west at the Lafayette Aqueducts in Walnut Creek. The Mokelumne Aqueducts convey untreated water to the Walnut Creek WTP just before they terminate at the Lafayette Aqueducts. Mokelumne Aqueducts No. 1 and No. 2 combine to become Lafayette Aqueduct No. 1, and Mokelumne Aqueduct No. 3 becomes Lafayette Aqueduct No. 2. Both Lafayette Aqueducts convey untreated water to EBMUD's Lafayette WTP, Orinda WTP, Upper San Leandro Reservoir, San Pablo Reservoir, and Briones Reservoir.

Additional water (less than 10 percent of total supply) comes from local watersheds in Alameda and Contra Costa Counties and is stored behind five dams in EBMUD's local San Pablo, Briones, Lafayette, Upper San Leandro and Chabot Reservoirs. The Freeport Regional Water Project allows EBMUD to pump and treat water from the Sacramento River to augment EBMUD's Mokelumne River supply during droughts. The Freeport Regional Water Project was completed in 2011 and includes a series of pumping plants, pipelines, and the Folsom South Canal to deliver the Sacramento River water supply to the Mokelumne Aqueducts. During planned and unplanned outages, as well as droughts, EBMUD can also obtain water supplies from neighboring water agencies through interties, including an untreated intertie with Contra Costa Water District.

Water Treatment Plants

EBMUD routinely operates five WTPs: the Walnut Creek, Lafayette, Orinda, Sobrante, and Upper San Leandro WTPs (**Figure 2-4**). EBMUD also operates a sixth WTP, the San Pablo WTP, a standby facility only used during drought operations and planned outages of key facilities such as the Claremont Tunnel, which transports water from the Orinda WTP to the west side of the Berkeley Oakland Hills. The Walnut Creek WTP provides treated water to East-of-Hills customers in the Walnut Creek/San Ramon Valley area and along with the Orinda WTP, operates year-round.

The remaining three treatment plants operate every year seasonally. The Lafayette WTP primarily serves the central part of the EBMUD service area in the Lafayette/Moraga/Orinda (Lamorinda) communities during the summer only. During the lower water demand winter months, the Lafayette WTP is typically shut down and both the Walnut Creek and the Orinda WTPs serve the Lamorinda area customers. As shown in **Figure 2-5**, substantial overlap occurs in the areas served by the Sobrante, Orinda and Upper San Leandro WTPs, as well as between the areas served by the Walnut Creek, Lafayette and Orinda WTPs. The overlap notwithstanding, on any given day, treated water production from one WTP could offset some or all the production from another facility, depending on actual water demands and daily operational decisions made by EBMUD.

Treated Water Transmission and Distribution

The WTPs and transmission pipelines are the backbone of EBMUD's water treatment and transmission system. After passing through the WTPs, water is distributed to customers throughout EBMUD's service area via a network of transmission and distribution pipelines and distribution reservoirs. The water distribution network contains approximately 4,300-miles of distribution pipelines, 131 pumping plants, and 167 distribution reservoirs (EBMUD, 2021c).

EBMUD's service area is divided into about 122 pressure zones ranging in elevation from sea level to approximately 1,450-feet above sea level. A pressure zone is an area within a specific elevation band where storage and distribution facilities are designed to deliver treated water at a pressure range suitable for customer use. Coordination among facilities in different pressure zones is important for maintaining system operations. Generally, the pumping plant(s) in one pressure zone pumps water up to reservoir(s) in the next higher pressure zone. Pumping plant(s) in that pressure zone in turn pump water up to higher pressure zones. Rate control stations and regulators are used to provide water by gravity from higher pressure zones and WTPs to lower pressure zones.

Walnut Creek Water Treatment Plant Service Area

The Walnut Creek WTP is the primary water supply for the approximately 225,000 people within EBMUD's East-of-Hills service area located in Contra Costa County. The Walnut Creek WTP operates year-round and serves customers in portions of Pleasant Hill, Walnut Creek, and Lafayette, as well as the Alamo, Danville, Blackhawk and San Ramon Valley communities. The Walnut Creek WTP primarily treats Mokelumne River water stored in the Sierra foothills at Pardee Reservoir, but also treats water stored locally in EBMUD's Briones Reservoir. EBMUD can also pump and treat water from the Sacramento River via its Freeport facility, as well as from neighboring water agencies through untreated water agency interties during planned and unplanned outages, as well as during droughts.

Figure 2-5: EBMUD Water Service Area

2.2.3 Existing Walnut Creek Water Treatment Plant Process

The Walnut Creek WTP currently treats water with eight inline, gravity filters separated into four north filters and four south filters. Each filter has an approximate treatment area of 2,304 square feet. Untreated water from the Mokelumne Aqueducts is directed to the four north filters via a 78-inch diameter pipeline routed along the north side of the facility, and to the four south filters via a 72-inch pipeline routed along the south side of the facility. Each pipeline directs the water through either a north or south rapid mix structure where the untreated water is mixed with coagulants (polyaluminum chloride and a cationic polymer) that cause smaller soil and organic particles in the water to clump together into larger particles that can be more easily filtered from the water.

After mixing, the water drains by gravity through the dual-media filters consisting of a layer of anthracite (i.e., ground charcoal) underlain by a layer of sand. The water is collected below the filters and routed to the 4-million gallon (MG) chlorine contact chamber where it is disinfected and then stored in a 16-MG clearwell after disinfection prior to entering the water distribution system. Solids removal occurs entirely in the dual-media gravity filters, which perform well when water quality is relatively high, but the filters can be quickly overwhelmed by high turbidity[1], organics, and algae events.

The filters are regularly cleaned by backwashing from below using pressurized water from the washwater tank, Larkey Reservoir. Larkey Reservoir is a 3-MG steel water tank constructed on the hillside southwest of the Walnut Creek WTP site that also serves as a distribution reservoir in EBMUD's Colorados Pressure Zone. On average, each filter backwash uses approximately 390,000 gallons of water. Washwater generated during the filter backwash process flows by gravity to a 1.3-MG on-site settling basin where the water is temporarily stored to let the solids settle out. After the solids settle out, the water is pumped out of the settling basin to the reclaim vault[2], and the remaining solids that settles out form a sludge that is periodically removed and hauled off site for disposal at a landfill. The existing water treatment process generates two waste streams: spent washwater[3] from backwashing the filters and short-term (15 to 20-minute long) filter-to waste flows[4] of approximately 245,000 gallons of water that are generated when the filtration process is initially restarted after backwashing the filters. The filter-to-waste water flows by gravity to the existing 0.85 MG filter-to-waste basin, where the solids settle out and the water is pumped to the reclaim vault.

The Walnut Creek WTP has a current capacity of 115 MGD but treatment process limitations prevent the Walnut Creek WTP from supplying 115 MGD unless the quality of untreated water

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[1] Turbidity is the measure of relative clarity of a liquid and is a key test of water quality. It is an optical characteristic of water and is a measurement of the amount of light that is scattered by material in the water when a light is shined through the water sample. The higher the intensity of scattered light, the higher the turbidity (and the poorer the water quality). Turbidity measurements are most commonly presented in Nephelometric Turbidity Units (NTU).

[2] The existing reclaim vaults are where reclaimed water is currently conveyed back into the untreated water pipelines where it is blended with the incoming untreated water from the Mokelumne Aqueducts and becomes part of the incoming water supply to the Walnut Creek WTP filters.

[3] Spent washwater is generated when the filters are backwashed, a process in which the flow of water is reversed to remove particles from the filters. The backwash process generates spent washwater, which is then reclaimed.

[4] Filter-to-waste is the water produced during the initial flow of water through a filter as it is returned to service after being backwashed.

entering the WTP is favorable. Recent events impacting untreated water quality, including algae blooms, elevated turbidities from strong rains, and elevated turbidities from the Sacramento River drought supply have created challenging water treatment conditions for the Walnut Creek WTP. The threat of fire in EBMUD's Mokelumne watershed and the accompanying water quality impacts has also become an immediate concern. Due to climate change, and possible new emerging contaminants, an increased number of lower water quality events are expected to occur in the future. This lower quality water supply could lead to decreased WTP capacity due to increased water turbidity, as well as taste and odor issues associated with increased organic material and associated disinfection byproducts.

2.2.4 Existing Alternate Emergency Operations Center

The Walnut Creek WTP is one of the primary emergency meeting areas and EBMUD's Alternate Emergency Operations Center (EOC) identified in EBMUD's Emergency Operations Plan (EBMUD, 2021d). The Alternate EOC is designed for use when the primary EOC in Oakland is not available. The current Alternate EOC facilities at the Walnut Creek WTP are spread out in multiple locations, making it difficult to coordinate operations during an emergency.

2.2.5 Water Quality Regulations

Water treatment processes at the Walnut Creek WTP are designed to meet numerous federal regulations governing drinking water quality, including the following that is particularly relevant to the Project.

Disinfectants and Disinfection Byproducts Rules

Disinfection byproducts occur after treating organics within the water. The Stage 1 Disinfectants and Disinfection Byproducts Rule (DBPR) reduces drinking water exposure to disinfection byproducts, establishing maximum contaminant levels for trihalomethanes, haloacetic acids, bromate ion and chlorate ion and maximum residual disinfect levels for free chorine and chloramines. The Stage 1 DBPR applies to community water systems and non-transient non-community systems, including those serving fewer than 10,000 people that add a disinfectant to the drinking water during any part of the treatment process. The Stage 2 DBPR strengthens public health protection by tightening compliance monitoring requirements for trihalomethanes and haloacetic acids. The DBPR targets public water systems with the greatest risk.

2.3 Project Purpose and Objectives

2.3.1 Purpose and Need

The primary purpose of the Project is to allow the Walnut Creek WTP to more reliably treat a broader range of untreated water from Pardee and Briones Reservoirs resulting from high rainfall runoff, wildfires, algae blooms, and supplemental supplies from Freeport or the interties during planned and unplanned outages and future droughts, all of which are expected to increase in the future due to climate change. The Project would also ensure EBMUD continues to meet existing drinking water and environmental regulations and achieve EBMUD's internal long-term water quality goals, as well as any potential future emerging contaminants. The Project would also increase the Walnut Creek WTP capacity to meet planned future demands, improve water system reliability and operational flexibility, and allow for the potential decommissioning of the Lafayette

WTP. The Project would be constructed in two phases. Phase 1 would allow the Walnut Creek WTP to treat a broader range of untreated water quality and increase the capacity from 115 MGD to 125 MGD. Phase 2 would further improve the ability of the Walnut Creek WTP to treat a broader range of untreated water quality and would increase the capacity to 160 MGD.

2.3.2 Project Objectives

Specific Project objectives related to operations, water quality, water service reliability, maintenance, the environment, and cost are listed in **Table 2-1**.

Table 2-1: Project Objectives

Category	Objective
Primary Operational Objectives	Maintain water treatment capacity at the Walnut Creek WTP when untreated water quality is diminished at Pardee Reservoir or Briones Reservoir due to high rainfall runoff, watershed fire events, droughts, algae blooms, and emerging contaminants.
	Increase flexibility to treat a broader range of water quality from supplemental water supplies entering EBMUD's water system from the Sacramento River via Freeport Regional Water Project.
	Increase flexibility to treat a broader range of water quality from supplemental water supplies entering EBMUD's water system from neighboring water agencies through untreated water agency interties during planned and unplanned outages as well as droughts.
	Increase the water treatment capacity to meet planned future demands, support planned and unplanned outages and rate restrictions at other water treatment plants, recover distribution storage quickly after power outages, allow distribution pumping plants to operate only when renewable electricity is most plentiful and electricity costs are lowest, and accommodate the potential decommissioning of the Lafayette WTP.
	Continue to meet drinking water and environmental regulations and achieve EBMUD's internal long-term water quality goals.
Secondary Operational Objectives	Maintain a similar and acceptable aesthetic site environment after construction.
	Minimize life-cycle costs (capital, operating, and maintenance) to EBMUD's customers.
	Maximize the useful life of existing facilities in a manner that reduces costs for customers.
	Minimize operational emissions of greenhouse gases.
Construction Objectives	Minimize environmental impacts on the community during construction.
	Reuse or recycle building materials on site to the extent feasible, including concrete demolition materials and excavated earth.
	Maintain water service and emergency flows during construction.
	Protect the local community from construction hazards.
	Provide safe construction site conditions.

2.4 Project Location

The Walnut Creek WTP is located at 2201 Larkey Lane, Walnut Creek, California, in Contra Costa County, as shown in **Figure 2-1**. The Project site is bounded by Alfred Avenue to the east, the Briones to Mt. Diablo Regional Trail to the north, and Acalanes Ridge Open Space to the south and west. The Acalanes Ridge Open Space is a 171-acre preserve with recreational uses such as hiking, dog walking, and biking. There are single family homes to the east and north of the Project site and St. Stephen Catholic Church is located northeast of the site.

The Lafayette WTP is located at 3848 Mt. Diablo Boulevard, Lafayette, California in Contra Costa County, as shown in **Figure 2-2**. The Project site is bounded by Mt. Diablo Boulevard to the south and west, Temple Isaiah to the east, and State Route 24 to the north. There are no residences adjacent to the site.

2.5 Project Characteristics

2.5.1 Project Phasing

Walnut Creek WTP

The primary components of the Project are shown in **Figure 2-3**, and include new pretreatment facilities and ancillary improvements required throughout the Walnut Creek WTP site. The Project would be designed and constructed in two separate phases as shown in **Figure 2-3** and listed below. Numbers next to the name of each facility are keyed to the numbering in **Figure 2-3**. Phase 1 would allow the Walnut Creek WTP to treat a broader range of untreated water quality and increase the capacity from 115 MGD to 125 MGD. Phase 2 would further improve the ability of the Walnut Creek WTP to treat a broader range of untreated water quality and would increase the capacity to 160 MGD.

The new pretreatment facilities consist of a ballasted flocculation process to remove turbidity, total organic carbon and algae, and ozone treatment which oxidizes and destroys organic compounds that produce undesirable taste and odor. Ozone treatment would occur both upstream of the ballasted flocculation process (pre-ozone) and downstream of the ballasted flocculation process (intermediate ozone). The Phase 1 improvements would enable pretreatment of untreated water before entering the north filters and Phase 2 improvements would enable pretreatment of untreated water before entering the south filters. The construction timing of the Phase 2 improvements is not firmly established but would depend on untreated water quality conditions in the future and the timing of future demands.

Phase 1 Improvements at Walnut Creek WTP (number corresponds to facility ID in Figure 2-3)

- North ballasted flocculation basins (1)
- North intermediate ozone pumping plant (2)
- North intermediate ozone contactor (3)
- Ozone generation building (4)
- Liquid oxygen (LOX) storage area (5)
- North pre-ozone pumping plant (6)
- Combined reclaimed metering vault (7)
- North ozone gas destruct vault (8)
- Solids dewatering building and truck loading facility (9)
- Thickened solids blending tanks (10)
- Two gravity thickeners (11)
- Thickened solids pumping plant (12)
- Solids transfer pumping plant (13)

- Electrical facilities building (14)
- Consolidated maintenance building (15)
- North ozone gas quenching vault (16)
- Chemical storage building extension (17)
- Hydrogen peroxide station (18)
- Large diameter buried pipelines
- Paved roadways
- Paved parking
- Retaining walls
- Security fencing and cameras
- Stormwater facilities
- Lighting
- Redirected social footpaths
- Demolition of existing process and maintenance facilities
- Revegetation including new trees and hydroseeding

Phase 2 Improvements at Walnut Creek WTP

- South ballasted flocculation basins (1)
- South intermediate ozone pumping plant (2)
- South intermediate ozone contactor (3)
- South pre-ozone pumping plant (6)
- South ozone gas destruct vault (8)
- Two gravity thickeners (11)
- Thickened solids pump station (12)
- South ozone gas quenching vault (16)
- Large diameter buried pipelines

Figure 2-6 shows a simple schematic illustrating how the proposed pretreatment facilities would provide additional treatment prior to the existing filtration step at the Walnut Creek WTP. **Figure 2-7** shows a process flow diagram depicting the steps in the pretreatment process, and **Figure 2-8** shows the waste stream process flow with the new facilities.

Each new facility is described below. **Table 2-1** shows dimensions of Project components.

Lafayette WTP

The Project would also require raising the height of two hydraulic weirs located at the Lafayette WTP. The raised weirs will increase the water pressure in the Lafayette Aqueducts No. 1 and No. 2 to accommodate the hydraulic requirements to serve the new pretreatment processes at the Walnut Creek WTP. The following improvements are shown in **Figure 2-4** and would take place at the same time as the Phase 1 improvements at the Walnut Creek WTP.

Phase 1 Improvements at Lafayette WTP (number corresponds to facility ID in Figure 2-4)

- New Lafayette Weir No. 1 (1)
- Retaining wall
- Demolition of existing Lafayette Weir No. 1 (2)
- Modification of existing Lafayette Weir No. 2 to increase height by 10 feet (3)
- New large diameter buried pipelines
- Revegetation including new trees and hydroseeding

Figure 2-6: Treatment Schematic - Proposed Pretreatment Facilities at Walnut Creek WTP

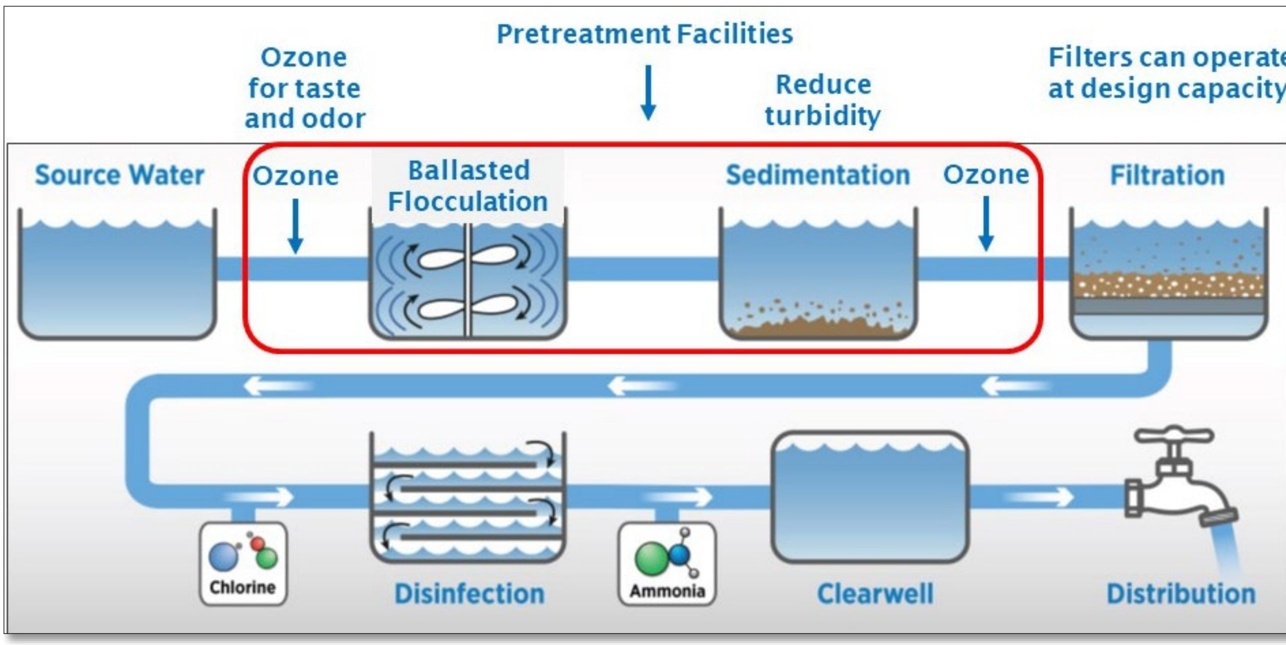
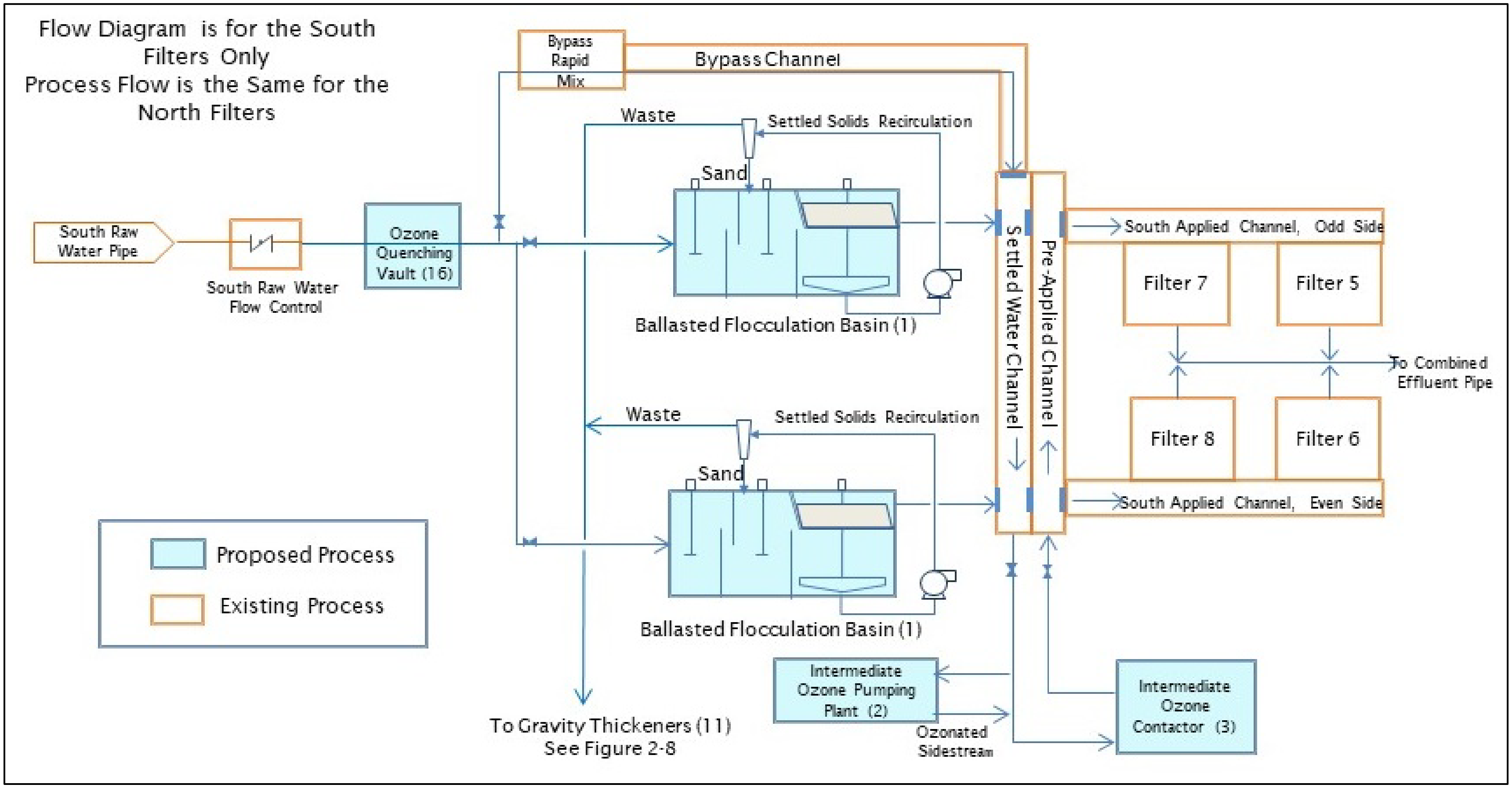


Figure 2-7: Pretreatment Process Flow Diagram[1]



[1] Pre-ozone pumping plants not shown, but pre-ozone pumping plants would inject ozone into the north and south untreated water pipelines, which are sufficiently long to provide the necessary pre-ozone contact time and therefore pre-ozone contactors are not needed.

Figure 2-8: Waste Stream Process Flow Diagram

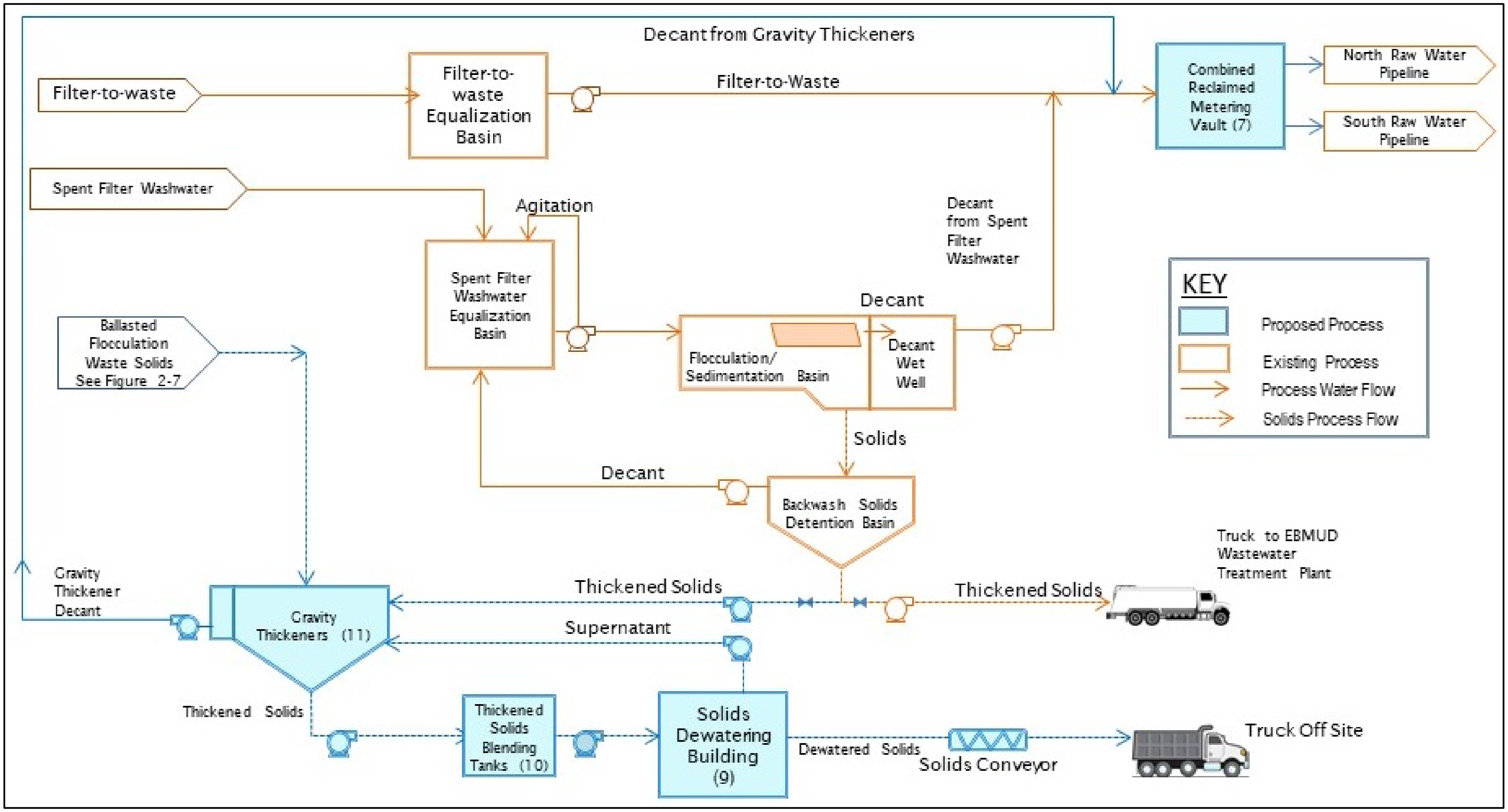


Table 2-2: Estimated Dimensions of Project Components

No.[1]	Project Component	Qty	Approximate Dimensions (length x width feet)	Depth below Existing Grade (feet)	Maximum Height Above Existing Grade (feet)
1	Ballasted flocculation basins with canopy	4	81 x 32	24	27
2	Intermediate ozone pumping plants	2	50 x 40	14	10
3	Intermediate ozone contactors	2	80 x 44	20-37	8
4	Ozone generation building	1	200 x 50	Above grade	17
5	LOX storage area	1	83 x 40	Above grade	20
6	Pre-ozone pumping plants	2	50 x 30	Above grade	10
7	Combined reclaimed metering vault	1	40 x 25	18	2
8	Ozone gas destruct vault with canopy	4	20 x 10	Above grade	12
9	Solids dewatering building	1	100 x 45	Above grade	32
9A	Truck loading canopy	1	45 x 30	Above grade	27
10	Thickened solids blending tanks	2	20 x 20	Above grade	16
11	Gravity thickeners	4	80 (diameter)	4-27	4
12	Thickened solids pumping plants	2	50 x 30	22-29	19
13	Solids transfer pumping plant	1	20 x 15	Above grade	10
14	Electrical facilities building	1	80 x 20	Above grade	12
15	Consolidated maintenance building	1	179 x 60	Above grade	27
16	Ozone gas quenching vault	2	30 x 25	10-22	4
17	Chemical storage building with canopy	1	93 x 23	Above grade	20
18	Hydrogen peroxide station with canopy	2	40 x 30	Above grade	15

[1] Numbers keyed to facility numbering in **Figure 2-3**
Note: for structures with canopies the height above existing grade reflects the height of the canopy, which is taller than the structure itself. Some canopies are above buried or partially buried structures.

2.5.2 Ballasted Flocculation Basins (1)

Ballasted flocculation is a high-rate sedimentation process that operates using conventional mixing with coagulants, followed by a series of baffles, to cause sediment and organics in the water to quickly settle out to the bottom of the basin. The resulting cleaner, untreated water is then directed to the in-line gravity filters. The highly concentrated sediments at the bottom of the basin drain to the gravity thickeners. Typical coagulants such as alum and polymer are used with microsand to produce larger clusters of solids called “floc” that settle after mixing. The microsand provides “ballast” to which the solids adhere with the aid of a polymer. The combination of polymer and alum with microsand increases the settling velocity of the “floc” particles by up to 20 times. Ballasted flocculation can quickly treat high turbidity water in a small footprint (i.e. turbidities greater than 50 NTU). When the incoming untreated water quality is relatively high, the ballasted flocculation basins can be bypassed. and the water sent directly to the in-line gravity filters.

The Project would include four open-air, ballasted flocculation concrete basins starting with the two north basins adjacent to the existing north filters being constructed during Phase 1, followed by two south basins adjacent to the south filters being constructed in Phase 2. Each basin is open-air to allow easy access for cleaning and maintenance. Each pair of concrete basins would be covered by a metal canopy to minimize algae growth and reduce weathering of the mechanical mixing equipment. There would be lighting along walkways and under the canopy. Each basin would be served by a 42-inch buried pipeline that would convey untreated water. The exterior color and architectural design would match that of the existing buildings at the Walnut Creek WTP, as shown in **Figure 2-9**. There would be a guardrail around the basins and the curved canopy would be constructed of a structural steel frame with a poured in place concrete foundation.

2.5.3 Intermediate Ozone Pumping Plants (2)

Intermediate ozone injection pumping plants would be located immediately adjacent to the ballasted flocculation basins, with one pumping plant to be constructed next to the north basins as part of Phase 1, and one adjacent to the south basins in Phase 2. The pumping plants would inject ozonated water into the pipelines connecting the channels between the ballasted flocculation basins and the intermediate ozone contactors. The pumping plants would be partially buried concrete structures similar to existing structures at the Walnut Creek WTP. Louvres on exterior walls would point north or south and there would be no louvres on the east side facing towards residences on Alfred Avenue.

2.5.4 Intermediate Ozone Contactors (3)

Intermediate ozone contactors are used to introduce ozone gas into the process flow. The north intermediate ozone contactors would be constructed in Phase 1 and the south intermediate contactors would be constructed in Phase 2. Both would be located near the respective intermediate ozone pumping plants and would be connected to the pumping plants by new 66-inch pipelines conveying water flow from the contactors to the filters. The intermediate ozone contactors would be buried concrete structures containing baffled concrete basins with concrete roofs. The north intermediate ozone contactor would be constructed in the location of the existing maintenance building, designed to be similar to existing structures at the Walnut Creek WTP.

Figure 2-9: Existing Buildings at the Walnut Creek WTP

2.5.5 Ozone Generation Building (4)

Ozone would be generated on-site from high purity compressed liquid oxygen (LOX) that would be trucked on-site and stored in adjacent pressure tanks at the Walnut Creek WTP. LOX would be converted to gaseous oxygen and then pass through ozone generators, which use controlled electrical discharges to produce ozone. There would be four operating ozone generators and one standby generator, with two generators dedicated for the north and south process trains. Ozone would then be conveyed by buried pipelines to the pre-ozone pumping plants and the intermediate ozone pumping plants and ultimately added to the process flow. The ozone generation building would be adjacent to the LOX storage area. The ozone generation building would be designed to match existing buildings at the site and would be constructed of cast-in-place concrete with a steel framed flat roof with a parapet for safety and to screen equipment.

2.5.6 Liquid Oxygen (LOX) Storage Area (5)

The LOX storage area would be located just east of the ozone generator building and would contain three horizontal temperature-controlled, pressure tanks that would store and supply the high purity oxygen that is needed to produce ozone. There would be two operational LOX tanks with one standby unit for redundancy. Each tank would have a capacity of 20,000 gallons, and two LOX tanks would have capacity for 10 days of storage at maximum expected usage rate. The tanks would be approximately 10 feet in diameter and approximately 45 feet long. The LOX storage area would include three vaporizers (two operational and one standby) to convert LOX to gaseous oxygen. Each vaporizer would be approximately 5 feet long and wide and approximately 16 feet high. The LOX storage area would be enclosed by fencing with a concrete wall to screen the tanks from view from the southern boundary of the Walnut Creek WTP site. The color and architectural design of the wall would match that of the existing structures at the Walnut Creek WTP.

2.5.7 Pre-Ozone Pumping Plants (6)

There would be two pre-ozone pumping plants, one for the north process train to be constructed in Phase 1, and one for the south process train to be constructed in Phase 2. Both would be located at the northwest corner of the Walnut Creek WTP site, near the location where untreated water enters the WTP. The pre-ozone pumping plants would be two-story buildings with the first story below grade. The pumping plants would inject ozone into the north and south untreated water pipelines, which are approximately 1,200 feet and 1,600 feet long, respectively. Both pipelines are sufficiently long to provide the necessary pre-ozone contact time and therefore pre-ozone contactors are not needed. The pre-ozone pumping plants would be constructed of cast-in-place concrete with a steel framed gabled roof designed to match existing structures at the Walnut Creek WTP. Louvres on exterior walls would point east or west and there would be no louvres on the north side facing towards residences on Quail Court.

2.5.8 Combined Reclaimed Metering Vault (7)

The new pretreatment process would add another water waste stream to be reclaimed: decant water[1] from the gravity thickeners, which would include water from the ballasted flocculation tanks, thickened solids pumping plant and dewatering building. The reclaimed water would be conveyed

[1] Decant water is water that has separated from solids in the gravity thickeners and is removed from the layer of water above the solids.

through the combined reclaim pipeline to the new combined reclaimed metering vault, which would convey flows back into both the north and south untreated water pipelines. Reclaimed water would be blended with the incoming untreated water from the Mokelumne Aqueducts and would become part of the incoming water supply to the Walnut Creek WTP. The combined reclaimed metering vault would be upstream of the pre-ozone injection points in the location of the existing reclaim vault. The new vault would be almost entirely buried with only a small portion of the top of the vault visible above grade.

2.5.9 Ozone Gas Destruct Vaults (8)

The ozone gas destruct system would convert any residual ozone gas that is not dissolved in the water into oxygen before releasing the oxygen to the atmosphere. The following five ozone destruct vaults would be built across the site:

- Pre-ozone injection gas destruct to treat off-gas from the north and south pipeline contactors near the injection point (to be constructed in Phase 1).
- North pre-ozone destruct for the north process train to treat off-gas at the downstream end of the north pipeline contactor and air relief valves along the north untreated water pipeline (to be constructed in Phase 1).
- South pre-ozone destruct for the south process train, to treat off-gas at the downstream end of the south pipeline contactor and air relief valves along the south untreated water pipeline (to be constructed in Phase 2).
- North intermediate ozone gas destruct to treat off-gas from the north intermediate ozone contactor (to be constructed in Phase 1).
- South intermediate ozone gas destruct to treat off-gas from the south intermediate ozone contactor (to be constructed in Phase 2).

Ozone would flow into the gas destruct vaults from high points in the pipeline, from the pre-ozone pumping plants, and from the headspace of the intermediate ozone contactors. At the destruct vaults, ozone would flow into a chamber that converts the ozone to oxygen by passing it through a metal catalytic surface (similar to a vehicle catalytic converter). Each ozone destruct vault would be covered by an open span steel canopy with concrete retaining walls at the base designed to be similar to existing structures at the Walnut Creek WTP.

2.5.10 Solids Dewatering Building (9)

The solids dewatering building would be a two-story, concrete structure housing centrifuges that would mechanically dewater solids from the thickened solids blending tanks. The centrifuges would produce dewatered, compacted solids that would be loaded by screw conveyors into trucks at a truck loading station in front of the building. Decant water from the centrifuge would be collected in a wet well and pumped to the gravity thickeners. The building would be cast-in-place concrete with a steel framed flat roof. There could be a canopy on the south side of the building to accommodate loading of the trucks that would haul away solids for disposal at a landfill. The building would be designed to be architecturally similar to existing structures at the Walnut Creek WTP with the canopy roof structure clad in grey metal to match the existing Chemical Storage Building Canopy. There would be paved parking in front and around the facility.

2.5.11 Thickened Solids Blending Tanks (10)

The thickened solids blending tanks would be used to blend a dewatering polymer with solids from the gravity thickeners and provide a homogenous feed to the centrifuges in the dewatering building. Solids handling pumps from the blending tanks would supply the centrifuges, with additional polymer injected at the centrifuge inlet pipe. The concrete tanks would be constructed directly adjacent to the dewatering building and would be partially buried with the visible portion of the structure designed to be architecturally similar to existing structures at the Walnut Creek WTP.

2.5.12 Gravity Thickeners (11)

Four partially-buried gravity thickeners would receive waste solids flows directly from the ballasted flocculation process and intermittent flows of solids from the existing backwash solids detention basin. Decant water from the dewatering process would also be pumped to the gravity thickeners. The thickening process would be assisted by addition of polymer. The gravity thickeners dilute waste streams and maximize the reclaimed water flow that would be pumped to the combined reclaimed metering vault at the head of the Walnut Creek WTP. Thickened solids would collect at the bottom of the gravity thickeners and would be periodically pumped to the solids blending tanks prior to dewatering. Decant water from the gravity thickeners would be collected in a wet well and pumped to the combined reclaimed metering vault through the combined reclaim pipeline. Two gravity thickeners would be constructed in Phase 1 with two more constructed in Phase 2. The structures would be concrete, and would be almost entirely buried with the visible portion of the structures designed to be similar to existing structures at the Walnut Creek WTP

2.5.13 Thickened Solids Pumping Plants (12)

The thickened solids pumping plants would contain solids handling pumps to pump thickened solids from the gravity thickeners to the blending tanks and a solids inflow manifold to distribute flows to one or both gravity thickeners as needed. Each pumping plant would also have a wet well for clarified flows from the gravity thickeners and reclaim pumps to pump water to the combined reclaimed metering vault. There would be a thickened solids pump station between each pair of gravity thickeners with one constructed in Phase 1 and one constructed in Phase 2. The buildings would be cast-in-place concrete with a flat steel framed roof similar to existing structures at the Walnut Creek WTP.

2.5.14 Solids Transfer Pumping Plant (13)

The solids transfer pumping plant would pump wet solids from the existing backwash solids detention basin to the new gravity thickeners. The pumping plant would be located near the existing solids basins. The building would be cast-in-place concrete with a steel framed flat roof and would be designed to be similar to existing structures at the Walnut Creek WTP. Louvres on exterior walls would point east or west and there would be no louvres on the north side facing towards residences north of the Walnut Creek WTP.

2.5.15 Electrical Facilities Building (14)

The electrical facilities building would include a unit substation with transformer and switchgear, a 2,700 kW to 4,500 kW WTP backup generator, and fuel storage. The electrical building would be located north of the ozone generator building and would be a prefabricated building erected on a concrete slab similar to other structures at the Walnut Creek WTP. The purpose of the electrical facilities building is to support the electrical load required to operate the new facilities associated with the Project. There would be paved parking in front of and around the facility.

2.5.16 Consolidated Maintenance Building (15)

The consolidated maintenance building would be constructed to replace the existing electrical and instrument shops and locker facilities that would be demolished to allow for construction of the north intermediate ozone contactor in Phase 1 of the Project. In addition to locker facilities, the building would include utility areas, workstations, supervisor offices, a kitchenette, and bathrooms for maintenance staff. The existing mechanical shop would be relocated to the consolidated maintenance building so that the mechanical shop can be repurposed as storage space for mechanical equipment associated with the nearby washwater reclaim process.

The consolidated maintenance building would accommodate maintenance activities and material inventory needed to support the additional pretreatment processes that would be constructed as part of the Project. To increase the efficiency of maintenance activities, other maintenance facilities that are currently distributed around the Walnut Creek WTP would be consolidated in the new building. The building would also have indoor storage to replace informal storage locations at the Walnut Creek WTP, which consist of Conex boxes, outdoor spaces, and open areas in process buildings. The consolidated maintenance building would also include the alternate emergency operations center room that consolidates and replaces the existing emergency operations facilities on site.

The consolidated maintenance building would be a two-story structure featuring a mix of cast-in-place concrete and steel frame construction. Shops and storage spaces would be on the first floor with offices and training rooms on the second floor. The entire first floor of the building plus the two-story portion of the eastern end of the building that houses the mechanical shop would be of concrete construction. Steel frame construction would be used for the portion of the second floor that houses offices and training rooms. An exterior steel stair would allow access to the roof for servicing and maintenance. The east end of the roof above the mechanical shop would be flat with a parapet for life safety and equipment screening. The steel frame portion would have a flat roof with a parapet towards the front facade, and a curved clerestory at the rear. Materials and finishes would be designed to be architecturally similar to existing buildings at the Walnut Creek WTP. There would be paved parking in front of and around the facility.

2.5.17 Ozone Gas Quenching Vaults (16)

Ozone that is dissolved in the water must be quenched (reduced to oxygen and water) by adding a chemical quenching agent before the water enters the next treatment process. There are four locations where quenching agent is added: north pre-ozone, south pre-ozone, north intermediate ozone, and south intermediate ozone. For pre-ozone, the quenching agent is injected into the main flow in the untreated water pipeline at the north and south flow split vaults. There would be two ozone gas quenching vaults, with the north vault being constructed in Phase 1 and the south vault in Phase 2. The ozone gas quenching vaults would be almost entirely buried with ozone destruct equipment covered by a canopy on the roof of the vaults, designed to be similar to other structures at the Walnut Creek WTP.

2.5.18 Chemical Storage Building (17)

The new pretreatment processes would require storage of additional alum and polymer at the existing chemical storage building. Two new 8,000-gallon alum storage tanks will be located inside the chemical building at the location currently reserved for "future chemicals". Two new 12,000-gallon alum storage tanks will be located outside in a new storage area covered with a new canopy constructed adjacent to the southwest end of the existing chemical storage building. Polymer would be stored in two new 6,000-gallon tanks inside the existing chemical storage building. Half of the tanks would be installed in Phase 1 and half in Phase 2. The new canopy covering the outside alum storage tanks would be made of tube steel columns with steel cross braces supported by a cast in place concrete foundation and would be designed to match the existing canopy on the north wall of the building. The roof would be framed with steel I-beams supporting a metal deck.

2.5.19 Hydrogen Peroxide Stations (18)

Two hydrogen peroxide stations would be installed during Phase 1, and each would include an approximate 5,000-gallon tank and feed system to store hydrogen peroxide needed to quench ozone. One hydrogen peroxide station would be on the west side of the Walnut Creek WTP near the pre-ozone pumping plants, and one hydrogen peroxide station would be on the east side of the Walnut Creek WTP near the parking lot for the main office. Each station would be covered by a canopy, which would use a combination of structural steel frame and cast in place concrete foundation. The frame will consist of tube steel V-columns and curved I-joists supporting the roof, which would be designed to be similar to existing structures at the Walnut Creek WTP.

2.5.20 Lafayette Weirs (1, 2 and 3)

As part of the new pretreatment processes at the Walnut Creek WTP, hydraulic modifications would be required at the Lafayette WTP during Phase 1 improvements to increase the water pressure within the aqueducts serving the Project (**Figure 2-4**). Modifications include demolishing the existing Lafayette Weir No. 1, the construction of a new Lafayette Weir No. 1, increasing the height of the existing Lafayette Weir No. 2 by approximately 10 feet, and new pipelines connecting to the weirs. Increasing the height of the weirs would increase the water pressure in the existing Lafayette Aqueducts No. 1 and No. 2 to accommodate the new pretreatment processes at the Walnut Creek WTP. A new Lafayette Aqueduct pipeline bypass and Lafayette Weir No. 1 structure matching the new height of the existing weir would first be constructed, after which the existing Lafayette Weir No. 1 structure would then be demolished. The height of the existing Lafayette Weir No 2 structure would be increased last.

2.5.21 Large Diameter Buried Pipelines

The following large diameters pipelines would be constructed in Phase 1 of the Project unless called out for Phase 2.

- Walnut Creek WTP: 78-inch untreated water pipeline that would need to be relocated to allow construction of the consolidated maintenance building and electrical facilities, which would be built along the alignment of the existing pipeline;
- Walnut Creek WTP: 42-inch pipelines conveying water to the ballasted flocculation basins with one pipeline serving the north ballasted flocculation process train (to be constructed in

Phase 1) and one pipeline serving the south ballasted flocculation process train (to be constructed in Phase 2);

- Walnut Creek WTP: 66-inch ballasted flocculation bypass pipeline to allow water to be sent directly to the existing filters;
- Walnut Creek WTP: 66-inch pipelines connecting the ballasted flocculation settled water channel to the intermediate ozone contactors (one for the north process train and one for the south process train);
- Walnut Creek WTP: Pipelines from intermediate ozone contactor to pre-applied channel, which conveys flow to the filters;
- Walnut Creek WTP: 66-inch pipeline as part of intermediate ozone facility; and
- Walnut Creek WTP: 24-inch combined reclaim pipeline that would return water to the new combined reclaimed metering vault.
- Lafayette WTP: 72-inch Lafayette Weir No. 1 bypass pipeline
- Lafayette WTP: 54-inch Lafayette Weir No. 1 and Lafayette Weir No. 2 interconnection pipeline

In addition to the large diameter pipelines a number of smaller pipelines would be constructed to convey flows between treatment processes and between waste processes.

2.5.22 Staging Areas

At the Walnut Creek WTP, as shown in **Figure 2-3**, three new staging areas titled Staging Areas 1 through 3 would be developed along the southern edge of the Walnut Creek WTP site. Staging Area 4 would use the existing parking area at the entrance to the Walnut Creek WTP at Larkey Lane. All the staging areas would be used for construction staging during both phases of construction.

At the Lafayette WTP, existing paved areas north and south of the existing weirs would be used for construction staging during Phase 1.

More information on staging areas is provided in *Section 2.6.1, Construction Activities*.

2.5.23 Paved Roadways

Figure 2-3 shows the new and proposed roads and parking at the Walnut Creek WTP. A portion of the north access road would be relocated to accommodate construction of the new electrical facilities and consolidated maintenance building. Additionally, the existing gravel southwest access road next to the ozone generator building, LOX storage, and existing chlorine contact chamber would be paved to accommodate truck traffic.

Figure 2-4 shows the proposed paving around the new Lafayette Weir No. 1 for access around the new structure.

2.5.24 Paved Parking

There are currently 83 parking spots at the Walnut Creek WTP. Approximately 8 parking spots would be removed to accommodate the intermediate ozone pumping plants and approximately 27 new parking spots would be added to the paved areas around the proposed consolidated maintenance and electrical buildings, as shown in **Figure 2-3**. The additional spaces would accommodate vehicle parking for maintenance staff and for emergencies when the maintenance building would be used as a backup emergency operations center. During emergencies approximately 30 members of the emergency operations team would need to report to the consolidated maintenance building. Additional on-site parking will be available at Staging Area 1 after construction.

2.5.25 Site Security

Fencing and Cameras

A portion of the existing security fencing at the Walnut Creek WTP would need to be relocated to accommodate the new pretreatment facilities. Approximately 4,700 feet of new security fencing would be located along the Walnut Creek WTP property line, as shown in **Figure 2-3**. The new security fencing would consist of double EBMUD standard security fencing: 8-foot-tall, black vinyl coated, 1-inch mesh, with double v-arm three strand barbed wire, and a maximum post spacing of 10 feet (**Figure 2-10**). Security cameras would be located around the facility, as necessary.

Figure 2-10: Security Fence

2.5.26 Stormwater Facilities

The Project would create new impervious areas at the Walnut Creek WTP and rainfall runoff from those areas would be directed to existing and new storm drain pipelines, v-ditches, bio-swales and energy dissipators. New bioretention facilities would be constructed around the Walnut Creek WTP site as needed to accommodate the additional runoff from new impervious areas. No off-site drainage system improvements would be required.

2.5.27 Lighting

New lighting would be provided at the Walnut Creek WTP to allow safe access and viewing of process and work areas. There would be pole-mounted lights at east and west sides of the gravity thickeners, pole-mounted lights along the access road adjacent to the electrical building, consolidated maintenance building, ozone generator building and LOX storage area. Pole mounted lighting would be installed at the northwest corner of the site near the pre-ozone pumping plants. All lights would be focused downward to minimize light pollution to the surrounding neighborhood while still providing sufficient light for operations and security staff.

2.5.28 Redirected Social Footpaths

As shown in **Figure 2-3**, there are existing dirt social footpaths that pass through and around the EBMUD-owned Walnut Creek WTP property. A social footpath is an unofficial, user-created path that forms over time, established by the community through regular use. A portion of the existing dirt social footpath was formerly a segment of the East Bay Regional Park District Briones to Mt. Diablo Regional Trail that was formally re-routed outside fencing installed around the Walnut

Creek WTP improvements in 2005. The existing dirt social footpaths are approximately 1 to 2 feet in width and are not maintained. During construction these social footpaths would be temporarily closed for the duration of construction to allow construction equipment to operate and to ensure public safety. Closed social footpaths on EBMUD property would be clearly marked with EBMUD signage indicating the expected duration of the temporary footpath closure. Following construction, security fencing would be installed around new facilities, requiring permanent redirection of social footpaths around the new facilities. The social footpaths would be redirected outside the new fence line as needed but would be kept as close to their existing locations as possible. The redirected portions of the social footpaths outside the security fencing would be dirt, graded flat, approximately 1 to 2 feet in width similar to the existing social footpaths, and would continue their current status and would not be maintained by EBMUD.

2.5.29 Demolition of Existing Facilities

At the Walnut Creek WTP, the Project would include demolition of the existing solids detention basin and solids detention decant pump, stormwater detention basin, chemical tank pad, rapid mix facilities, pipelines, buried vaults, electrical power facilities, and chemical trenches throughout the site. Additionally, existing electrical and instrument shops and locker facilities, power and generator buildings, would be demolished. At the Lafayette WTP, the existing Lafayette Weir No. 1 and associated piping would be demolished after the new Lafayette Weir No. 1 is constructed.

2.5.30 Screening and Landscaping

Most of the facilities at the Walnut Creek WTP would be screened by topography and existing vegetation and structures, so extensive plantings to screen structures would not be required. As shown in **Figure 2-3**, approximately eighteen 24-inch box trees would be planted northwest of the proposed gravity thickeners to screen them from view from the Briones to Mt. Diablo Regional Trail and the neighborhood to the north of the site. New trees would be a combination of coast live oak (*Quercus agrifolia*) and valley oak (*Quercus lobata*), both of which are currently present at the site. Both oak species are drought tolerant California natives. Additionally, coast live oak is evergreen and would provide year-round screening. EBMUD's standard hydroseed mix of native grasses is proposed underneath the new tree plantings. The proposed landscaping would require minimal irrigation and maintenance, although temporary irrigation (up to about five years) would be required to establish trees.

Bioretention areas would be vegetated with plantings based on *C.3 Stormwater C.3 Guidebook, Appendix B*, which includes recommendations for soils, plantings and irrigation for bioretention facilities. Plants would be drought tolerant, suitable for the Contra Costa County climate, adapted to well-drained soils with low fertility and would allow infiltration of stormwater.

At the Lafayette WTP approximately seven 24-inch box trees would be planted downslope around the new weir structure (see **Figure 2-4**). After Lafayette Weir No. 1 is demolished, the area would be revegetated using EBMUD's standard hydroseed mix. A retaining wall would be constructed downslope of the proposed Lafayette Weir No. 1, which would provide stability to the slope while preserving three existing coast live oak trees at the bottom of the slope. The area south of the proposed retaining wall would be planted with new oak plantings, with hydroseeding underneath the new tree plantings. New trees would be a combination of coast live oak (*Quercus agrifolia*) and valley oak (*Quercus lobata*), both of which are currently present at the site.

2.6 Project Construction

2.6.1 Construction Activities

Table 2-3 provides the estimated duration of each construction phase and approximate schedule for construction of each facility.

Table 2-3: Construction Duration

	Approximate Duration (months)
Phase 1 ***Walnut Creek WTP*** Site preparation and mobilization Yard piping and electrical Consolidated Maintenance Building (15) Electrical Facilities Building (14) Solids Dewatering Building, Thickened Solids Blending Tanks (9/10) Gravity Thickeners (north) (11) Thickened Solids Pumping Plant (north) (12) Truck Loading Canopy (9A) Ozone Generation Building (4) Liquid Oxygen (LOX) Storage Area (5) Pre-Ozone Pumping Plant (north) (6) Chemical Storage Building (17) Solids Transfer Pumping Plant (13) Hydrogen Peroxide Station (north) (18) Hydrogen Peroxide Station (south) (18) Ozone Gas Quenching Vault (north) (16) Ozone Gas Destruct Vault (north) (8) Combined Reclaimed Metering Vault (7) Ballasted Flocculation/Intermediate Ozone Pumping Plant (north) (1/2) Intermediate Ozone Contactors (north) (3) Demolish existing maintenance and electrical buildings Phase 1 Off haul excavation spoil Final grading and paving Final cleanup and landscaping Complete final inspections ***Lafayette WTP*** Site preparation and mobilization Yard piping and electrical New Lafayette Weir No.1 (1) Demolish existing Lafayette Weir No.1 (2) Raise Lafayette Weir No.2 (3) Final grading and paving Complete final inspections	39
Phase 2 ***Walnut Creek WTP*** Site preparation and mobilization Yard piping and electrical Demolition Ballasted Flocculation/Intermediate Ozone Pumping Plant (south) (1/2) Intermediate Ozone Contactors (south) (3) Gravity Thickeners (south) (11) Pre-Ozone Pumping Plant (south) (6) Thickened Solids Pumping Plant (south) (12)	20

	Approximate Duration (months)
Ozone Gas Quenching Vault (south) (16) Ozone Gas Destruct Vault (south) (8) Off haul excavation spoil Final grading and paving Final cleanup Complete final inspections	

Site Preparation and Mobilization

Site preparation at the Walnut Creek WTP would begin with excavating and developing the three new staging areas (see **Figure 2-3**), which includes construction of retaining walls, closing social footpaths, relocating drainage ditches, and site grading. Mobilization and site work at the Walnut Creek WTP would include construction of perimeter fencing and gates (including relocation of the existing fence). At both water treatment plants, contractor equipment, construction trailers and parking areas would be developed within the staging areas. Vegetation would be cleared as needed and would include removal of some trees in areas where construction would occur. Tree removal would be phased and would occur as specific construction areas are prepared. Where possible existing mature trees would be preserved.

Table 2-4 shows trees that would be removed as part of the Project at both the Walnut Creek WTP and Lafayette WTP to accommodate the new facilities. Approximately 86 trees would have to be removed at the Walnut Creek WTP and approximately 28 trees would be removed at the Lafayette WTP. Additional information regarding trees can be found in **Appendix D** (Arborist Condition Reports).

Table 2-4: Tree Removal for Project

Site and Common Name	Scientific Name	Quantity to be Removed
Walnut Creek WTP		
Coast live oak	*Quercus agrifolia*	28
Valley oak	*Quercus lobata*	19
Buckeye	*Aesculus californica*	1
Aleppo pine	*Pinus halepensis*	16
Peruvian pepper tree	*Schinus molle*	17
Chinese pistache	*Pistacia chinensis*	1
Raywood ash	*Fraxinus angustifolia*	4
Lafayette WTP		
Coast live oak	*Quercus agrifolia*	26
California bay laurel	*Umbellularia californica*	2

Excavation

At the Walnut Creek WTP, a number of the new facilities would require excavation to create level pads for above-ground facilities or to construct buried or partially buried facilities including the ballasted flocculation basins, intermediate ozone pumping plants, intermediate ozone contactors, combined reclaimed metering vault, gravity thickeners, thickened solids pumping plants, and ozone gas quenching vaults. Phase 1 construction would require excavation of approximately 44,000 cubic yards (CY) of material and placement of approximately 14,000 CY of fill. Off haul of approximately 30,000 CY would be required during Phase 1. Because some excavated material may not be suitable for reuse as backfill below structures, it is estimated that approximately 9,000 CY of granular material would need to be imported during Phase 1. At the Lafayette WTP, construction would require excavation of approximately 2,000 CY of material and placement of approximately 3,000 CY of fill; import of fill material will be required.

Phase 2 construction would require excavation of approximately 27,000 CY of material and placement of approximately 7,000 CY of fill. Off haul of approximately 20,000 CY would be required. Approximately 4,000 CY of granular material would need to be imported during Phase 2.

Staging and Stockpile Areas

As described above and shown in Figure 2-3, three new staging areas would be developed along the southern boundary of the Walnut Creek WTP site, called Staging Areas 1 through 3. The existing parking area at the entrance to the Walnut Creek WTP at the end of Larkey Lane would also be used for staging, shown as Staging Area 4. The Staging Areas would be used for both Phases of construction. Staging Areas 1 through 3 would be used for contractor equipment and crew parking, office trailers for use by EBMUD and the contractor, and for stockpiling of excavated soils and materials. Other temporary stockpile areas would be spread around the Project site in existing areas adjacent to sites where construction would occur. Excess excavation stockpiles would be hauled off site periodically as needed. EBMUD would store as much excavated soil on site as possible and reuse the soils as Project backfill. Foundation and engineered backfill materials would be imported, temporarily stockpiled in designated staging and stockpile areas or deposited adjacent to the immediate work area. Staging Area 4 would be used for material and equipment storage on the western half and for worker parking on the eastern half - no aggregate material stockpiling (soil, gravel, etc.) or construction trailers would be allowed. Staging Area 4 would also have a one-way access route for ingress and egress.

At the Lafayette WTP, existing paved areas north and south of the existing weirs will be used for construction staging during Phase 1, including contractor equipment and crew parking and stockpiling of excavated soils and materials.

2.6.2 Structural Foundations

Depending on the structure and the subsurface conditions, the foundations for most structures would be either mat foundations or continuous footings. In some cases where old fill is present, the building footprint would be over-excavated to remove old fill before new fill is placed and compacted in lifts to achieve the finished pad grade. The electrical building, ozone storage vaults, and chemical storage canopy would require construction of drilled piers for foundations. A design-level subsurface geotechnical investigation was prepared to generate recommendations for the Project foundations. The recommendations that are developed from the geotechnical investigation results including foundation types and construction methods, drilled pier types, and depths of foundations would be incorporated into the final design.

2.6.3 Subsurface Structure Installation and Construction

Subsurface structures, including ballasted flocculation basins, gravity thickeners, pumping plants and vaults would be constructed with cast-in-place concrete. The depth of each structure would be extended to the depth of excavation shown in **Table 2-2**. Construction would include installation of a form for the concrete structure, placing reinforcing steel, pouring concrete within the form, curing of the concrete, testing, and removal of the form. The open excavation around each concrete structure would be backfilled and compacted to meet engineering specifications, following construction.

2.6.4 Building Construction

Buildings would be constructed from concrete poured in place. The ozone generation building and solids dewatering building would be constructed on footings or a mat foundation. The consolidated maintenance building would be constructed on footings. The chemical storage canopy would be constructed on drilled pier foundations. Interior plumbing, interior and exterior doors and windows, and an HVAC system would be installed in each building. Walls would be constructed in the consolidated maintenance building, and the consolidated maintenance building roof would be delivered, set in place with a crane, and attached to the structure. After building construction is completed, mechanical and electrical equipment would be installed in the ozone generation building, solids dewatering building and consolidated maintenance building. Restroom facilities, kitchen facilities, and office equipment would be installed in the consolidated maintenance building before transfer of materials from the existing on-site maintenance facilities and sheds to the consolidated maintenance building. The existing maintenance sheds/trailers would be removed from the site or repurposed for WTP needs after the consolidated maintenance building is fully constructed and functional.

2.6.5 Storm Drainage and Bioretention Facilities

Stormwater facilities to serve the proposed improvements would be designed to be consistent with the Contra Costa Clean Water Program, Provision C.3 of the Municipal Regional Permit for stormwater discharges, which are regulated by the Regional Water Quality Control Board. Because the Project would create more than one acre of new impervious area, the Project would include both treatment and flow controls for stormwater runoff. These controls would ensure that runoff from the new facilities does not degrade or erode receiving waters once runoff leaves the site.

Stormwater generated from the new Phase 1 facilities would be directed to new and existing stormwater drains and three new bioretention basins that would be constructed north of the gravity thickeners and in the northwest and southeast corners of the Walnut Creek WTP site (see **Figure 2-3**). The approximate 9,000-square-foot bioretention pond would be excavated to a total depth of approximately 3 to 5-feet. A perforated pipeline would be installed at the base of the bioretention pond and would be directed to the existing storm water discharge locations on site. The bioretention basin would be filled with a layer of permeable gravel and a layer of native topsoil material, excavated on site. The bioretention basin then would be planted with shrubs and hydroseed. Additional, but much smaller, bioretention basins may be designed and constructed on site based on the final paving design at the site.

Operational Testing

Once all construction is complete, testing, startup and training for the new treatment facilities would be conducted. Individual Project component (facility) testing would occur as each component is completed.

Demolition

Once replacement facilities have been constructed at the Walnut Creek WTP, components within the existing sludge holding basin, pipelines, buried vaults, electrical power facilities, and chemical trenches would be demolished and removed. Processed demolition debris would be transported to a temporary stockpile on site. Demolition debris would be recycled to the extent possible, with all concrete and rebar recycled and the remaining material off hauled for disposal at an approved landfill. At the Lafayette WTP the existing Lafayette Weir No. 1 would be demolished and demolition debris would be hauled to an approved landfill.

Site Restoration

At the end of each construction phase, all construction equipment, fencing, materials, and temporary construction trailers would be removed from the Walnut Creek and Lafayette WTPs. Staging Areas 1 through 3 at the Walnut Creek WTP would be retained for future use. Final landscaping, lighting, and paving would be completed as needed at each WTP.

2.6.6 Construction Equipment and Trips

Project Equipment

Project construction is expected to involve the following equipment:

- Bobcat
- Backhoe
- Excavator
- Compactors
- Water truck
- Dump trucks
- Concrete boom pump truck
- Fuel truck
- Delivery truck
- Haul truck
- Concrete truck
- Porta Can truck
- Dozer
- Loader
- Forklift
- Compressor
- Crane
- Driller
- Manlift
- Trencher
- Welding machine
- Paving equipment
- Cutting torch
- Pipe fitter tools

Vehicle Trips

The Project would require EBMUD staff, construction workers, and construction truck traffic to access the Walnut Creek WTP and Lafayette WTP sites. Traffic would access the Walnut Creek WTP site via the most direct route from Interstate 680 (I-680), exiting the freeway at North Main Street and traveling west down San Luis Road to Larkey Lane. Traffic would access the Lafayette WTP from State Route 24 (SR-24), exiting on Acalanes Road and traveling east down Mt. Diablo Boulevard. During construction, trucks would deliver equipment and materials and haul out excavated soil and demolition debris. The count of daily truck trips would vary over the duration of construction, with a maximum of about 68 round trips per day during Phase 1 and a maximum of about 75 round trips per day in Phase 2 (see **Table 2-5**). During Phase 1 construction maximum daily worker round trips would range from approximately 20 to 30; during Phase 2 maximum daily worker round trips would range from approximately 24 to 25 (see **Table 2-5**).

Table 2-5: Maximum and Average Daily Worker Vehicle Trips and Truck Trips

Year	Maximum Daily Worker Vehicle Trips	Average Daily Worker Vehicle Trips	Maximum Daily Truck Trips	Average Daily Truck Trips
Phase 1				
2027	20	15	12	12
2028	25	18	68	15
2029	29	21	52	15
2030	30	16	47	7
Phase 2				
2031	25	18	75	15
2032	24	16	73	12

Notes:
One trip equals drive in plus drive out.
Construction in 2027 would start in August for a total of five months.
Construction in 2030 would end in November, for a total of 11 months.
For truck trips, the Phase 2 construction was conservatively assumed to start 6 months after Phase 1 as a placeholder only to determine manpower and traffic planning because the start of Phase 2 has not yet been determined.
Construction in 2031 would start in April, for a total of nine months.
Construction in 2032 would end in November, for a total of 11 months.

2.6.7 Construction Schedule and Hours

Phase 1 is scheduled to begin with site preparation and mobilization in mid-2027 and end with final landscaping, site restoration, start-up and testing. The Phase 2 construction will take place at a later date depending on future untreated water quality and water demand. Construction of Phase 1 is expected to take approximately 3 ¼ to 5 years and will depend on several factors including construction equipment and material supply availability, labor availability, number of days with extreme weather (i.e., rain, heat), operational needs for the Walnut Creek WTP, and the contractor's work plan. Construction of Phase 2 is estimated to take approximately 2 years but could take longer for the same reasons as Phase 1. Given the potential range in the construction duration, the shorter construction duration for Phase 1 and Phase 2 are utilized in the impact analysis in Chapter 3 to capture a worst-case scenario where construction activities (e.g., truck trips, noise generation, diesel emissions) are the most intense.

Construction typically would occur between 7:00 a.m. and 6:00 p.m., Monday through Friday, and typically would include 8-hour workdays. Extended work hours, early starts, and weekend work may occasionally be required for large concrete pours or critical pipeline shutdowns at the Walnut Creek WTP. No other construction activities would be permitted on weekends or during EBMUD holidays during any work period except for emergencies or for critical work with prior notice to and approval by EBMUD. No nighttime construction is anticipated at either the Walnut Creek WTP or Lafayette WTP sites. Construction personnel may arrive and depart 30 minutes before or after regular construction work times.

Concrete delivery trucks would be allowed to access the Walnut Creek WTP site from 6:00 a.m. to 6:00 p.m. to accommodate extended concrete pours. Early and/or extended concrete delivery days are estimated to occur on approximately 40 days of the approximately 3-year construction period for Phase 1, and on approximately 15 days of the approximately 2-year construction period for Phase 2. *Sections 3.11, Noise and Vibration*, and *3.13, Transportation*, discuss construction traffic schedule requirements and assumptions in greater detail.

2.6.8 Construction Water Supply and Discharge

Water would be needed during construction for dust control, as well as equipment washdown, cleaning, and disinfection. Construction water would likely be suppled on site.

Dewatering may be required during temporary excavations to create a dry work area in any areas where groundwater is encountered during excavation, or where rainfall pools during wet weather. Pumps would be used to extract the water and pump to temporary storage tanks. The water would be tested and treated in accordance with state and federal regulations before discharge to the storm drain system if appropriate.

2.6.9 Construction and Demolition Waste Handling

EBMUD would require construction contractors to prepare plans for recovering, reusing, and recycling solid waste that is generated through demolition, excavation, and construction activities, to the extent feasible. The plans would identify materials that could be reused on site and materials to be hauled away for off-site disposal at approved receiving sites. Disposal would occur in a manner consistent with all applicable local, state and federal regulations.

2.6.10 Construction Lighting

Based on the construction hours described in *Section 2.6.3*, the need for construction lighting would be infrequent. When lighting is needed for construction purposes, shielded lighting would be used to reduce the potential for light to shine into neighboring properties.

2.7 Operations

2.7.1 Water Treatment Chemical Usage

There are seven existing chemicals systems currently in use at the Walnut Creek WTP that EBMUD would continue to use to support the original and improved aspects of the facility after Phase 1:

- Polyaluminum chloride (PACl) as a primary coagulant injected at the rapid mix;
- Cationic polymer, also injected at the rapid mix;
- Sodium hypochlorite (i.e., concentrated liquid bleach) for disinfection upstream of the applied channel, upstream and downstream of the chlorine contact chamber, at the treated water injection structure in case of emergency, and within the Lafayette No. 1 and 2 Aqueducts;
- Fluoride for post-treatment fluoridation upstream of the chlorine contact chamber;
- Caustic soda for post-treatment pH control downstream of the chlorine contact chamber;
- Aqueous ammonia for post-treatment chloramination, downstream of the chlorine contact chamber; and
- Solids conditioning (non-ionic) polymer at the spent washwater flocculation / sedimentation basin.

The new pretreatment process would include the following new chemical systems at the Walnut Creek WTP:

- Alum would be used as the primary coagulant upstream of the ballasted flocculation basins, in the ballasted flocculation rapid mix, and as a filter aid in the piping to the applied channel. There would be two approximate 8,000-gallon tanks located inside the existing chemical building and two approximate 12,000-gallon tanks located outside and adjacent to the chemical building under the new chemical storage canopy;
- Pretreatment anionic polymer would be injected in the second basin of the ballasted flocculation and added at the ballasted flocculation bypass rapid mix. Polymer would be stored in two approximate 6,000-gallon tanks inside the existing chemical storage building;
- Microsand would be added along with polymer at the second basin of the ballasted flocculation and would be stored close to the ballasted flocculation basins;
- Dewatering/solids conditioning polymer would be used in the gravity thickening and dewatering processes and would be stored in large totes in the new dewatering building;
- Hydrogen peroxide would be used for ozone quenching and would be stored in approximate 5,000-gallon tanks at two locations on site. One hydrogen peroxide tank would be on the west side of the WTP near the pre-ozone pumping plants, and one hydrogen peroxide tank would be on the east side of the WTP near the parking lot for the main office; and,
- Ozone would be used for added at two different points in the treatment process to neutralize taste and odor compounds and oxidize contaminants. LOX would be stored on site in three approximate 20,000-gallon tanks, located in the LOX Storage Area immediately adjacent to the Ozone Generation Building.

The Project would thus require new deliveries of alum, polymer, microsand, hydrogen peroxide, and LOX as necessary to treat the range of water quality entering the Walnut Creek WTP. There would be no new chemical usage at the Lafayette WTP.

2.7.2 Off Site Removal of Dewatered Solids

Dewatered solids from centrifuges in the dewatering building would be loaded by screw conveyors to trucks at the new truck loading station and would then be trucked to a landfill, which would typically entail up to 3 truck trips per day for a 10 CY haul truck. This is a slight increase over the current sludge hauling of approximately 2 truck trips per day. Solids production and truck haul trips would increase during periods of lower water quality or high turbidity and could temporarily get as high as 21 truck trips per day during peak turbidity.

2.7.3 Power Required for Operations

The existing Walnut Creek WTP uses approximately 2,000 MWh of electricity each year for water treatment, pumping water, and site operations. The new treatment processes and facilities at the Walnut Creek WTP would require an increase in electrical power consumption for lighting in the new buildings and for operation of the ballasted flocculation, ozone generation, and mechanical dewatering equipment. The Project would require an increase in electrical power at the Walnut Creek WTP of approximately 2,000 to 5,000 MWh each year depending on untreated water quality and would be met by the local utility, PG&E. The existing photovoltaic system on-site supplies approximately 700 MWh each year, which is approximately 30 percent of the power needed for current operations.

The existing main Walnut Creek WTP switchgear has sufficient capacity to support the proposed electrical improvements but would require installation of a new breaker. Coordination with PG&E

regarding shutdowns for installation of the new breaker would be performed during design. It is expected that the PG&E distribution system serving the Walnut Creek WTP has sufficient capacity to supply the additional power loads necessary to run the Project.

The Lafayette WTP Project components would not require an increase in electrical power consumption for long-term operation.

2.7.4 Operational Sanitary Sewer Discharges

The consolidated maintenance building at the Walnut Creek WTP would require a new sewer connection to the existing 6-inch sewer pipelines on site for bathrooms, showers, and sinks. Utility sinks and sumps in the other new facilities would also be connected to the existing 6-inch sewer lines on the site. The existing on-site sewer pipeline discharges into the existing Central Contra Costa Sanitary District sewer collection system beneath Larkey Lane.

2.7.5 Stormwater Management

Stormwater facilities to serve the proposed improvements would be designed to be consistent with the Contra Costa Clean Water Program, Provision C.3 of the Municipal Regional Permit for stormwater discharges, which are regulated by the Regional Water Quality Control Board. Because the Project would create more than one acre of new impervious area, the Project would include both treatment and flow controls for stormwater runoff. These controls would ensure that runoff from the new facilities does not degrade or erode receiving waters once runoff leaves the site.

Ruoff from the new impervious areas would be directed to existing and new storm drain pipelines, v-ditches, bio-swales, and energy dissipators. New bioretention facilities would be constructed around the site to accommodate the additional flow from new impervious areas (see **Figure 2-3**). No off-site improvements would be required to accommodate the new storm drainage infrastructure.

2.7.6 Lighting

Lighting would be required for all the new facilities, along walkways and under canopies. Lighting would be sufficient to provide safe access for maintenance. Lighting would comply with California Energy Commission Title 24. New light poles would match the height and general appearance of existing light poles and would have shielded light fixtures that would direct downward to minimize light pollution to the surrounding neighborhood.

2.8 Maintenance

All proposed facilities would require specific maintenance and inspection activities. Long-term site maintenance would continue, and would involve vegetation management on site, keeping the site clean and free of debris, and trimming shrubbery and trees for both fire prevention and public safety. Ongoing maintenance activities would continue to be conducted by staff already on site. The site-specific Emergency Action Plan and Fire Prevention Plan would be updated after the completion of the Project.

2.8.1 Staffing

The new pretreatment facilities may require one to two additional operators as necessary to treat the range of water quality entering the facility, and one to two additional maintenance staff who would be assigned to the Walnut Creek WTP to maintain the new treatment facilities. There would be no staffing changes at the Lafayette WTP.

2.8.2 Permanent Staging Area Use

At the end of each construction phase, all construction equipment, fencing, materials, temporary construction trailers, and sound barriers would be removed from the Lafayette and Walnut Creek WTPs. At the Lafayette WTP, staging areas would revert to normal operations functions. At the Walnut Creek WTP, the new Staging Areas 1 through 3 and existing parking area shown as Staging Area 4 (see **Figure 2-3)** would be used post-construction as described below:

- Staging Area 1 would be inside of the existing fenced site and would be paved. It would be available for all normal operations functions, including parking, as well as for staging for future construction activities on the site.
- Staging Area 2 would be inside of the existing fenced site and would be secured with new permanent security fencing and improved with a paved parking area. The existing social footpath will be redirected around the new security fencing. It would be available for all normal operations functions, including parking, as well as for staging for future construction activities on the site.
- Staging Area 3 would be outside of the existing site but would be secured with new permanent security fencing and would be improved with a gravel parking area. The parking area would generally not be used for normal operations functions but may be used for parking for site tours and parking during unplanned emergencies or training for emergencies, as well as for staging for future construction activities on the site.
- Staging Area 4 is outside of the existing fenced site and would retain its existing security fencing and gravel parking area. The parking area would generally not be used for normal operations functions but may be used for parking for site tours and parking during unplanned emergencies or training for emergencies.

2.9 Changes in Easements and Rights-of-Way

There would be no changes in easements and no requirements for additional rights-of-way.

2.10EBMUD Practices and Procedures

EBMUD has incorporated a number of standard construction specifications, standard practices, and procedures into the Project. These standard specifications and practices are designed to address typical characteristics of EBMUD construction projects and are not project-specific or tailored to the unique characteristics of the Project. These standard specifications and practices, which are applicable to all EBMUD construction projects and reflect generally applicable EBMUD standard operating procedures, are described below and included in **Appendix E**.

EBMUD maintains several Standard Specifications related to environmental conditions, including the following:

- **EBMUD Standard Construction Specification 00 81 02, Seismic Design Criteria.**

  This section provides criteria to ensure seismic safety of buildings and other structures. (EBMUD, 2016a)

- **EBMUD Standard Construction Specification 01 14 00, Work Restrictions.**

  This section sets limits on construction hours and on noise generating activities (EBMUD, 2021a).

- **EBMUD Standard Construction Specification 01 32 36, Video Monitoring and Documentation.**

  This section requires the Contractor to provide documentation of both pre- and post-construction pavement conditions in the project vicinity and includes provisions for long-term transportation safety (EBMUD, 2022).

- **EBMUD Standard Construction Specification 01 35 44, Environmental Requirements.**

  This section includes provisions related to water quality, dust and emissions control, noise and vibration control, hazardous materials control, and protection of biological and cultural resources (EBMUD, 2023a).

- **EBMUD Standard Construction Specification 01 35 45, Biological, Cultural, and Paleontological Resource Requirements.**

  This section includes provisions related to protection of biological, cultural, and paleontological resources (EBMUD, 2023b).

- **EBMUD Standard Construction Specification 01 55 26, Traffic Regulation.**

  This section includes provisions for the regulation of traffic during construction and compliance with applicable traffic regulations requirements (EBMUD, 2017).

- **EBMUD Standard Construction Specification 01 35 24, Project Safety Requirements.**

  This section includes provisions for the safety of the public and construction workers regarding hazards and hazardous materials (EBMUD, 2021b).

- **EBMUD Standard Construction Specification 01 74 05, Cleaning.**

  This section requires compliance with local ordinances and anti-pollution laws and that the construction site be kept free of waste materials and rubbish (EBMUD, 2015).

- **EBMUD Standard Construction Specification 02 83 13, Lead Hazard Control Activities.**

  This section includes requirements for the handling, removal, and proper disposal of lead-containing hazardous materials required as a result of construction activities, and includes provisions for hazardous materials controls (EBMUD, 2016b).

- **EBMUD Standard Construction Specification 02 82 13, Asbestos Control Activities.**

  This section includes requirements for the handling, removal, and proper disposal of asbestos-containing materials required as a result of construction activities (EBMUD, 2014).

2.11 Permits and Approvals

Anticipated permits and approvals for the Project include, but may not be limited to, those listed in **Table 2-6**.

Table 2-6: Anticipated Permits and Approvals

Agency	Anticipated Required Permit/Approval
Bay Area Air Quality Management District (BAAQMD)	Authority to Construct, Permit to Operate ozone system and new generator
Contra Costa Fire Protection District	Chemical storage, occupied buildings
Contra Costa County Flood Control District	Encroachment Permit
State Water Resources Control Board (SWRCB)	Notice of Intent (NOI) for coverage under National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges associated with Construction and Land Disturbance Activities (Construction General Permit) (Order 2009-0009-DWQ)
California Department of Fish and Wildlife	Streambed Alteration Agreement for any modification to creeks
U.S. Fish and Wildlife Service	Completion of federal Endangered Species Act consultation requirements
Regional Water Quality Control Board: Clean Water Act	Possible coverage of dewatering discharges under General Low-Threat Discharge Permit
California Department of Public Health, Division of Drinking Water	Domestic Water Supply permit amendment for new treatment processes and increased capacity

2.12 References

EBMUD. 2014. Standard Specification Number 02 82 13, Asbestos Control Activities. May 2014.

EBMUD. 2015. Standard Specification Number 01 74 05, Cleaning. December 2015.

EBMUD. 2016a. Standard Specification Number 01 81 02, Seismic Design Criteria. November 2016.

EBMUD. 2016b. Standard Specification Number 02 83 13, Lead Hazard Control Activities. May 2016.

EBMUD. 2022. Standard Specification Number 01 32 36, Video Monitoring and Documentation. June 2022.

EBMUD. 2017. Standard Specification Number 01 55 26, Traffic Regulation. February 2017.

EBMUD. 2020. Walnut Creek Water Treatment Plant Pretreatment Upgrades, Basis of Design Report. January 2020.

EBMUD. 2021a. Standard Specification Number 01 14 00, Work Restrictions. July 2021.

EBMUD. 2021b. Standard Specification Number 01 35 24, Project Safety Requirements. December 2021.

EBMUD. 2021c. Urban Water Management Plan 2020. June 2021

EBMUD. 2021d. Emergency Operations Plan

EBMUD. 2023a. Standard Specification Number 01 35 44, Environmental Requirements. February 2023.

EBMUD. 2023b. Standard Specification Number 01 35 45, Biological, Cultural, and Paleontological Resource Requirements. February 2023.

Insignia Environmental. 2021. Walnut Creek Water Treatment Plant Pretreatment Project - Arborist Condition Report. July 2021.

Insignia Environmental. 2022. Lafayette Water Treatment Plan Weir Upgrades - Walnut Creek Water Treatment Plant Pretreatment Project - Arborist Condition Report. January 2022

RHAA Landscape Architects and Siegel & Strain Architects. 2023. EBMUD Walnut Creek Water Treatment Plant Pretreatment Project – Aesthetics Conceptual Design Report. August 2023

Chapter 3 Environmental Setting, Impacts, and Mitigation Measures

3.0 Introduction and Environmental Analysis

3.0.1 Impacts Not Found to be Significant

An Initial Study (IS) was prepared to determine which environmental resources required detailed evaluation in the Environmental Impact Report (EIR). Based on the evaluation of impacts in the IS, it was determined that the Walnut Creek Water Treatment Plant (WTP) Pretreatment Project (Project) would have no impacts on: Agriculture and Forestry Resources, Mineral Resources, Population and Housing, Public Services, and Utilities and Service Systems. A detailed discussion of these resources has been excluded from this EIR.

3.0.2 Organization of Chapter 3

Chapter 3 includes evaluation of each environmental resource area as follows:

- 3.1 Aesthetics
- 3.2 Air Quality
- 3.3 Biological Resources
- 3.4 Cultural Resources
- 3.5 Energy
- 3.6 Geology, Soils and Seismicity
- 3.7 Greenhouse Gas Emissions
- 3.8 Hazards and Hazardous Materials
- 3.9 Hydrology and Water Quality
- 3.10 Land Use and Planning
- 3.11 Noise and Vibration
- 3.12 Recreation
- 3.13 Transportation
- 3.14 Tribal Cultural Resources
- 3.15 Wildfire

3.0.3 Organization of Discussion of Environmental Issue Area

For each environmental resource area, this EIR evaluates the environmental impacts of the Project. *Sections 3.1* through *3.15* discuss the environmental impacts that may result from approval and implementation of the Project. The IS, which is included in **Appendix A**, includes a discussion of all of the other environmental resource area and explains why the Project would have no impact on those resources. Each environmental resource area contains the following components:

1. **Environmental Setting** describes the setting as it relates to the specific resource topic. The setting information covers the areas affected by the Project: the Walnut Creek WTP, the Lafayette WTP, nearby haul routes, and the surrounding areas including neighborhood and open spaces.
2. **Regulatory Framework** provides an overview of relevant federal, state, and local laws, regulations, ordinances, and EBMUD standard construction specifications, practices, and procedures applicable to each resource area.

3. **Impact Analysis** includes the following subsections:
   - Methodology for Analysis describes the approach used in analyzing the potential impacts;
   - Significance Criteria are based on the criteria identified in the IS Checklist in Appendix G of the California Environmental Quality Act (CEQA) Guidelines, but are modified or supplemented as appropriate to address the proposed Project impacts; and
   - Impacts and Mitigation Measures provide an evaluation of impacts and identification of mitigation measures, if needed. The impact analysis is presented by a numbered impact summary statement that corresponds to the resource area.

The end of each impact statement includes a determination of the level of significance before and after any identified mitigation measures are implemented. Impacts that exceed identified threshold levels of significance criteria would be considered significant. In describing the significance of impacts, the following categories of significance are used:

- **Significant and Unavoidable.** Adverse environmental consequences that exceed the significance criteria identified for the resource, even after feasible mitigation strategies are applied and/or an adverse effect that could be significant and for which no feasible mitigation has been identified.
- **Less than Significant with Implementation of Mitigation Measures.** Adverse environmental consequences with the potential to be significant but can be reduced to less than significant levels through the application of identified mitigation measures.
- **Less than Significant.** Potential adverse environmental consequences have been identified. However, they are not so adverse as to meet the significance criteria for a resource. Therefore, no mitigation measures are required.
- **No Impact.** No adverse environmental consequences have been identified for the resource, or the consequences are negligible or undetectable. Therefore, no mitigation measures are required.

3.0.4 Approach to Analysis of Cumulative Impacts

CEQA Requirements

CEQA requires consideration of cumulative impacts. A cumulative impact is created as a result of the combination of the Project evaluated in the EIR together with other projects causing related impacts. Cumulative impacts, as defined in Section 15355 of the CEQA Guidelines, refer to two or more individual effects that, when considered together, are considerable or that compound or increase other environmental impacts. The cumulative impact from several projects is the change in the environment that results from the incremental impact of the Project added to the impacts of other past, present, or reasonably foreseeable future projects. Pertinent guidance for cumulative impact analysis is provided in Section 15130 of the CEQA Guidelines, and summarized below:

- An EIR shall discuss cumulative impacts of a project when the project's incremental effect is "cumulatively considerable" (i.e., the incremental effects of an individual project are considerable when viewed in connection with effects of past, current, and probable future projects, including those outside the control of the agency, if necessary).
- An EIR should not discuss impacts that do not result in part from the project evaluated in the EIR.

- The discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not be as detailed as it is for the effects attributable to the project alone.
- A project's contribution is less than cumulatively considerable, and thus not significant, if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact.
- The focus of analysis should be on the cumulative impact to which the identified other projects contribute, rather than on attributes of the other projects that do not contribute to the cumulative impact.

The cumulative impact analysis for each individual resource topic is described at the end of each resource section in this Chapter, except for the Greenhouse Gas Emissions section, in which the entire analysis is inherently cumulative.

Approach to Analysis

For evaluation of cumulative impacts, this EIR uses a list-based approach, and evaluates the potential for past, present, and probable future projects in the Project area to result in cumulative impacts. Once the Project is constructed, the facilities at the Walnut Creek WTP and Lafayette WTP would continue to operate and be maintained in much the same fashion as the existing water treatment facilities; therefore, no significant operational impacts are expected. Project impacts are entirely associated with construction, so the analysis of cumulative impacts has focused on other projects that could be constructed in the cities of Lafayette and Walnut Creek at the same time as the Project, and there would be no cumulative operational impacts. Information about pending project applications was obtained from the City of Lafayette (2023), City of Walnut Creek (2023), Bay Area Rapid Transit (BART) (2023), Caltrans (2023), Pacific Gas & Electric (2023), East Bay Regional Park District (2023), Central Contra Costa Sanitary District (2023) and EBMUD. No projects for Caltrans, Pacific Gas & Electric, East Bay Regional Park District, or Central Contra Costa Sanitary District were identified in the Project vicinity. EBMUD has 13 projects that are within one mile of the Project site, but only 3 projects that would occur during construction of the proposed Project.

Table 3.0-1 contains a list of projects planned for construction within the general vicinity of the Lafayette WTP and Walnut Creek WTP. Locations of projects are shown in **Figure 3.0-1** and **Figure 3.0-2**. **Table 3.0-1** also provides information about whether the project has a potential nexus that would result in construction impacts combining with those of the Project. Most EBMUD projects listed in **Table 3.0-1** would not have a nexus because construction would not overlap with the construction of the Project. Phase 1 is expected to take between about 3 ¼ to 5 years. Phase 2 is estimated to take approximately 2 years but may be longer. Phase 1 of construction at the Walnut Creek WTP is expected to start in mid-2027 and last until fall 2030 for a 3 ¼-year schedule or until mid-2032 for a 5-year schedule. Phase 2 construction could potentially start as early as spring 2031 and last until fall 2032. Construction at the Lafayette WTP would take place over three years: 2027 to 2028, 2028 to 2029 and 2029 to 2030. Projects in the City of Walnut Creek and City of Lafayette shown in **Table 3.0-1** are too far from the Project to result in cumulative effects when combined with the Project and are also not expected to have overlapping construction dates.

Table 3.0-1: Cumulative Project List

No.	Project Name/ Location	Project Description	Construction Date[1]	Nexus (Y/N)?
	EBMUD PROJECTS			
1	New Water Quality Research Facility, Walnut Creek WTP	New laboratory facility at decant building location	2023 to 2025	N
2	Larkey Pumping Plant Rehabilitation Project, Walnut Creek WTP	Rehabilitation of existing pumping plant, mechanical and electrical equipment	**2028 to 2030**	Y
3	Inline Raw Water CO2 Project, Walnut Creek WTP	On-going construction of new CO2 injection facility near chemical storage	2023 to 2024	N
4	Acalanes Pumping Plant Project at Walnut Creek WTP	New pumping plant to pump treated water from Walnut Creek WTP to Lafayette WTP site	2033 to 2035	N
5	Walnut Creek WTP Filters 1-4 Improvements Project	Improvements to existing filters	2024 to 2027	N
6	Chemical System Safety Improvements Project (CSSIP), Walnut Creek WTP	Modification of existing including chemical feed and storage systems to improve worker and environmental safety	2024 to 2026	N
7	Lafayette No. 1 Aqueduct Relining Project from south of Quandt Road to west of Lafayette WTP	Relining of segments of the existing buried large diameter pipeline within EBMUD's aqueduct right-of-way, from multiple access portals.	**2027 to 2030**	Y
8	Acalanes Aqueduct Project, between Walnut Creek WTP and Lafayette WTP	New tunnel between Walnut Creek WTP and Lafayette WTP to pump treated water from Walnut Creek WTP to Lafayette WTP site	2033 to 2035	N
9	Acalanes Clearwell Project at Lafayette WTP	Two new water storage tanks to hold treated water pumped from Walnut Creek WTP	2033 to 2035	N
10	Inline Raw Water CO2 Project at Lafayette WTP	Ongoing construction of new CO2 injection facility	2023 to 2024	N
11	Bryant Pumping Plant Power Rehabilitation Project at Lafayette WTP	Modifications to existing pumping plant	2026 to 2027	N
12	Chemical System Safety Improvements Project (CSSIP) at Lafayette WTP	Modification of existing including chemical feed and storage systems to improve worker and environmental safety	2024 to 2027	N
13	Lafayette WTP Interim Disinfection and Residuals Improvements Project	New WTP improvements at Lafayette WTP	**2028 to 2030**	Y

No.	Project Name/ Location	Project Description	Construction Date[1]	Nexus (Y/N)?
	CITY OF WALNUT CREEK			
14	BART Walnut Creek Transit Village Project, Walnut Creek BART station	Phase I: Aboveground parking garage and multi-modal center Phase II: 356 apartment units, approximately 15,000 square feet of retail space Phase III: 238 apartment units, approximately 12,000 square feet of retail space	Phases I and II complete; Phase III schedule not determined	N
17	Hilton Garden Inn, 490 Lawrence Way	Three-story, 124-room hotel with parking and pool area	Under construction	N
	BART			
15	Walnut Creek BART Station modernization	Station improvements including adding stairs on north end of station, connecting the east and west platforms to concourse	Under construction, complete by 2023	N
	CITY OF LAFAYETTE			
16	3721 Mt. Diablo Boulevard	4-story multi-family development containing 13 units with subterranean parking structure	Approved, construction not started	N

[1] Bolded dates overlap with construction period for Project

Figure 3.0-1: Cumulative Projects in Vicinity of Walnut Creek WTP

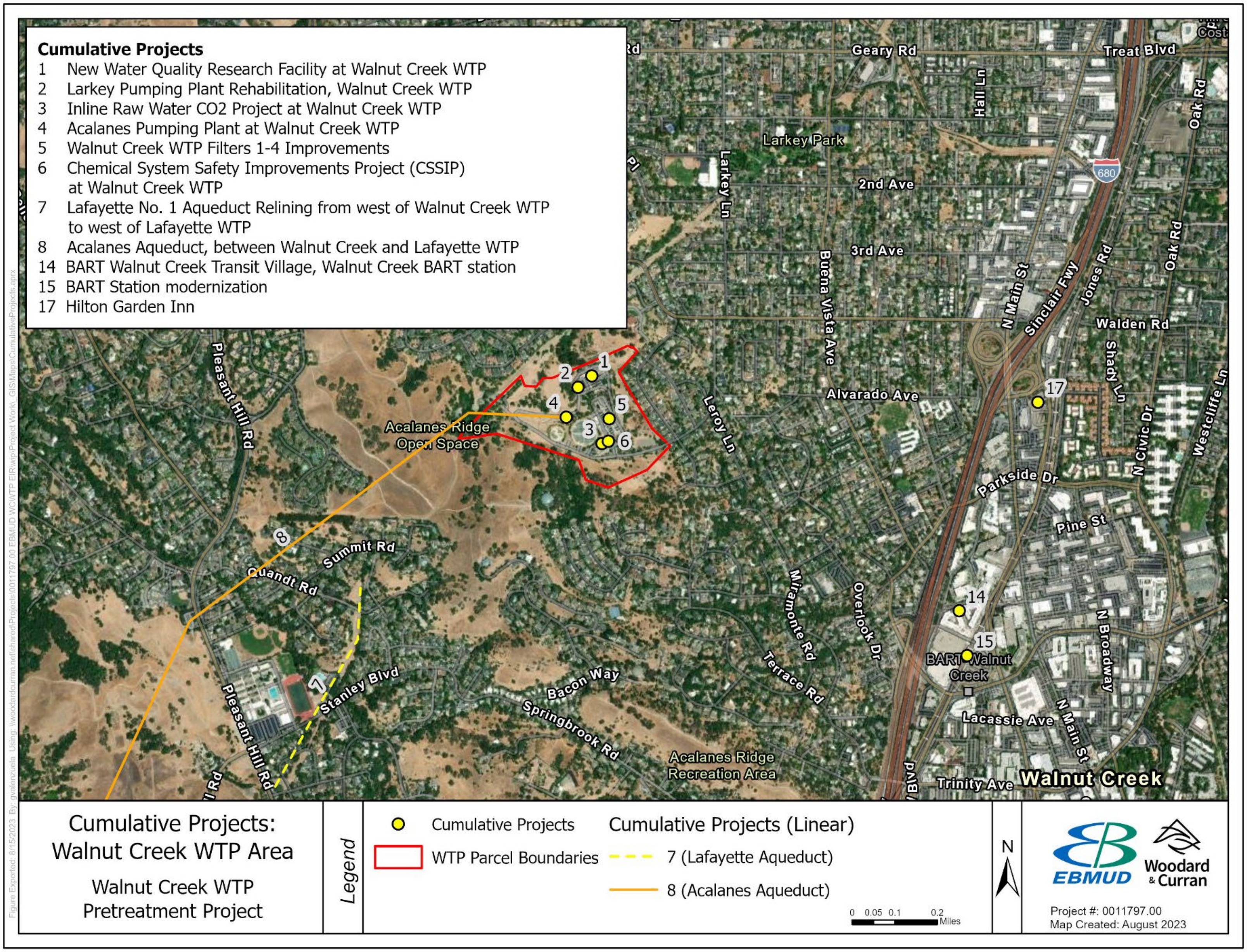
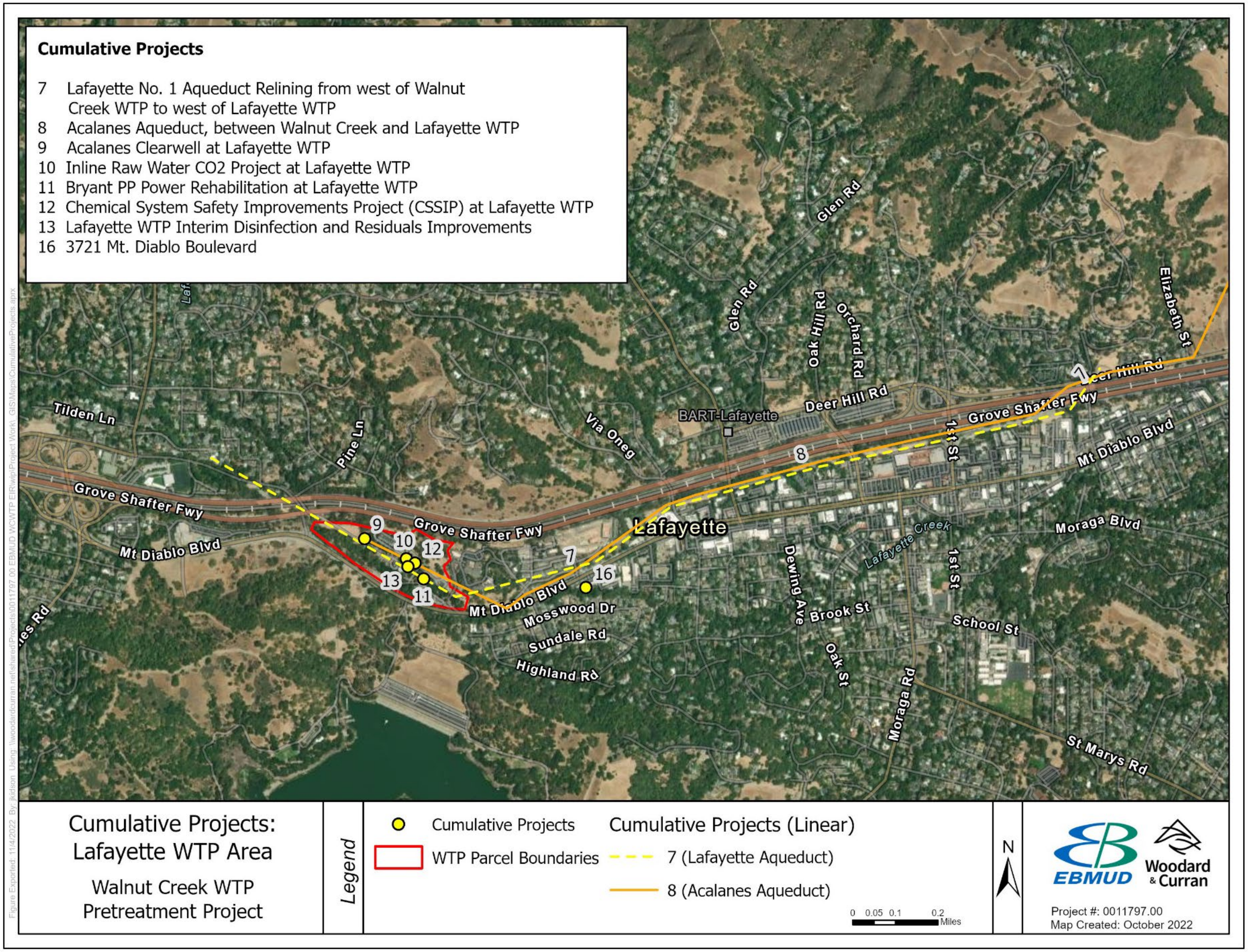


Figure 3.0-2: Cumulative Projects in Vicinity of Lafayette WTP



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3.1 Aesthetics

This section describes the physical, environmental, and regulatory setting for aesthetic resources at the Project site and vicinity, identifies the significance criteria for determining environmental impacts, and evaluates the potential impacts on aesthetic resources that could result from construction and operation of the Project. This section includes photographs that show existing visual conditions from various public vantage points and visual simulations at different time periods after construction of the Project.

3.1.1 Environmental Setting

Concepts and Terminology

The following language is used to describe and characterize the visual aspects of the public viewpoints of the Project. Public views are defined as those that are experienced from a publicly accessible vantage point.

Visual Character is a description of the natural and manmade features of a site, and general visual attributes. Visual character provides context for the public's perception of visual quality.

Visual Quality is a description of the attractiveness of a site based on its aesthetics, as associated with its land use and visual characteristics. Visual quality is classified as low, moderate, or high. Low visual quality describes locations lacking natural or cultural visual resources and generally occurs in areas that are visually uncharacteristic of the surrounding area. Moderate visual quality reflects a location that is consistent with typical natural or cultural visual resources, with aesthetic elements that do not stand out as either substantially improving or detracting from the visual character of the area. High visual quality is present in areas that improve the overall visual character of an area, and typically would be characterized by unique or exemplary natural or cultural visual resources.

Viewer Exposure is a description of how visible a site is from various public viewpoints. Viewer exposure incorporates how visible the site is, the distance from the viewer, and the duration of the view as experienced by the viewer (e.g., is the viewpoint seen briefly from a highway or from longer periods from a stationary position).

Visual Sensitivity is a description of how susceptible a site is to visual changes. Visual sensitivity is generally higher for sites that have high visual quality and viewer exposure, and where changes are more likely to degrade or detract from the public view.

Regional Setting

The Project is located within the cities of Walnut Creek and Lafayette in Contra Costa County, California. Both the Walnut Creek WTP and Lafayette WTP sites are located between urbanized development and open space. The areas are characterized by rolling hills, with open space generally composed of grassy hills and oak woodland. The Walnut Creek WTP site is adjacent to single family residential homes to the east and north, the Briones to Mt. Diablo Regional Trail to the north (between the residential homes and the Walnut Creek WTP), and Acalanes Ridge Open Space to the south and west. The Acalanes Ridge Open Space is a 171-acre preserve with recreational trails. Single family homes are also located on the far side of Acalanes Ridge Open Space from the Walnut Creek WTP. St. Stephen Catholic Church is located northeast of the site.

The Lafayette WTP is bounded by Mt. Diablo Boulevard to the south and west, Temple Isaiah to the east, and State Route 24 to the north. There are no residences adjacent to the site. South of Mt. Diablo Boulevard from the Lafayette WTP is the Lafayette Reservoir, which is surrounded by open space composed of hilly oak woodlands.

Visual Study Areas

The visual study areas for the Project include public viewpoints where the construction and operation activities at the Walnut Creek WTP and Lafayette WTP sites would be most visible to the public. Site reconnaissance of the Project area was performed in 2021 at both sites to identify the visual study area and take representative photographs of existing visual conditions. Based on the site reconnaissance, six viewpoints were identified for the Walnut Creek WTP site (**Figure 3.1-1**) and one viewpoint for the Lafayette WTP site (**Figure 3.1-2**) that are representative of the different angles and types of views a member of the public might have of the Project. The existing views at each site are shown in **Figure 3.1-3** through **Figure 3.1-9**. The selected viewpoints of the Walnut Creek WTP site are generally taken from the Acalanes Ridge Open Space and Briones to Mt. Diablo Regional trail, which includes the primary public views of the site. The Project is not visible from Alfred Avenue and Larkey Lane below the site. The selected viewpoint of the Lafayette WTP site is taken from Mt. Diablo Boulevard, where the public is most likely to be able to see into the portion of the site where the Project would be located.

Visual Character

The area surrounding the Walnut Creek WTP is visually characterized by open space of hills with wooded and grassland areas to the north, west, and south, with suburban neighborhood of single-family homes immediately to the east, and on far side of the open space to the north, south, and west of the site. The Walnut Creek WTP is screened by trees, fences, and topography that screen private views from nearby homes along Alfred Avenue, Larkey Lane, Keaveny Court, Ramsay Circle, and Quail View Circle. The area surrounding the Lafayette WTP is also visually characterized by open space of hills with wooded and grassland areas to the south and west, Highway 24 to the north, and Temple Isaiah and commercial properties to the east and southeast.

Visual Sensitivity

The overall visual sensitivity of the Project sites from public views is classified in terms of its visual quality, potentially affected viewers, and exposure conditions for each of the seven viewpoints. **Table 3.1-1** provides a high-level summary of the visual sensitivity of each selected viewpoint and a more detailed explanation of the visual sensitivity is provided in the discussion below.

Figure 3.1-1: Walnut Creek WTP Viewpoint Locations

Figure 3.1-2: Lafayette WTP Viewpoint Location

Figure 3.1-3: Walnut Creek WTP Viewpoint 1 – Existing View

EBMUD WCWTP | VIEWPOINT SELECTION
EAST BAY MUNICIPAL UTILITY DISTRICT
VIEW POINT 1
AUGUST 3rd, 2021

Figure 3.1-4: Walnut Creek WTP Viewpoint 2 – Existing View

EBMUD WCWTP | VIEWPOINT SELECTION
EAST BAY MUNICIPAL UTILITY DISTRICT
VIEW POINT 2
AUGUST 3rd, 2021

Figure 3.1-5: Walnut Creek WTP Viewpoint 3 – Existing View

EBMUD WCWTP | VIEWPOINT SELECTION
EAST BAY MUNICIPAL UTILITY DISTRICT
VIEW POINT 3
AUGUST 3rd, 2021

EBMUD rhaa

Figure 3.1-6: Walnut Creek WTP Viewpoint 4 – Existing View

EBMUD WCWTP | VIEW POINT SELECTION
EAST BAY MUNICIPAL UTILITY DISTRICT
VIEW POINT 4
AUGUST 3rd, 2021

EBMUD rhaa

Figure 3.1-7: Walnut Creek WTP Viewpoint 5 – Existing View

EBMUD WCWTP | VIEWPOINT SELECTION
EAST BAY MUNICIPAL UTILITY DISTRICT
VIEW POINT 5
AUGUST 3rd, 2021

Figure 3.1-8: Walnut Creek WTP Viewpoint 6 – Existing View

EBMUD WCWTP | VIEWPOINT SELECTION
EAST BAY MUNICIPAL UTILITY DISTRICT
VIEW POINT 6
AUGUST 3rd, 2021

Figure 3.1-9: Lafayette WTP Viewpoint 1 – Existing View

EBMUD WCWTP | VIEWPOINT SELECTION
EAST BAY MUNICIPAL UTILITY DISTRICT
LAFAYETTE VIEW POINT_BEFORE
June 29th, 2022

Table 3.1-1: Visual Sensitivity

Viewpoint	Approximate Distance from Project Site[1]	Visual Quality	Affected Viewers and Exposure Conditions	Visual Sensitivity
Walnut Creek WTP Viewpoint 1	Adjacent	Moderate	Moderate to High	Moderate
Walnut Creek WTP Viewpoint 2	0.07 miles	Moderate	Low	Low
Walnut Creek WTP Viewpoint 3	0.18 miles	High	Moderate	Moderate
Walnut Creek WTP Viewpoint 4	0.10 miles	Moderate	High	Moderate
Walnut Creek WTP Viewpoint 5	Adjacent	High	High	High
Walnut Creek WTP Viewpoint 6	0.25 miles	Moderate	Moderate	Moderate
Lafayette WTP Viewpoint 1	Adjacent	Low	Low	Low

[1] Distance from the property boundaries of either Walnut Creek WTP or Lafayette WTP as indicated in the Viewpoint name. Does not reflect distance to facilities to be constructed under the Project.

Walnut Creek WTP Viewpoint 1

Walnut Creek WTP Viewpoint 1 is located at the southwestern boundary of the Walnut Creek WTP site, looking north. Walnut Creek WTP Viewpoint 1 is located along a social footpath that borders the southern fence at the Walnut Creek WTP boundary. Although the footpath is informal, it is accessible to the public.

Visual Character. The existing view of the site is shown in **Figure 3.1-3**. Walnut Creek WTP Viewpoint 1 is located along the southern fence line of the site, which also depicts EBMUD's standard security fencing, black 8-foot-tall and, topped with barbed wire. Current views include the Walnut Creek WTP site, with partially buried water storage tanks covered in solar panels the primary focus of the view. Roads within the site are also prominent from Walnut Creek WTP Viewpoint 1. The views also include trees and, in the distance, rolling hills with oak woodland. In general, there are only limited views of existing structures either at the Walnut Creek WTP site or beyond, with the exception of the partially buried water storage tanks. Walnut Creek WTP Viewpoint 1 is on a rise, looking down and over the views to the north.

Visual Quality. Walnut Creek WTP Viewpoint 1 has moderate visual quality because of the undeveloped portions of the view and high levels of screening by native trees limiting views of developed areas. The structures that are present are noticeable but low profile, and with the exception of the solar panels on top, are designed to blend with the surrounding environment. However, the views are moderate because the existing Walnut Creek WTP facilities are the primary feature of the view at Walnut Creek WTP Viewpoint 1, and the black security fencing interrupts the view.

Affected Viewers and Exposure Conditions. Walnut Creek WTP Viewpoint 1 is located within EBMUD property adjacent to the Acalanes Ridge Open Space, on a publicly accessible but informal social footpath. The viewpoint would only be experienced by the public when walking or biking along the social footpath that runs along the southern boundary of the Walnut Creek WTP site. Exposure would be moderate for cyclists and high for pedestrians.

Visual Sensitivity Conclusion. The visual quality of Walnut Creek WTP Viewpoint 1 is moderate, and the exposure conditions are high. The visual sensitivity would be moderate because the existing view already has multiple man-made structures, and although much of the site is visible, the site would be viewed through an existing black chain-link fence.

Walnut Creek WTP Viewpoint 2

Walnut Creek WTP Viewpoint 2 is located within Acalanes Ridge Open Space, approximately 0.07 miles south of the Walnut Creek WTP site, looking north towards the site. Walnut Creek WTP Viewpoint 2 is located on a hill at the end of the Sousa trail that can be accessed from the surrounding single-family neighborhood.

Visual Character. The existing view of the site is shown in **Figure 3.1-4**. From Walnut Creek WTP Viewpoint 2, the Walnut Creek WTP is partially visible in the midground through a gap in the trees. Views include native trees and oak woodland, and structures other than the Walnut Creek WTP are screened from view by vegetation. Partial screening of the Walnut Creek WTP is provided by vegetation along the trail. Walnut Creek WTP Viewpoint 2 is on a hill, looking down and over the site to the north.

Visual Quality. Walnut Creek WTP Viewpoint 2 has moderate visual quality because the viewpoint includes high quality views of the area where most development is screened by natural features and angle, but also includes views of the Walnut Creek WTP structures, which detract from the natural resources of the view.

Affected Viewers and Exposure Conditions. Walnut Creek WTP Viewpoint 2 is located within the Acalanes Ridge Open Space, on a publicly accessible trail. Walnut Creek WTP Viewpoint 2 would only be experienced by the public when walking or biking along the trail. Being located at the end of the trail, Walnut Creek WTP Viewpoint 2 is likely a location where visitors would stop to rest or take in the view, lengthening the duration of the exposure. The Walnut Creek WTP is clearly visible from Walnut Creek WTP Viewpoint 2, however, the portions of the Walnut Creek WTP site that would house the new facilities constructed for the Project would be located in areas not visible from Walnut Creek WTP Viewpoint 2 due to screening from vegetation and existing structures, as well as angle from the viewpoint. Therefore, exposure to the Project from Walnut Creek WTP Viewpoint 2 would be low.

Visual Sensitivity Conclusion. The visual quality of Walnut Creek WTP Viewpoint 2 is moderate, and the exposure conditions are low. Therefore, the visual sensitivity would be low.

Walnut Creek WTP Viewpoint 3

Walnut Creek WTP Viewpoint 3 is located within Acalanes Ridge Open Space, approximately 0.18 miles southwest of the Walnut Creek WTP site. Walnut Creek WTP Viewpoint 3 is located on the Sousa Trail, with views out over portions of Acalanes Ridge Open Space, the Walnut Creek WTP site, and north.

Visual Character. The existing view of the site is shown in **Figure 3.1-5**. From Walnut Creek WTP Viewpoint 3, the Walnut Creek WTP is partially visible in the midground, and is screened from view by distance, topography, and trees. Walnut Creek WTP Viewpoint 3 is on top of a ridge, with views of rolling grasslands and oak woodlands, as well as views out over the surrounding area. Most development is screened from view by trees and topography, though some development is visible far to the north.

Visual Quality. Walnut Creek WTP Viewpoint 3 has high visual quality because the viewpoint features undeveloped Acalanes Ridge Open Space, with views extending to the horizon, and most development hidden from view.

Affected Viewers and Exposure Conditions. Walnut Creek WTP Viewpoint 3 is located along one of the publicly accessible trails within the Acalanes Ridge Open Space. Walnut Creek WTP Viewpoint 3 would be experienced by the public when walking or biking along the trail, which would provide for an extended exposure to the view of the site. Although the Walnut Creek WTP site is clearly visible, proposed facilities constructed as part of the Project would only be partially visible due to existing screening provided by trees, topography, distance, and where they would be located in relation to existing facilities. Exposure would therefore be moderate.

Visual Sensitivity Conclusion. The visual quality of Walnut Creek WTP Viewpoint 3 is high, and the exposure conditions are moderate. Therefore, the visual sensitivity would be moderate.

Walnut Creek WTP Viewpoint 4

Walnut Creek WTP Viewpoint 4 is located within Acalanes Ridge Open Space, approximately 0.10 miles west of the Walnut Creek WTP site. Walnut Creek WTP Viewpoint 4 is located on the Yarrow Trail within the open space, with views out over portions of the Walnut Creek WTP site looking east.

Visual Character. The existing view of the site is shown in **Figure 3.1-6**. From Walnut Creek WTP Viewpoint 4, the Walnut Creek WTP is visible in the midground. Mt. Diablo rises in the distance, and some development near I-680 is visible though far away. The surrounding area is rolling hills with trees and grass.

Visual Quality. Walnut Creek WTP Viewpoint 4 features undeveloped Acalanes Ridge Open Space and clear views of Mt. Diablo, a prominent natural feature in the region. The views of development and nature are consistent with the surrounding area, but development, including the Walnut Creek WTP site, are still clearly seen. Therefore, the visual quality is moderate.

Affected Viewers and Exposure Conditions. Walnut Creek WTP Viewpoint 4 is located along one of the publicly accessible trails within the Acalanes Ridge Open Space. Walnut Creek WTP Viewpoint 4 would be experienced by the public when walking or biking along the trail, which would provide for an extended exposure to the view of the site. Facilities constructed for the Project would be partially screened from view by vegetation but not existing structures and would still be visible from Walnut Creek WTP Viewpoint 4. Exposure would therefore be high.

Visual Sensitivity Conclusion. The visual quality of Walnut Creek WTP Viewpoint 4 is moderate, and the exposure conditions are high. Therefore, the visual sensitivity would be moderate because the existing Walnut Creek WTP site is clearly visible in the existing view from Walnut Creek WTP Viewpoint 4.

Walnut Creek WTP Viewpoint 5

Walnut Creek WTP Viewpoint 5 is located along the Briones to Mt. Diablo Regional Trail, near the access point from Quail View Circle. Walnut Creek WTP Viewpoint 5 is adjacent to the Walnut Creek WTP property line, and approximately 0.10 miles from the existing fence line of the Walnut Creek WTP site. Walnut Creek WTP Viewpoint 5 looks east to the Walnut Creek WTP site.

Visual Character. The existing view of the site is shown in **Figure 3.1-7**. From Walnut Creek WTP Viewpoint 5, the only portion of the Walnut Creek WTP that is currently visible is the fence, which is difficult to discern due to distance. In general, the views from Walnut Creek WTP Viewpoint 5 are rolling grassland and oak woodland, with no development noticeable.

Visual Quality. Walnut Creek WTP Viewpoint 5 has high visual quality because the viewpoint features natural views consistent with the area, with no obvious development within the view.

Affected Viewers and Exposure Conditions. Walnut Creek WTP Viewpoint 5 is located along the publicly accessible Briones to Mt. Diablo Regional Trail. Walnut Creek WTP Viewpoint 5 would be experienced by the public when walking or biking along the trail, which would provide for an extended exposure to the view of the site. From Walnut Creek WTP Viewpoint 5, there is a clear view to the proposed location of some structures that would be constructed as part of the Project. Exposure would therefore be high.

Visual Sensitivity Conclusion. The visual quality of Walnut Creek WTP Viewpoint 5 is high, and the exposure conditions are high. Therefore, the visual sensitivity would be high.

Walnut Creek WTP Viewpoint 6

Walnut Creek WTP Viewpoint 6 is located on the western edge of Acalanes Ridge Open Space, at Monarch Ridge Drive, along the Ridgetop Trail. Walnut Creek WTP Viewpoint 6 is located approximately 0.25 miles west of the easternmost portion of the Walnut Creek WTP site.

Visual Character. The existing view of the site is shown in **Figure 3.1-8**. Views from Walnut Creek WTP Viewpoint 6 includes rolling hills with grass and oak woodlands within portions of Acalanes Regional Open Space and Mt. Diablo rising in the background. Development is also clearly visible from Walnut Creek WTP Viewpoint 6, including single-family homes and the Walnut Creek WTP site, both of which are partially screened by trees and topography, and development of the City of Walnut Creek in the background.

Visual Quality. Walnut Creek WTP Viewpoint 6 has moderate visual quality because the viewpoint features undeveloped Acalanes Ridge Open Space and clear views of Mt. Diablo, but also features views of development.

Affected Viewers and Exposure Conditions. Walnut Creek WTP Viewpoint 6 is located near one of the access points to the Acalanes Ridge Open Space, at Monarch Ridge Drive.. Once within the open space, Walnut Creek WTP Viewpoint 6 can be reached by the public along Ridgetop Trail. Walnut Creek WTP Viewpoint 6 would be experienced by the public when walking or biking along the trail, which would provide for an extended exposure to the view of the site, and portions of the Project would be clearly visible. However, the distance between Walnut Creek WTP Viewpoint 6 and the Project site would reduce the impact of exposure. As such, exposure would be moderate.

Visual Sensitivity Conclusion. The visual quality of Walnut Creek WTP Viewpoint 6 is moderate, and the exposure conditions are moderate. Therefore, the visual sensitivity would be moderate.

Lafayette WTP Viewpoint 1

Lafayette WTP Viewpoint 1 is located on a sidewalk on the south side of Mt. Diablo Boulevard, west of the eastern entrance to the Lafayette WTP near Risa Road. Lafayette WTP Viewpoint 1 is adjacent to the Lafayette WTP site, which is visible to the north and northwest of Lafayette WTP Viewpoint 1.

Visual Character. The existing view of the site is shown in **Figure 3.1-9**. Lafayette WTP Viewpoint 1 is located along a paved road lined with trees that generally block views of surrounding properties. From Lafayette WTP Viewpoint 1, the Lafayette WTP site is visible, and views include black security fencing, 8 feet tall, chain-link and topped with barbed wire, vehicles and equipment for the Lafayette WTP, and trees on the site. No structures are visible from Lafayette WTP Viewpoint 1.

Visual Quality. Visual quality of Lafayette WTP Viewpoint 1 is low because the view is of a parking area with industrial vehicles and equipment.

Affected Viewers and Exposure Conditions. Lafayette WTP Viewpoint 1 is located on a sidewalk on the south side of Mt. Diablo Boulevard, which could provide views for pedestrians. There are bike lanes on either side of Mt. Diablo Boulevard, which could provide views for cyclists. Pedestrians and cyclists would have longer exposure to the view than people traveling in cars along Mt. Diablo Boulevard. However, views of the site are screened by existing trees, and for drivers, the duration of the view is brief because of speed. Therefore, exposure would be low.

Visual Sensitivity Conclusion. The visual quality and exposure conditions would be low for Lafayette WTP Viewpoint 1. Therefore, the visual sensitivity is also low.

3.1.2 Regulatory Framework

This section describes policies and regulations related to aesthetics that may apply to the Project.

Federal Policies and Regulations

No federal policies or regulations are applicable to the Project’s aesthetics component.

State Policies and Regulations

California Scenic Highway Program

The California Scenic Highway Program was established in 1963 and is administered by Caltrans. The program establishes a responsibility for the State to protect and enhance natural scenic beauty “by identifying those portions of the State highway system which, together with adjacent scenic corridors, require special conservation treatment." As defined by Caltrans, “scenic corridors consist of land that is visible from, adjacent to, and outside the highway right-of-way, and is comprised primarily of scenic and natural features. Topography, vegetation, viewing distance, and/or jurisdictional lines determine the corridor boundaries.” (Caltrans, n.d.a.). State Route 24 from the Caldecott Tunnel to Interstate 680 in Walnut Creek is an officially designated state scenic highway (Caltrans, 2019). State Route 24 is located alongside the northern boundary of the Lafayette WTP site.

Local Policies and Regulations

Walnut Creek General Plan

The City of Walnut Creek General Plan is a long-range policy document intended to guide physical, economic, and environmental growth in the City of Walnut Creek. The City of Walnut Creek General Plan contains citywide elements, including a Built Environment element, which contains goals and objectives to manage visual resources. The City of Walnut Creek General Plan, which was adopted in 2006 and most recently amended in 2020, has a timeframe that extends to the year 2025. Applicable goals and objectives from the City of Walnut Creek General Plan are listed below.

Goal 18. Preserve and enhance the visual amenity provided by the open spaces, hills, and creeks

> **Policy 18-1.** Preserve and enhance the urban connections to scenic views that are important to residents
>
> Action 18.1.3. Preserve and enhance the off- site visual appearance of open space lands, particularly the views from other vantage points in the city.
>
> Action 18.1.4. Keep and, where possible, expand the public visual buffers between developed areas.
>
> **Policy 18.2.** Improve the appearance and prominence of designated scenic corridors.
>
> **Policy 18.3.** Mitigate the visual impacts of walls and fences.
>
> Action 18.3.1. Regulate the use, scale, and appearance of walls and fences.

Goal 26. Develop a comprehensive, integrated plan to preserve the natural environment in the built environment.

> **Policy 26.1.** "Preserve Open Space/ Agricultural Lands, as defined in this Ordinance" by:
>
> (1) "prohibiting Development on existing slopes with grades of twenty percent (20%) or greater, or within 75 vertical feet of any Ridgeline, or within the area surrounding any Native Tree for a distance of one and one-half times the distance from the trunk to the dripline, which slopes and areas shall be preserved in their natural state;
>
> (2) limiting Development to detached, single- family residential housing and normal appurtenances, with a maximum density of one (1) dwelling unit per ten (10) acres;
>
> (3) requiring that any permitted Development be located and constructed in such a manner as to prevent visual impacts on scenic vistas and existing neighborhoods; and
>
> (4) prohibiting the cutting of and damage to any Native Tree."
>
> **Policy 26.2.** Incorporate natural features such as trees, hillsides, and rock outcroppings into new development.
>
> **Policy 26.4.** Protect tree resources on public and private property
>
> **Policy 26.7. Study the impacts of light pollution and develop actions to reduce its effects.**
>
> Action 26.7.1. Consider adopting a "dark sky ordinance" aimed at reducing light spillage both upward and onto adjoining properties.

Lafayette General Plan

The City of Lafayette General Plan is a long-range policy document intended to guide physical, economic, and environmental growth in the City of Lafayette. The City of Lafayette General Plan contains citywide elements, including a Land Use element and an Open Space and Conservation element. The City of Lafayette General Plan, which was adopted in 2002 and most recently amended in 2020, has a timeframe that extends to the year 2040. Applicable goals and objectives from the City of Lafyette General Plan are listed below.

Goal LU-2. Ensure that development respects the natural environment of Lafayette. Preserve the scenic quality of ridgelines, hills, creek areas, and trees.

> **Policy LU-2.3.** Preservation of Views: Structures in the hillside overlay area shall be sited and designed to be substantially concealed when viewed from below from publicly owned property. The hillsides and ridgelines should appear essentially undeveloped, to the maximum extent feasible.

Goal LU-15. Construct capital improvement projects in a manner harmonious with the character of surrounding areas.

Goal OS-3. Maintain the semi-rural character and beauty of the city by preserving its open and uncluttered natural topographic features.

> **Policy OS-3.1** Protect natural features of the lands: The character and natural features of hills, steep slopes, riparian areas, woodlands, and open areas will be preserved in as natural a condition as feasible.
> Program OS-3.1.1: Ensure that grading does not detract from the natural forms of hillsides and that development retains the ecological characteristics of the site. This includes prominent geological features, individual trees, woodland, riparian vegetation, rock outcroppings, streams, ponds, drainage swales, and other natural features. Minimize the disturbance or removal of vegetation.

EBMUD Standard Construction Specifications

EBMUD's Standard Construction Specifications and Procedures apply to all contractors completing work for EBMUD, and to work completed by EBMUD staff. The following EBMUD practices and procedures are applicable to aesthetics:

- **EBMUD Standard Construction Specification 01 35 44, Environmental Requirements**

  EBMUD Standard Construction Specification 01 35 44 (Environmental Requirements) sets forth the contract requirements for environmental compliance to which construction crews must adhere, including provisions for site maintenance and lighting (EBMUD, 2023a). Specific planning documents and procedures related to aesthetics that are required by EBMUD are described below.

  - **Site Activities.** EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, Section 1.1(B) requires controls be implemented to ensure site is maintained in as clean a condition as possible. Measures related to construction site maintenance regarding aesthetics include:

    - When operations are completed, excess materials or debris shall be removed from the work area consistent with all applicable legal requirements and disposal facility permits.
    - Following completion of Work, remove ditches, dikes, or other ground alterations made by the Contractor, and return the ground surface to its former condition.
    - Prevent visible dust emissions from leaving the work areas.
  - **Lighting Used During Nighttime Work.** EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, Section 3.9 requires limits lighting during nighttime work. Specifically, the specification requires:
    - Ensure that temporary stationary lighting used during nighttime construction is only used when needed. All lighting used for nighttime construction shall be designed, installed, and operated to minimize glare that affects traffic near the work zone or that causes annoyance or discomfort for residences near the work zone. Lighting fixtures shall be located and aimed to provide the required level of illumination and uniformity in the work zone without the creation of unnecessary glare.

- **EBMUD Standard Construction Specification 01 35 45, Biological, Cultural, and Paleontological Resource Requirements**

  EBMUD Standard Construction Specification 01 35 45 (Biological, Cultural, and Paleontological Resource Requirements) sets forth the contract requirements for environmental compliance to which construction crews must adhere, including provisions for tree protection (EBMUD, 2023a). Specific planning documents and procedures related to aesthetics that are required by EBMUD are described below.
  - **Protection of Native and Non-Native Protected Trees.** EBMUD's Standard Construction Specification 01 35 45, Biological, Cultural, and Paleontological Resource Requirements, Section 3.1 requires tree protection measures be implemented for native and non-native protected trees (EBMUD, 2023b). Measures related to aesthetics regarding tree protection include:
    - Locations of trees to be removed and protected are shown in the construction drawings. Pruning and trimming shall be completed by the Contractor and approved by the Engineer. Pruning shall adhere to the Tree Pruning Guidelines of the International Society of Arboriculture.
    - Erect exclusion fencing five feet outside of the drip lines of trees to be protected. Erect and maintain a temporary minimum 3-foot high orange plastic mesh exclusion fence at the locations as shown in the drawings. The fence posts shall be six-foot minimum length steel shapes, installed at 10-feet minimum on center, and be driven into the ground. The Contractor shall be prohibited from entering or disturbing the protected area within the fence except as directed by the Engineer. Exclusion fencing shall remain in place until construction is completed and the Engineer approves its removal.

- No grading, construction, demolition, trenching for irrigation, planting or other work, except as specified herein, shall occur within the tree protection zone established by the exclusion fencing installed shown in the drawings. In addition, no excess soil, chemicals, debris, equipment or other materials shall be dumped or stored within the tree protection zone.
- In areas that are within the tree drip line and outside the tree protection zone that are to be traveled over by vehicles and equipment, the areas shall be covered with a protective mat composed of a 12-inch thickness of wood chips or gravel and covered by a minimum ¾-inch-thick steel traffic plate. The protective mat shall remain in place until construction is completed and the Engineer approves its removal.
- Tree roots exposed during trench excavation shall be pruned cleanly at the edge of the excavation and treated to the satisfaction of a certified arborist provided by EBMUD.
- Any tree injured during construction shall be evaluated as soon as possible by a certified arborist provided by EBMUD, and replaced as deemed necessary by the certified arborist

- **EBMUD Standard Construction Specification 01 74 05, Cleaning**

  EBMUD's Standard Construction Specification 01 74 05 Section 3.1 and 3.2, requires controls onsite related to maintaining cleanliness (EBMUD, 2015). Measures related to aesthetics regarding cleanliness include:

  - At all times maintain areas covered by the Contract and public properties free from accumulations of waste, debris, and rubbish caused by construction operations.
  - During execution of work, clean site and public properties and legally dispose of waste materials, debris, and rubbish to assure that buildings, grounds, and public properties are maintained free from accumulations of waste materials and rubbish. All soil and any other material tracked onto the streets by the Contractor shall be cleaned immediately. The Contractor shall comply with all rules and regulations as applicable for its cleaning method.
  - Dispose of all refuse off EBMUD property as often as necessary so that at no time shall there be any unsightly or unsafe accumulation of rubbish.
  - Wet down dry materials and rubbish to lay dust and prevent blowing dust.
  - Repair, patch, and touch up marred surfaces to specified finish to match adjacent surfaces.

3.1.3 Impact Analysis

Methodology for Analysis

Visual resources are generally defined as the natural and built landscape that is visible from the public view. As described above, visual character is a combination of the natural landscape (topography, vegetation, landforms, etc.) and built features (e.g., roads, buildings, structures). The visual quality analysis is based on field observations, along with photographs from the

Project area, Project maps, visual simulations of the Project, and other relevant data in the record. The analysis identifies potential temporary (short-term) and permanent (long-term) impacts on scenic vistas or the visual character and quality of a site as seen from various public viewpoints in the vicinity of the Project.

Methodology for Illustrating Existing and Proposed Conditions

Figure 3.1-10 through **Figure 3.1-16** provide visual simulations of the Project from each of the seven viewpoints, showing the existing views and the views after construction. The Project will add new trees to the Walnut Creek WTP site that will be visible from Viewpoints 4 through 6, and therefore additional visual simulations were prepared for these viewpoints to show the effect of tree growth after 5 years and again after 20 years. Visual simulations and renderings were prepared as part of the Walnut Creek Water Treatment Plant Pretreatment Project Aesthetics Conceptual Design Report (RHAA, 2023), which is included in **Appendix C**. For Lafayette WTP Viewpoint 1, only a visual simulation for 20 years after construction was prepared because visual sensitivity is low and trees planted at the site provide only minimal screening after 20 years.

Significance Criteria

Consistent with Appendix G of the *CEQA Guidelines* an impact on aesthetics would be considered significant if the Project would:

1. Have a substantial adverse effect on a scenic vista.
2. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.
3. In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the of the site and its surroundings (public views are those that are experienced from publicly accessible vantage points), or in an urbanized area, conflict with applicable zoning and other regulations governing scenic quality.
4. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

The approach to evaluating the effect of the Project under each CEQA significance criterion is briefly clarified below.

- ***Have a substantial adverse effect on a scenic vista.*** This criterion applies only to projects that would be on or disrupt access to a scenic vista or result in visual changes within the scenic vista's viewshed. Scenic vistas may be officially recognized or designated (e.g., within local planning documents or the Caltrans Scenic Highway Program), or the scenic vista may be informal in nature (e.g., mountain peaks or coastal bluffs). Effects would be considered substantial if the Project would appreciably damage or remove the visual qualities that make the view unique, unobstructed, and/or exemplary.
- ***Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.*** Damage to a scenic resource is substantial when the damage is reasonably perceptible to affected viewers, as seen from a scenic highway, and when the damage appreciably degrades one or more of the aesthetic qualities that contributes to a scenic setting.

- ***In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the of the site and its surroundings (public views are those that are experienced from publicly accessible vantage points), or in an urbanized area, conflict with applicable zoning and other regulations governing scenic quality.*** Degradation of visual character or quality of public view would be considered substantial if the Project would appreciably alter, impede, or remove the characteristics that provide high visual quality.
- ***Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.*** New sources of light or glare would be considered to have substantial adverse effects on views in the area if they are new nighttime lighting or create substantial glare from structures or finishes

Criteria Requiring No Further Evaluation

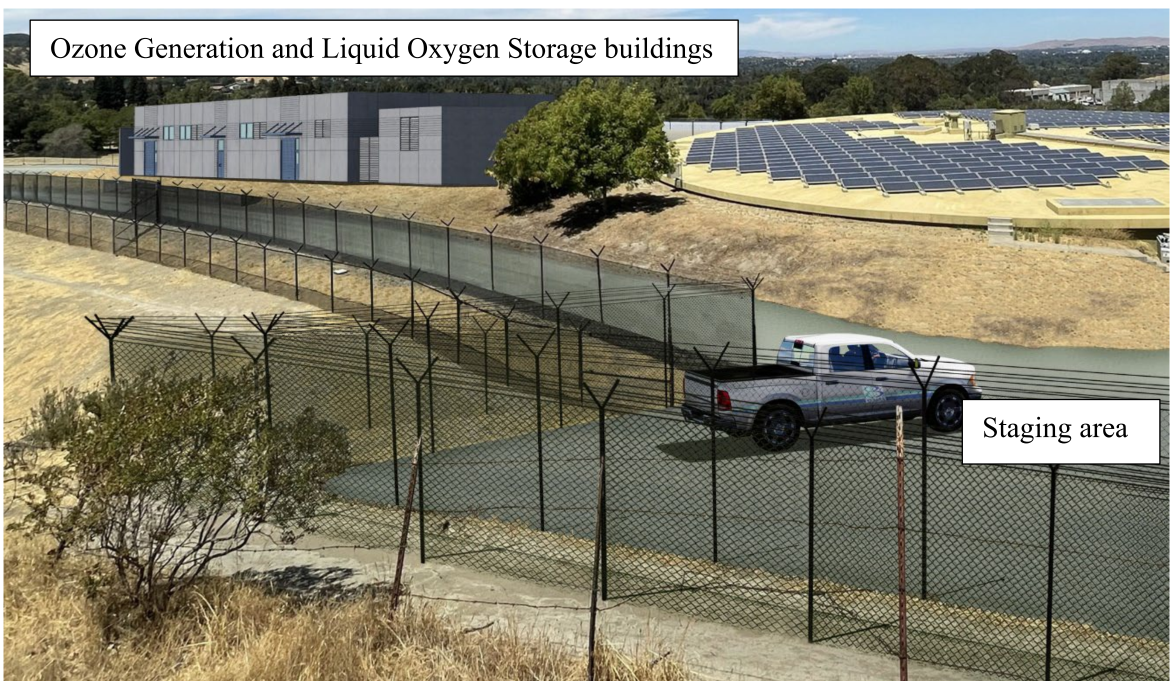
Criteria listed above that are not applicable to actions associated with the Project are identified below, along with a supporting rationale as to why further consideration is unnecessary and a no-impact determination is appropriate. The Project would not have significant impacts associated with the following criteria:

- ***Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway (Criterion 2).*** State Route 24 from the Caldecott Tunnel to Interstate 680 in Walnut Creek is an officially designated state scenic highway (Caltrans, 2019). The Walnut Creek WTP is approximately 1 mile north of State Route 24 and is not visible from the highway. Work at the Lafayette WTP would occur approximately 600 feet south of State Route 24 but would not be visible from the highway because the location of construction is screened by the berm on the south side of the highway, which is roughly 10 feet taller than the roadway, and by buildings at the Lafayette WTP.

  Interstate 680 in Contra Costa County is also an officially designated state scenic highway but is only designated as scenic from the intersection with State Route 24 south to the Alameda County line (Caltrans, 2019). The portion of Interstate 680 that is closest to the Walnut Creek WTP is north of the State Route 24 intersection and is not a designated scenic highway. The Walnut Creek WTP is more than a mile from the portion of Interstate 680 that is designated as scenic and is not visible from the freeway. Therefore, there would be no impact associated with damaging scenic resources within a state scenic highway.

Figure 3.1-10: Walnut Creek WTP Viewpoint 1 Visual Simulations – Before and After Construction

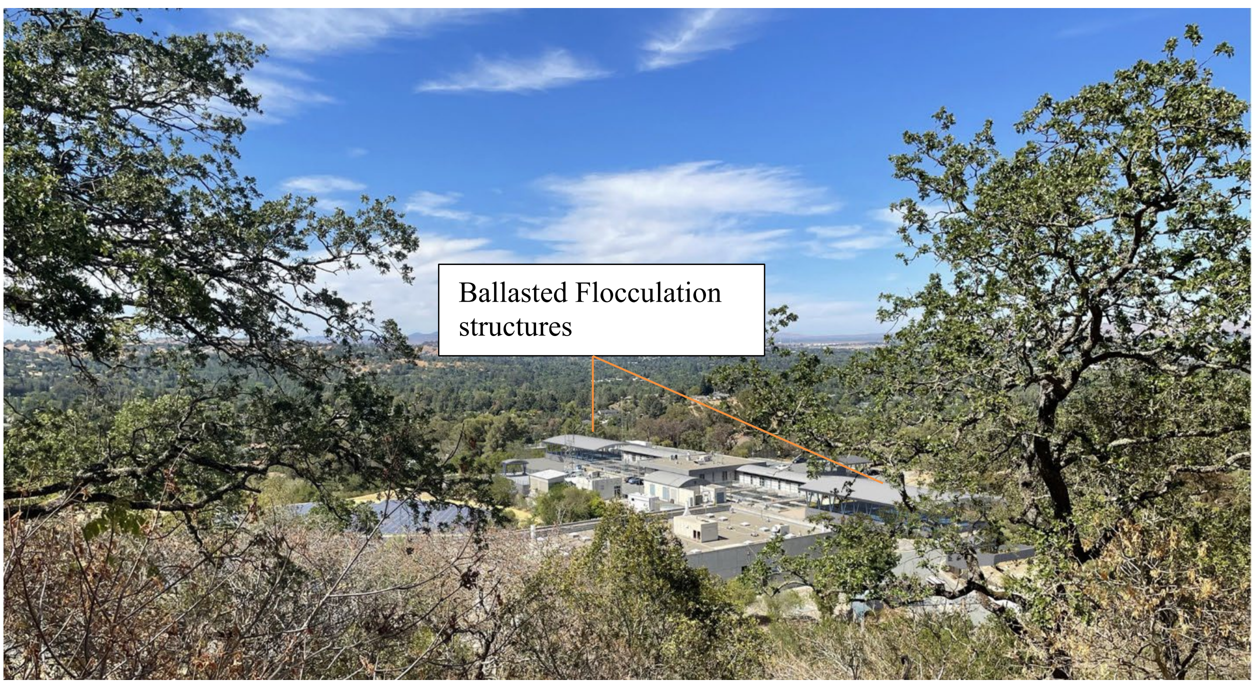
Before Construction - Existing View



After Construction - Ozone Generation Building and Liquid Oxygen Storage buildings and staging area in view

Figure 3.1-11: Walnut Creek WTP Viewpoint 2 Visual Simulations – Before and After Construction

Before Construction - Existing View



After Construction - Ballasted Flocculation structures on the north and south ends of the existing Operation Building, and partial view of Intermediate Ozone Contactor

Figure 3.1-12: Walnut Creek WTP Viewpoint 3 Visual Simulations – Before and After Construction

Before Construction – Existing Views

After Construction – Ballasted Flocculation Structures partially visible

Figure 3.1-13: Walnut Creek WTP Viewpoint 4 Visual Simulations – Before and After Construction

Before Construction – Existing View

After Construction - Consolidated Maintenance Building, Pre-Ozone Pumping Plant, Thickened Solids Pumping Plant, and Gravity Thickeners partially visible

5 Years After Construction

20 Years After Construction

Figure 3.1-14: Walnut Creek WTP Viewpoint 5 Visual Simulations – Before and After Construction

Before Construction – Existing View

After Construction - Gravity Thickeners, Thickened Solids Pumping Plant, and Solids Dewatering Building partially visible

5 Years After Construction

20 Years After Construction

Figure 3.1-15: Walnut Creek WTP Viewpoint 6 Visual Simulations – Before and After Construction

Before Construction – Existing View

After Construction - Consolidated Maintenance Building, Pre-Ozone Pumping Plant, Thickened Solids Pumping Plant, and Gravity Thickeners, and Ballasted Flocculation structure partially visible

5 Years After Construction

20 Years After Construction

Figure 3.1-16: Lafayette WTP Viewpoint 1 Visual Simulations – Before and After Construction

Before Construction – Existing View

20 Years After Construction

Impacts and Mitigation Measures

Impact AES-1: Have a substantial adverse effect on a scenic vista. (Criterion 1)

Walnut Creek WTP Construction Phases 1 and 2

The Walnut Creek WTP is located adjacent to Acalanes Ridge Open Space and is visible from a number of trails that traverse the open space area including the Briones-Mt. Diablo Regional Trail, Sousa Trail, Ridgetop Trail and Camino Verde Trail. Scenic vistas of rolling hills with Mt. Diablo in the background are available from multiple locations within the Acalanes Ridge Open Space Area. Views of the Walnut Creek WTP portions of the Project before and after construction are shown in **Figure 3.1-10** through **Figure 3.1-15**. Of the six viewpoints associated with the Walnut Creek WTP, only two have high visual quality or high visual sensitivity (see **Table 3.1-1** and *Section 3.1.1*, above). The two viewpoints are Walnut Creek Viewpoint 3 and Walnut Creek Viewpoint 5, and both are scenic vistas for purposes of this analysis due to their high visual quality and moderate to high visual sensitivity and views of the Project site. The remaining viewpoints, Walnut Creek WTP Viewpoints 1, 2, 4, and 6, have moderate visual quality and low to moderate visual sensitivity, and therefore are not scenic vistas due to their lower visual quality or would not experience an adverse effect due to their lower visual sensitivity.

Construction activities would include staging of equipment and materials, hauling materials in and out of the site, excavation, construction of the new structures, equipment, retaining walls, paving, and security fencing. Tree removal would occur to accommodate the new facilities, retaining wall and security fencing. However, tree removal would not substantially change the views from Walnut Creek WTP Viewpoint 3 or Walnut Creek WTP Viewpoint 5 because there are other trees between the viewpoints and the trees designated for removal, or trees to be removed, are not visible from the viewpoints. New trees would be planted as part of construction to provide additional screening for the new facilities. Additionally existing trees that would not need to be removed for Project construction would be protected consistent with EBMUD Standard Construction Specification 01 35 45, Section 3.1, Tree Protection, discussed below, which would ensure that trees that do not need to be removed for the Project would be protected from damage. As a result, existing trees that provide screening and have not been identified as needing removal for construction, would continue to provide screening of the Project from Walnut Creek WTP Viewpoint 3 and Walnut Creek WTP Viewpoint 5 during and after construction.

Lafayette WTP Construction

The Lafayette WTP is located between two major roads, State Route 24 and Mt. Diablo Boulevard, and is currently screened from view by topography and vegetation. Additional screening would be provided by the seven new oak trees that would be planted during construction. Limited views into the Lafayette WTP are available from Mt. Diablo Boulevard, and the Lafayette WTP is not within the viewshed of any scenic vistas. Therefore, the Project would have no substantial adverse effect on a scenic vista during construction of the Lafayette WTP components, and impacts would be less than significant.

As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including Standard Construction Specification 01 35 45, Section 3.1, Tree Protection, which would ensure that ensure that trees that do not need to be removed for the Project would be protected from damage. Tree protection measures include erection of exclusion fencing around trees and completing any necessary pruning of limbs or roots according to the guidelines of the International Society of Arboriculture. Also, EBMUD Standard Construction Specifications 01 74 05, Cleaning and 01 35 44, Section 1.1(B), Site Activities require construction practices that will ensure the site is maintained in as orderly and clean a condition as possible throughout construction.

Because Section 3.1, Tree Protection, of Standard Construction Specification 01 35 45,Section 1.1(B), Site Activities, of Standard Construction Specification 01 35 44, and Standard Construction Specification 01 74 05, Cleaning, have been incorporated into the Project and include measures to maintain an orderly construction site and to protect trees, and because the current and simulated views of the Project site from scenic vistas show visual changes would not be substantially adverse, construction activities for the Walnut Creek WTP Construction Phases 1 and 2, as well as Lafayette WTP Construction would not substantially degrade the existing visual character or quality of the site and its surroundings. The EBMUD Practices and Procedures Monitoring and Reporting Plan (**Appendix E**) lists the applicable standard specifications language.

Operation

Once constructed, operations at the Walnut Creek WTP would occur within the new structures, though additional hauling would occur compared to current operations to remove dewatered solids produced by the Project which could increase traffic seen entering or exiting the site from the designated viewpoints. Walnut Creek WTP Viewpoint 3 and Walnut Creek WTP Viewpoint 5 are the only two designated viewpoints for the Walnut Creek WTP site that are scenic vistas for purposes of this analysis due to the combination of their high visual quality and high to moderate visual sensitivity and views of the Project site. Views of the Project during operation would be consistent with those at completion of construction and decrease over time as trees planted as part of the Project design grow and mature. Project structures would be visible or partially visible from these two scenic vistas.

Walnut Creek WTP Viewpoint 3 looks north towards the Walnut Creek WTP site. As shown in **Figure 3.1-12**, the Ballasted Flocculation structure would be partially visible following construction of Phase 1. However, the visual simulation shows that distance, topography, and existing vegetation that would remain during and after construction, provide screening of the new structures. As a result, there would be no adverse impacts to the scenic vista experienced at Walnut Creek WTP Viewpoint 3, and impacts would be less than significant.

Walnut Creek WTP Viewpoint 5 looks south towards the Walnut Creek WTP site, and currently does not have any views of existing structures beyond the existing security fencing in the distance. As shown in **Figure 3.1-14**, the Gravity Thickeners, Thickened Solids Pumping Plant, and Solids Dewatering Building would be clearly visible following construction, though remain at a distance of approximately 500 feet from the viewpoint. Additionally, native oak trees would be planted during construction to provide long-term screening of the structures from Walnut Creek WTP Viewpoint 5. Visual simulations show that the tree growth over time would continue to increase the screening of the Project from the public. Coupled with the distance of the structures from Walnut Creek WTP Viewpoint 5, no substantial adverse impacts to the scenic vista would be experienced, and impacts would be less than significant.

Because trees would be planted and provide screening of Walnut Creek WTP structures from Walnut Creek WTP Viewpoint 5, and the distance between the structures and viewers would also reduce the visibility of structures, there would be no adverse impacts to the scenic vista experienced at Walnut Creek WTP Viewpoint 5, during operations and impacts would be less than significant.

Operation of Lafayette WTP would not change from existing operations because the Lafayette WTP portion of the Project only entails modification of weirs. Because the Project is not within the viewshed of any scenic vistas, impacts to a scenic vista during Project operation would be less than significant.

Significance Determination Before Mitigation

Less than significant.

Mitigation Measures

None required.

Impact AES-2: In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings, or in an urbanized area, conflict with applicable zoning and other regulations governing scenic quality. (Criterion 3)

Walnut Creek WTP Construction Phases 1 and 2

The proposed Project would involve tree removal, grading and construction of retaining walls and structures that would be visible from adjacent public viewpoints. Although the Walnut Creek WTP is adjacent to residential areas, the proposed Project would primarily be visible from the Acalanes Ridge Open Space and Briones to Mt. Diablo Regional Trail, which crosses the open space area. Thus, Criterion 3 is being evaluated to consider potential degradation of public views.

Construction activities would include staging of equipment and materials, hauling materials in and out of the site, excavation, construction of the new structures, equipment, retaining walls, paving, and security fencing. Tree removal would occur to accommodate the new facilities, retaining wall and security fencing. Views of the Walnut Creek WTP from the public trails and open space vary. Walnut Creek WTP Viewpoint 1, Walnut Creek WTP Viewpoint 4, and Walnut Creek WTP Viewpoint 6 have moderate visual sensitivity, reflecting their moderate visual quality and moderate to high exposure, meaning the public would have moderate views of the Project and would view the Project for an extended period of time. Walnut Creek WTP Viewpoint 2 has moderate visual quality and low exposure, meaning that when the public is able to see the Walnut Creek WTP, the site would only be visible for short periods of time. For these viewpoints, construction activities could be visible but would not substantially degrade the existing visual character or quality of the public views because the construction would be screened by distance, natural features or existing structures, or because the public would have a limited duration of exposure to views of the construction activities.

Walnut Creek WTP Viewpoint 3 and Walnut Creek WTP Viewpoint 5 both have high visual quality. Walnut Creek WTP Viewpoint 3 has moderate exposure, which in combination with its high visual quality results in a moderate visual sensitivity. Walnut Creek WTP Viewpoint 5 has high exposure, resulting in a high visual sensitivity. Although construction activities could be visible from each of these viewpoints, screening provided by distance, natural features, and topography would help to reduce views of such activities. Construction activities would be temporary and consistent with the industrial nature of the Walnut Creek WTP site. The Walnut Creek WTP site does not dominate views from Walnut Creek WTP Viewpoint 3 or Walnut Creek WTP Viewpoint 5, and construction activities would not substantially block or alter other portions of the views. As a result, construction would result in a less than significant impact to the existing visual character or quality of public views of the site and its surroundings.

Lafayette WTP Construction

The proposed work at the Lafayette WTP would require removal of some trees that would be visible from Mt. Diablo Boulevard. Removal of trees would increase views into the site, including of the new weir structure. However, views into the site are limited and already include views of a parking area that houses trucks and equipment, and seven new trees would be planted to provide screening of the new weir structure. Additionally, the views into the site are from Mt. Diablo Boulevard, and would primarily be experienced by pedestrians walking along the sidewalk at Lafayette WTP Viewpoint 1, as well as drivers and cyclists traveling on the roadway adjacent to the Lafayette WTP Viewpoint 1. Because limited changes would be visible from Mt. Diablo Boulevard and because Lafayette WTP Viewpoint 1 has low visual sensitivity, the Project would not substantially degrade the existing visual character and impacts would be less than significant.

Operation

Operation of the Project at the Walnut Creek WTP would primarily be conducted within the new and existing structures and would not be visible to the public. Additional truck trips would occur during operations for off-site removal of dewatered solids. Truck trips would be limited to roads on the Walnut Creek WTP site and public roads, which already experiences truck trips, and spread over the course of a day would be relatively minor.

New structures that are proposed to be constructed would be integrated into the existing Walnut Creek WTP and designed to match the aesthetics of the existing structures at the site. The Walnut Creek WTP is already visible from the six representative viewpoints, so the new facilities to be constructed at the site would not be inconsistent with the existing visual character of the Walnut Creek WTP. For Walnut Creek WTP Viewpoint 1, Walnut Creek WTP Viewpoint 2, Walnut Creek WTP Viewpoint 4, and Walnut Creek WTP Viewpoint 6, the moderate and low visual sensitivity means that changes to the views are unlikely to substantially degrade the quality of the view unless such changes were of a large size or substantially out of character with existing structures in the view. Changes to the views following construction of the Project at the Walnut Creek WTP from Walnut Creek WTP Viewpoints 1, 2, 4, and 6 are shown in **Figure 3.1-10**, **Figure 3.1-11**, **Figure 3.1-13**, and **Figure 3.1-15.** Those figures show the limited views of the new structures and how those structures are consistent with the existing visual character of the Walnut Creek WTP. Because the Project would be consistent with the existing Walnut Creek WTP's visual character, impacts would be less than significant for Walnut Creek WTP Viewpoints 1, 2, 4, and 6.

Walnut Creek WTP Viewpoint 3 and Walnut Creek WTP Viewpoint 5 are more sensitive to visual changes due to the combination of their high visual quality and moderate to high exposure.

Changes to the views following construction of the Project at the Walnut Creek WTP are shown in **Figure 3.1-12** and **Figure 3.1-14**. The views of the Project from Walnut Creek WTP Viewpoint 3 are distant and screened to a large degree by topography and trees. Changes would be difficult to discern within the context of the overall view from Walnut Creek WTP Viewpoint 3. Views of the Project from Walnut Creek WTP Viewpoint 5 would be clear, but impacts would be reduced by distance during and immediately following construction. Following construction, trees planted as part of the Project would grow and mature, providing additional screening. As previously noted, the new structures completed for the Project would be consistent in size, design, and look with existing Walnut Creek WTP structures and would not be a departure from the existing visual character of the area. Therefore, operations of the Walnut Creek WTP would not substantially alter the existing visual character of the public views of the site. Impacts would be less than significant.

Operation of the Project at Lafayette WTP would not change existing operation activities at Lafayette WTP, and therefore would not substantially alter the existing visual character of the public views of the site. Impacts would be less than significant.

Significance Determination Before Mitigation

Less than significant.

Mitigation Measures

None required.

Impact AES-3: Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area. (Criterion 4)

Construction at both sites could require temporary nighttime construction work for large concrete pours and for shutdowns/outages, which would require nighttime lighting. Lighting may also be necessary for construction during some portion of the day during winter months, when construction could start before sunrise or extend after sunset. Additionally, at the Walnut Creek WTP new external security lighting would be required for the proposed facilities to allow safe site access and provide secure viewing of the work areas at all times. The new security lighting would be focused downward to minimize light spillage to the surrounding neighborhood while still providing sufficient light for operations staff. Exterior lighting would be provided adjacent to the gravity thickeners, consolidated maintenance building, solids dewatering facility, and electrical building, pre-ozone injection pumps, ozone generator building and LOX storage area. There would be new lighting at the Lafayette WTP adjacent to Lafayette Weir No. 1 and Lafayette Weir No. 2. The creation of new lighting at the Walnut Creek WTP and Lafayette WTP, and the potential for construction activities to occur during nighttime hours at the Walnut Creek WTP and Lafayette WTP, is considered to be potentially significant.

Walnut Creek WTP Construction Phases 1 and 2

Construction hours are identified in *Section 2.6.7, Construction Schedule and Hours,* and would typically occur between 7:00 a.m. and 6:00 p.m. Monday through Friday. As noted there, no routine nighttime construction is expected for the Walnut Creek WTP site, though some temporary extended workdays may be required for large concrete pours or temporary shutdowns/outages. Given the anticipated construction hours, and limited extended days, the use of construction lighting would be limited. As described under *Section 2.6.10, Construction Lighting,* any lighting used during construction would be shielded.

Lafayette WTP Construction

Similar to Walnut Creek WTP, construction at the Lafayette WTP site would occur during the day with no routine nighttime construction anticipated. Construction would typically occur between 7:00 a.m. and 6:00 p.m., Monday through Friday. Any construction lighting that may be needed would be temporary and would be shielded downward to minimize visibility from the nearby Temple Isaiah. As described under *Section 2.6.10, Construction Lighting,* any lighting used during construction would be shielded.

As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including Standard Construction Specification 01 35 44, Section 3.9, Lighting Used During Nighttime Work, which would ensure that any lighting required during extended workdays at the Walnut Creek WTP and Lafayette WTP is designed and operated to minimize disturbance to traffic or residences and avoid unnecessary glare.

Because Specification 01 35 44, Environmental Requirements, Section 3.9, Lighting Used During Nighttime Work, has been incorporated into the Project and includes measures to reduce nuisance lighting during nighttime construction, and because the Project would have limited lighting needs during construction, construction activities for the Walnut Creek WTP Phases 1 and 2, as well as Lafayette WTP would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area. Therefore, lighting impacts during construction would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (**Appendix E**) lists the applicable standard specifications language

Operation and Maintenance

Operation lighting is described in *Section 2.7.6, Lighting*. Lighting would be required for securing and maintenance at the new structures. All lighting would be match existing light poles and be shielded fixtures that would be directed downward to minimize light pollution to the surrounding neighborhood. As a result, operational lighting impacts would be less than significant.

Significance Determination Before Mitigation

Less than significant.

Mitigation Measures

None required.

Cumulative Impact Analysis

The cumulative impact analysis considers whether the impacts of planned future projects coincide with the impacts from the Project. The only planned future projects near enough to the Project to be relevant for analysis of cumulative impacts are located at the Walnut Creek WTP and Lafayette WTP. A significant cumulative impact would result if impacts to aesthetic resources from the Project occur simultaneously with impacts from future projects causing substantial degradation of existing public views, scenic vistas, scenic highways, or light pollution. For aesthetic resources, cumulative impacts to scenic views would generally occur if construction of new facilities otherwise degraded additional views in the area.

The Project would not individually have significant adverse impacts on visual resources, and any visual changes from the Project would be contained within the Walnut Creek WTP and Lafayette WTP sites. The Walnut Creek WTP site is adjacent to existing open space, which is preserved from development, and bordered by single family homes, with limited opportunities for other developments that could contribute to cumulatively significant visual impacts. Additional planned projects within the Walnut Creek WTP site that could contribute to potential cumulative impacts would be designed to match the visual character of the site and would have similar levels of screening from public views as the Project. Therefore, cumulative aesthetic impacts of the Project at the Walnut Creek WTP site would be less than significant.

At the Lafayette WTP, the Project would be primarily screened from view, and would not result in additional light pollution. There are limited planned projects in the vicinity of the Lafayette WTP that could contribute to potential cumulative impacts, most of which would be within the Lafayette WTP site. Because the Lafayette WTP site is screened from public view by trees and berms, limiting visual access to the site, the Project would not contribute to cumulative visual impacts, and cumulative aesthetic impacts of the Project at the Lafayette WTP would be less than significant.

3.1.4 References

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3.2 Air Quality

This section describes the physical, environmental, and regulatory setting for air quality, identifies the significance criteria for determining environmental impacts, and evaluates the potential air quality impacts that could result from implementation of the Project. Air quality impacts depend on local conditions, the presence of receptors, and Project emissions. This section includes modeling to estimate the Project emissions associated with each Project phase, within the context of local conditions. Refer to **Appendix K** for supporting information, including air quality modeling outputs.

3.2.1 Environmental Setting

The discussion below defines the terms used in the air quality analysis and describes the conditions of the region and Project area. Information is based on publicly available information from the Bay Area Air Quality Management District (BAAQMD) California Environmental Quality Act (CEQA) Air Quality Guidelines (BAAQMD, 2017a, 2017b).

Climate and Meteorology

The Project is located in the Cities of Walnut Creek and Lafayette, which are both within the San Francisco Bay Area Air Basin (SFBAAB). The SFBAAB encompasses all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties, the southern portion of Sonoma County, and the southwestern portion of Solano County. Air quality is affected by topography and meteorology. The topography of the SFBAAB is dominated by the coastal mountain ranges, which extend to the north and south but split into western and eastern ranges to form the San Francisco Bay, with a gap at the Golden Gate Bridge and a gap at the Carquinez Straight allowing air exchange between the SFBAAB and California's Central Valley.

The meteorology of the SFBAAB is dominated by a semi-permanent, subtropical high-pressure cell. The cell sits over the northeastern Pacific Ocean in the summer, creating steady north/northwesterly winds, coastal ocean upwelling that contributes to fog, and prevents storms from passing over the area. The cell weakens and shifts to the south in the winter, allowing storms and precipitation to influence the area, but also shifting the wind pattern, which lessens upwelling and the formation of fog. Winter rains bring air mixing and ventilation, which tend to lower pollution levels. Periodically, however, the Pacific high-pressure cell stagnates, causing strong temperature inversions (layers of warmer air over colder air), light winds, and high potential for air pollution.

The frequency of hot, sunny days during the summer months is another important factor that affects air pollution because ozone is formed at warmer temperatures in the presence of sunlight when reactive organic gases and oxides of nitrogen react. Finally, the air pollution that occurs in a given location, such as the Project sites, also depends on the level of emissions in the location and emissions that are transported there. Air pollutant emissions generally are highest in areas that have high population densities, high motor vehicle use and/or industrialization.

The air quality in the Project area, which is in the Diablo Valley climatological subregion, is affected by the topography of the Coast Range mountains to the west, which block much of the marine air and fog, resulting in low average annual wind speeds of approximately 5 miles per hour (mph). During the daytime, there are two prominent wind flow patterns: an upvalley flow from the north and a westerly flow across the lower elevations of the Coast Range. On clear nights, surface inversion separates the flow of air into a surface and upper layer flow. Air temperatures in the Diablo Valley are generally cooler in the winter and warmer in the summer than are temperatures further west that experience the moderating effect of the San Francisco Bay and ocean. Temperatures during summer average in the low- to mid-80’s, while winter lows average in the high-30’s to low-40's. The air pollution potential in Diablo Valley is relatively high. On winter evenings, light winds combined with surface-based inversions and terrain that restricts air flow can cause pollutant levels to build up. In the summer months, ozone and ozone precursors are often transported into the valley from both the central SFBAAB and the Central San Joaquin Valley.

Criteria Air Pollutants

The BAAQMD and the California Air Resources Board (CARB) monitor the following criteria air pollutants: Ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM_{10} and $PM_{2.5}$), and lead (Pb). Ambient air quality standards have been set for the criteria pollutants at the federal level by the United States Environmental Protection Agency (U.S. EPA) and at the state level by CARB.

Ozone (O_3)

Ground-level O_3, a component of smog, forms when Reactive Organic Gases (ROG)[1] and Nitrogen Oxides (NO_X) react over time in the presence of sunlight. ROG and NO_X emissions come primarily from internal fuel combustion engines and the evaporation of solvents, paints, and fuels, and biogenic sources. In the SFBAAB, mobile sources are the single largest source of ROG and NO_X emissions. O_3 levels tend to accumulate during the day and peak in the afternoon hours. O_3 is a 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. O_3 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 O_3. O_3 causes respiratory irritation, constriction of the airways, and – at high concentrations – lung tissue damage. O_3 aggravates respiratory infections and diseases. In addition to its public health concerns, O_3 can cause damage to the leaf tissues of crops and natural vegetation; O_3 also can damage materials such as rubber, fiber, and plastics.

Particulate Matter (PM)

PM consists of a mixture of solid particles and liquid droplets, including smoke, dust, aerosols, and metallic oxides, which can remain in the atmosphere for many days before settling or washing out. PM emission sources in the SFBAAB include combustion, factories, grading and construction, demolition, agricultural activities, motor vehicles, and wood burning fireplaces and stoves. Some PM is naturally occurring, such as pollen or wildfires. Motor vehicles are responsible for about half of particulates in the SFBAAB. Some sources of PM (such as wood

[1] In this Air Quality chapter, ROG includes air pollutants referred to as Volatile Organic Compounds (VOC). VOCs means any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions to form ground level O_3 (40 CFR 51.100). VOC is generally used when referring to emissions from the application of architectural coatings. Both VOC and ROG are O_3 precursors and are summed together in this Air Quality analysis.

burning in fireplaces, and demolition and construction activities) are more local in nature, while others (such as vehicular traffic) have a more regional effect. PM is described by its size: PM_{10}, with diameters generally 10 micrometers and smaller, and $PM_{2.5}$, with diameters generally 2.5 micrometers and smaller. Large dust particles (diameter greater than 10 microns) settle out rapidly and are easily filtered by human breathing passages. The large dust particles are of more concern as a soiling nuisance rather than a health hazard. PM, especially $PM_{2.5}$, including diesel exhaust particles (diesel particulate matter [DPM]), can lodge deep in the lungs, block the flow of oxygen from the lungs to the bloodstream, and even pass from the lungs to the bloodstream and heart, causing respiratory illness, aggravated asthma, development of chronic respiratory disease in children, and many other health problems.

Nitrogen Dioxide (NO_2)

NO_2 is a byproduct of combustion processes that comes mostly from motor vehicle and industrial sources. NO_2 contributes to O_3 and PM formation, increases the risks of respiratory disease, and reduces visibility. NO_2 is a reddish-brown gas and may be visible on high pollution days as a brown cloud, especially when ground-level O_3 levels are also high.

NO_2 is an air quality concern because it is a respiratory irritant and a precursor of O_3. 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 (such as industrial activities), ships, aircraft, and rail transit. Typically, nitrogen oxides 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 O_3 or undergoes photochemical reactions in the atmosphere. Therefore, emissions of NO_2 from combustion sources are typically evaluated based on the amount of NO_X emitted from the source.

Carbon Monoxide (CO)

CO comes primarily from motor vehicle emissions in the SFBAAB, formed by the incomplete combustion of fuels. CO is an odorless and colorless gas. When inhaled, CO reduces the oxygen-carrying capacity of the blood. High CO concentrations develop primarily during winter when light winds combine with the formation of ground-level temperature inversions (typically from the evening through early morning). These weather conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures.

CO concentrations have declined dramatically in California due to existing controls and programs, and most areas of the state, including the Project area, have no problem meeting the CO state and federal standards. CO measurements and modeling were important in the early 1980s when CO levels were regularly exceeded throughout California. In more recent years, CO measurements and modeling have not been a priority in most California air districts due to the retirement of older polluting vehicles, fewer emissions from new vehicles, and improvements in fuels.

Sulfur Dioxide (SO_2)

SO_2 is a colorless gas with a strong odor because the gas comes from combustion of sulfur-containing fuels, such as oil, coal, and diesel. SO_2 is also a precursor to the formation of atmospheric sulfate and PM and contributes to the potential formation of atmospheric sulfuric acid that could precipitate downwind as acid rain. SO_2 contributes to PM formation and increases respiratory disease risk.

Lead (Pb)

Pb emissions have historically come from mobile and industrial sources. The contribution of Pb pollution from mobile sources has declined substantially due to regulatory efforts to remove Pb from motor vehicle gasoline. Nationwide, levels of Pb in the air decreased 98 percent between 1980 and 2014. Industrial sources still include Pb smelters, waste incinerators, utilities, and Pb-acid battery manufactures. Pb has a range of adverse neurotoxin health effects. In addition to human health problems, Pb in the environment can result in decreased growth and reproduction in plants and animals, and neurological effects in vertebrates.

Toxic Air Contaminants (TACs)

A toxic air contaminant (TAC) is defined as "an air pollutant which may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health" (California Health and Safety Code Section 39665). CARB has identified approximately 200 substances or groups of substances as TACs, including particulate emissions from diesel-fueled engines. Diesel exhaust is a complex mixture of gases and fine particles emitted by diesel-fueled internal combustion engines. The gases and particles contain substances known or suspected to be mutagens and carcinogens. Almost all diesel exhaust particle size is in the range of 10 micrometers or less in diameter, which makes the particles easily inhaled and eventually trapped in the bronchial and alveolar regions of the lung. TACs are regulated by BAAQMD using a risk-based approach (i.e., acute and chronic health risk, and cancer risk). The risk value is estimated based on the sensitivity of the receptor being exposed, a dose response value, as well as the hazard of the TAC itself.

Odors

Nuisance impacts of odors are also a concern in the SFBAAB. Common sources of odors include wastewater treatment plants, landfills, composting facilities, refineries, and chemical plants. While odors rarely have direct health impacts, they can be unpleasant and concerning.

Dust

Dust is also a concern of the SFBAAB. Common sources of nuisance dust include quarries, agriculture, grading, and construction. Dust emissions can contribute to reduced visibility, soiling of exposed surfaces, and increased concentrations of PM_{10}. Health effects of PM are discussed above.

Existing Air Quality

U.S. EPA and CARB set ambient air quality standards for the purpose of protecting public health, which are summarized in **Table 3.2-1**. The process and history of developing the standards is explained in further detail under Regulatory Framework. The ambient air quality standards establish a regional concentration above which a pollutant is known to cause health problems for sensitive populations, such as children and the elderly. Standards are set for the federal criteria air pollutants. In addition, CARB has set standards for sulfates, hydrogen sulfide, vinyl chloride and visibility reducing particles which are summarized in **Table 3.2-1**.

Table 3.2-1: Ambient Air Quality Standards

Pollutant	Average Time	California Standards Concentration	National Standards Concentration
Ozone (O_3)	1 Hour	0.09 ppm	none
	8 Hour	0.070 ppm	0.070 ppm
Particulate Matter (PM_{10})	24 Hour	50 μg/m^3	150 μg/m^3
	Annual	20 μg/m^3	none
Particulate Matter ($PM_{2.5}$)	24 Hour	none	35 μg/m^3
	Annual	12 μg/m^3	12.0 μg/m^3
Carbon Monoxide (CO)	1 Hour	20 ppm	35 ppm
	8 Hour	9 ppm	9 ppm
Nitrogen Dioxide (NO_2)	1 Hour	0.18 ppm	0.010 ppm
	Annual	0.030 ppm	0.053 ppm
Sulfur Dioxide (SO_2)	1 Hour	0.25 ppm	75 ppb
	24 Hour	0.04 ppm	0.14 ppm
	Annual Arithmetic Mean	none	0.030 ppm
Lead (Pb)	30-Day Average	1.5 μg/m^3	none
	Rolling 3-Month Avg	none	0.15 μg/m^3
Visibility Reducing Particles	8 hour	Extinction of 0.23 per kilometer	none
Sulfates	24 Hour	25 μg/m^3	none
Hydrogen Sulfide (H_2S)	1 Hour	0.03 ppm	none
Vinyl Chloride	24 hour	0.01 ppm	none

The SFBAAB has not met the ambient air quality standards for O_3 and PM, as summarized in **Table 3.2-2**. A non-attainment status means that measured pollutant concentrations have exceeded the ambient air quality standards and BAAQMD must develop a plan to reach attainment status. By contrast, attainment status means that measured pollutant concentrations did not exceed the ambient air quality standards and BAAQMD generally must develop a maintenance plan to ensure attainment is maintained.

Table 3.2-2: Attainment Status of Air Pollutants in the San Francisco Bay Area Air Basin

Air Pollutant	State Designation	Federal Designation
O_3 – 1-hour standard	Non-attainment	Not applicable (n/a)
O_3 – 8-hour standard	Non-attainment	Non-attainment
PM_{10} 24-hour	Non-attainment	Unclassifiable
PM_{10} annual	Non-attainment	n/a
$PM_{2.5}$ 24-hour	n/a	Nonattainment
$PM_{2.5}$ annual	Non-attainment	Unclassifiable/ Attainment
CO (both 1- and 8-hour)	Attainment	Attainment
NO_2 (both 1-hour and annual)	Attainment	Attainment
SO_2	Attainment	Designation unavailable
Pb (both 30-day and 3-month)	Designation unavailable	Attainment
Visibility Reducing Particles	Unclassified	n/a
Hydrogen Sulfide (H_2S)	Unclassified	n/a
Vinyl Chloride	No information available	n/a

The BAAQMD operates a regional air quality monitoring network that regularly measures the concentrations of the five major criteria air pollutants, O_3, CO, NO_2, SO_2, and PM (PM_{10}, and $PM_{2.5}$). Data are available from 1994 through 2019 (BAAQMD, 2019). CARB provides data summaries on O_3, PM_{10}, and $PM_{2.5}$ across California. Data for are available from 1973 through 2021 (CARB, 2023). **Table 3.2-3** below shows the number of times pollutant concentrations were recorded above federal and state air quality standards and the highest annual reading for each pollutant at the monitoring station closest to the Project with available data from 2019 through 2021. Note that the maximum monitored value in **Table 3.2-3** is the highest monitored average value over the respective averaging time (either a one-hour period, an eight-hour period on a given day), or a 24-hour period (from midnight to midnight).

Table 3.2-3: Air Quality Monitoring Summary

Pollutant[1]	Monitoring Station	Standard	Max Monitored Value, 2021	# Days Exceeded, 2021	Max Monitored Value, 2020	# Days Exceeded, 2020	Max Monitored Value, 2019	# Days Exceeded, 2019
O_3	Concord	State 1-hour (0.09 ppm)	0.096 ppm	1	0.108 ppm	2	0.092 ppm	0
		State & Federal 8-hour (0.070 ppm)	0.078 ppm	1	0.083 ppm	3	0.074 ppm	2
PM_{10}	San Pablo	State 24-hour (50 μg/m^3)	37 μg/m^3	0	114 μg/m^3	5.7	36 μg/m^3	0
		State Annual (20 μg/m^3)	18.7 μg/m^3	not reported	20.7 μg/m^3	not reported	16.6 μg/m^3	not reported
		Federal 24-hour (150 μg/m^3)	36.6 μg/m^3	0	112.7 μg/m^3	0	34.7 μg/m^3	0
$PM_{2.5}$	Concord	State & Federal Annual (12 μg/m^3)	8 μg/m^3	not reported	11 μg/m^3	not reported	6.8 μg/m^3	not reported
		Federal 24-hour (35 μg/m^3)	43.7 μg/m^3	2	119.8 μg/m^3	16.2	28.2 μg/m^3	0
CO	Oakland	State 1-hour (20 ppm)	Not yet available (N/A)	N/A	N/A	N/A	3.3 ppm	0
		Federal 1-hour (35 ppm)	N/A	N/A	N/A	N/A	3.3 ppm	0
		State & Federal 8-Hour (9 ppm)	N/A	N/A	N/A	N/A	1.1 ppm	0
NO_2	Oakland	State 1-hour (0.18 ppm)	N/A	N/A	N/A	N/A	0.062 ppm	0
		State Annual (0.03 ppm)	N/A	N/A	N/A	N/A	0.009 ppm	not reported
		Federal 1-hour (0.1 ppm)	N/A	N/A	N/A	N/A	0.062 ppm	0
		Federal Annual (0.053 ppm)	N/A	N/A	N/A	N/A	0.009 ppm	not reported
SO_2	West Oakland	State 24 Hour (0.04 ppm)	N/A	N/A	N/A	N/A	0.0027 ppm	0
		Federal 1-hour (0.075 ppm)	N/A	N/A	N/A	N/A	0.0192 ppm	0

[1]Sources: CARB, 2023 for pollutants O_3, PM_{10}, and $PM_{2.5}$; BAAQMD, 2019 for pollutants CO, NO_2, and SO_2.

Sensitive Land Uses

Some receptors are more sensitive than others to air pollutants. The reasons for greater sensitivity include pre-existing health problems, proximity to emissions source, or the duration of exposure to air pollutants. Land uses such as schools, children's day care centers, hospitals, and convalescent homes are more sensitive than the general public to poor air quality because the population groups associated with these uses have increased susceptibility to respiratory distress and other air quality-related health problems. People engaged in strenuous work or exercise also have increased sensitivity to poor air quality. Residential areas are more sensitive to air quality conditions than commercial and industrial areas because people generally spend longer periods of time at their residences, resulting in greater exposure to ambient air quality conditions.

The BAAQMD defines sensitive receptors as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples include schools, hospitals, and residential areas. As shown in **Figure 2-1** in the Project Description, the Walnut Creek Water Treatment Plant (WTP) site is bounded by the Briones to Mt. Diablo Regional Trail to the north and Acalanes Ridge Open Space to the south and west. There are single family homes adjacent to the eastern and northern borders of the Project site and St. Stephen Catholic Church is located on the northeastern border of the site.

As shown in **Figure 2-2** in the Project Description, the Lafayette WTP site is bounded by Mt. Diablo Boulevard to the south and west, Temple Isaiah and Contra Costa Jewish Day School to the east, and State Route 24 to the north. There are no residences adjacent to the Lafayette WTP site.

3.2.2 Regulatory Framework

This section describes policies and regulations related to air quality that may apply to the Project. Regulations are summarized from publicly available information from the BAAQMD CEQA Air Quality Guidelines (BAAQMD, 2017a, 2017b). Air quality is regulated by agencies such as U.S. EPA, CARB, and BAAQMD. Although the federal regulations may not be superseded, both state and local regulations are oftentimes more stringent.

Federal Policies and Regulations

US Environmental Protection Agency

U.S. EPA implements national air quality programs. Most of its mandates come from the federal Clean Air Act, which was enacted in 1963 and amended several times, most recently in 1990, referred to as the 1990 Clean Air Act Amendments (CAAA).

The CAAA required U.S. EPA to establish primary and secondary National Ambient Air Quality Standards (NAAQS) for O_3, CO, NO_X, SO_2, PM_{10}, and Pb (shown in **Table 3.2-1**). The CAAA also required states to prepare an air quality control plan, referred to as a State Implementation Plan (SIP) and to revise the SIPs to incorporate additional air pollution control measures for nonattainment areas. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies, which in turn inform the air quality standards.

In the early 1990s, at the request of CARB, U.S. EPA granted delegation authority for the implementation and enforcement of specified New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAPS) to the Bay Area and South Coast Air Quality Management Districts.

Federal Hazardous Air Pollutant Program

Title III of the CAAA requires U.S. EPA to promulgate the NESHAPs. The NESHAP for a particular pollutant may be different for major sources and for area sources of Hazardous Air Pollutants (HAPs); major sources are defined as stationary sources with potential to emit more than 10 tons per year (TPY) of any HAP or more than 25 TPY of any combination of HAPs; all other stationary sources are considered area sources. The emissions standards are to be promulgated in two phases. In the first phase (1992–2000), U.S. EPA developed technology-based emission standards designed to produce the maximum emission reduction achievable. The federal rules reflect the Maximum Achievable Control Technology (MACT). For area sources, the standards may be different, based on generally available control technology. In the second phase (2001–2008), U.S. EPA was required to promulgate health risk–based emissions standards, where deemed necessary, to address risks remaining after implementation of the technology-based NESHAP standards. Title II of the CAAA required U.S. EPA to promulgate vehicle or fuel standards containing reasonable requirements that control toxic emissions, at a minimum to benzene and formaldehyde. Performance criteria were established to limit mobile-source emissions of toxics, including benzene, formaldehyde, and 1,3-butadiene. In addition, Title II of the CAAA required the use of reformulated gasoline in selected US cities (those with the most severe O_3 nonattainment conditions) to further reduce mobile-source emissions.

State Policies and Regulations

California Air Resources Board

CARB implements the California Clean Air Act (CCAA), which was adopted in 1988. The CCAA requires that all air districts in the state endeavor to achieve and maintain the California Ambient Air Quality Standards (CAAQS), which are presented in **Table 3.2-1**. The CCAA specifies that air districts in California should focus on reducing the emissions from transportation and area-wide emission sources and provides air districts with the authority to regulate indirect sources.

The CCAA also directs CARB to “identify each district in which transported air pollutants from upwind areas outside the district cause or contribute to a violation of the O_3 standard and to identify the district of origin of transported pollutants.” The information regarding the transport of air pollutants from one basin to another was to be quantified to assist interrelated basins in the preparation of plans for the attainment of CAAQS. Studies conducted by CARB have identified air basins that are impacted by pollutants transported from other air basins (as of 1993). Among the air basins affected by air pollution transport from the SFBAAB are the North Central Coast Air Basin, the Mountain Counties Air Basin, the San Joaquin Valley Air Basin, and the Sacramento Valley Air Basin. The SFBAAB was also identified as an area impacted by the transport of air pollutants from the Sacramento region.

CARB is primarily responsible for developing and implementing air pollution control plans to achieve and maintain the NAAQS. CARB oversees state and local air pollution control programs and produces much of the SIP. Local air districts provide additional strategies for sources under their jurisdiction. CARB combines state and local data and submits the completed SIP to U.S. EPA. Other CARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control and air quality management districts), establishing CAAQS, determining and updating area designations and maps, and setting emissions standards for new mobile sources, consumer products, small utility engines, and off-road vehicles.

Toxic Air Contaminant Programs

The Tanner Air Toxics Act (Assembly Bill [AB] 1807) set forth a formal procedure for CARB to designate substances as TACs which includes research, public participation, and scientific peer review before CARB can designate a substance as a TAC. To date, CARB has identified approximately 200 TACs, and adopted the U.S. EPA's list of HAPs as TACs. Most recently, DPM was added to the CARB list of TACs. Once a TAC is identified, CARB then adopts an Airborne Toxics Control Measure for sources that emit that particular TAC. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If there is no safe threshold, the measure must incorporate maximum or Best Available Control Technology (BACT) to minimize emissions. None of the TACs identified by CARB have a safe threshold.

The California Air Toxics "Hot Spots" Information and Assessment Act (AB 2588) was adopted in 1987 and requires stationary sources to report the types and quantities of certain substances routinely released into the air. The goals of the California Air Toxics "Hot Spots" Act are to collect emission data, to identify facilities having localized impacts, to ascertain health risks, to notify nearby residents of significant risks, and to reduce those significant risks to acceptable levels.

CARB has adopted diesel exhaust control measures and stringent emission standards for various on-road mobile sources of emissions, including transit buses, and off-road diesel equipment (e.g., tractors, generators). In 2000, CARB adopted the Diesel Risk Reduction Plan, which recommends many control measures to reduce the risks associated with DPM such as lower emissions standards for new mobile engines, in-use compliance programs for existing mobile engines, catalyst-based diesel particulate filters for new and retrofit portable engines, replacement of older engines, and restricting operation of equipment. Other measures include the low sulfur diesel fuel requirement and tighter emission standards for heavy-duty diesel trucks and off-road diesel equipment nationwide. For example, the Truck and Bus regulation, which has been in effect since December 2008, is now in the last replacement phase of the regulation with a final deadline of January 1, 2023, for fleet operators to upgrade to 2010 or newer model year engines. Over time, the replacement of older vehicles results in a vehicle fleet that produces substantially less TACs. Mobile-source emissions of TACs (e.g., benzene, 1-3-butadiene, diesel PM) will be reduced further in California through a progression of regulatory measures, including the Low Emission Vehicle/Clean Fuels and Phase II reformulated gasoline regulations, and control technologies.

Health Risk Assessments

In 1992, the first AB 2588 Health Risk Assessment (HRA) guidelines were developed by the California Air Pollution Control Officers Association (CAPCOA). Subsequently, in 2003, the California Office of Environmental Health Hazard Assessment (OEHHA) released comprehensive HRA guidelines, which were updated for non-cancerous reference exposure levels in 2008, cancer potency factors for early life exposures in 2009, and exposure assessment models and factors in 2012. In March 2015, OEHHA issued a comprehensive update to its HRA guidelines which incorporated new data and studies regarding susceptibility of infants and children to air toxics. OEHHA also updated the "Hot Spots" Assessment and Reporting Program (HARP2) in 2015, which is the software that performs air dispersion modeling and calculates health risk.

Community Air Protection Program

In response to AB 617 (C. Garcia, Chapter 136, Statutes of 2017), CARB established the Community Air Protection Program (CAPP or Program). The Program's focus is to reduce exposure in communities most impacted by air pollution. The statewide effort includes community air monitoring, community emissions reduction programs, and funding to support cleaner technologies. In 2018, CARB approved the Community Air Protection Blueprint and selected the initial 10 communities for community air monitoring and/or community emissions reduction programs. In 2019, air districts deployed monitoring in communities selected for community air monitoring systems. Every year, CARB considers selecting communities, according to the process in the blueprint. The Bay Area has 3 selected communities: Richmond, West Oakland, and East Oakland. Each community has a steering committee that works with the air district to develop and implement monitoring plans and emission reduction programs. Within one year after the selection of additional communities, air districts adopt community emissions reduction programs. Annually, CARB review air districts' community emissions reduction programs.

Local Policies and Regulations

Bay Area Air Quality Management District

The BAAQMD attains and maintains air quality conditions in the SFBAAB through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. BAAQMD prepares plans for the attainment of ambient air quality standards, adopts and enforces rules and regulations concerning sources of air pollution, monitors ambient air quality and meteorological conditions, and implements programs and regulations required by the CAAA and CCAA. BAAQMD prepares guidelines to assist lead agencies in evaluating air quality impacts of projects proposed in the SFBAAB during the environmental review process required by CEQA.

BAAQMD is also responsible for the issuance of air quality permits for stationary equipment in the SFBAAB and the management of associated emissions. Nearly all stationary equipment that emits to the atmosphere requires an BAAQMD permit. Each source or control is evaluated before a project can be built or operated, to ensure air quality requirements are met. The Authority to Construct permit is a pre-construction permit that is issued before equipment is installed. An Authority to Construct permit may require the permit holder to meet certain conditions before operation can begin. The Permit to Operate allows the holder to use all equipment or activities listed on the permit. BAAQMD also manages an air emissions inventory from all permitted equipment. The inventory is used to track the level of air emissions and to make future decisions to reduce those emissions by tightening BAAQMD rules.

Air Quality Plans

As stated above, BAAQMD prepares plans to attain ambient air quality standards in the SFBAAB. BAAQMD prepared the *2017 Clean Air Plan* to reduce emissions of O_3 precursors, ROG and NOx, reduce transport of O_3 and its precursors to neighboring air basins, as well as enhance efforts to reduce emissions of PM and TAC. The *2017 Clean Air Plan* control strategy centers around 85 individual multi-pollutant control measures. To implement the control strategy, BAAQMD draws upon its existing mechanisms, such as rulemaking enforcement and permitting, and development and promotion of best practices. The *2017 Clean Air Plan* is an update to BAAQMD's most recent state O_3 plan, the 2010 Clean Air Plan.

Air Toxics Program

The BAAQMD limits emissions and public exposure to TACs through a number of regulations including Regulation 2-1 (General Permit Requirements), Regulation 2-2 (New Source Review), and Regulation 2-5 (New Source Review of TACs). Regulation 2-1, 2-2, and 2-5 apply to any new or modified source of TACs that is required to have an Authority to Construct permit or Permit to Operate. The rule does not apply to new or modified sources of TACs that have total project emissions below the trigger levels listed in Table 2-5-1 TAC Trigger Levels of Rule 5. Also, new or modified sources of TACs that have total project emissions below the trigger levels are not subject to the HRA requirements of Rule 5. For DPM, the chronic trigger level in Table 2-5-1 is 0.26 pounds per year. The BAAQMD prioritizes TAC-emitting stationary sources based on the quantity and toxicity of the TAC emissions and the proximity of the facilities to sensitive receptors.

Community Health Protection Program

The Community Health Protection Program works with Bay Area communities to plan and implement AB 617 (C. Garcia, Chapter 136, Statutes of 2017). BAAQMD collaborates with CARB, other local air districts, community groups, community members, environmental organizations, regulated industries, and other key stakeholders to reduce harmful air pollutants. BAAQMD also offers emission reduction grants as part of the Community Health Protection Grant Program. BAAQMD administers the Richmond Area Community Health Protection Program and the West Oakland Community Action Plan, as well as the Community Air Risk Evaluation Program.

Community Air Risk Evaluation Program

In 2004, BAAMQD initiated the Community Air Risk Evaluation (CARE) program to evaluate and reduce health risks associated with local exposures to TACs. Subsequently, the CARE program's focus expanded to include exposure to PM and O_3. The CARE program analyzes emissions of TAC, PM and O_3 precursors from point sources, area sources and on-road and off-road mobile sources, with an emphasis on reducing population exposure to diesel exhaust. The CARE program combines technical analyses, outreach to impacted communities, and policy mechanisms to reduce emissions and health risks in those communities. The technical analyses include identification of emissions sources, modeling and monitoring to estimate concentrations, and an assessment of exposures and health risks and mapping of the most impacted communities. Information derived from the technical analyses is used to focus emission reduction strategies in areas with high air pollution exposures and high density of sensitive populations. The maps, along with information about pollutants and their sources, are integrated into many of BAAQMD's programs and help prioritize actions. According to the CARE program mapping, the Project site is located next to – and the haul routes are located within – an area where the 24-hour $PM_{2.5}$ level exceeded the federal standard (35 $\mu g/m^3$) during three winters (2010-2012) for which data are available, and where the combined TACs, fine PM, and O_3 are estimated to have the greatest impacts on health.

Walnut Creek General Plan

The City of Walnut Creek General Plan is a long-range policy document intended to guide physical, economic, and environmental growth in the City of Walnut Creek. The City of Walnut Creek General Plan contains citywide elements, including a Built Environment element, which contains goals and objectives related to air quality. The City of Walnut Creek General Plan, which was adopted in 2006 and most recently amended in 2020, has a timeframe that extends to the year 2025. Applicable goals and objectives from the general plan are listed below.

Goal 4-31. Strive to meet State and federal air-quality standards for the region.

> **Policy 4-31.1.** Work with the Bay Area Air Quality Management District (BAAQMD) and the County in promoting better air quality.
>
> **Policy 4-31.2.** Consider additional land use and development criteria, standards, and decisions that have positive impacts on air quality and quality of life in general.

Lafayette General Plan

The City of Lafayette General Plan is a long-range policy document intended to guide physical, economic, and environmental growth in the City of Lafayette. The City of Lafayette General Plan contains citywide elements, including an Open Space Conservation, Land Use, and Circulation element. The City of Lafayette General Plan, which was adopted in 2002 and most recently amended in 2020, has a timeframe that extends to the year 2040. Applicable goals and objectives from the general plan are listed below.

Goal OS-10. Improve air quality.

> **Policy OS-10.1.** Regional Planning: Work with the Bay Area Air Quality Management District (BAAQMD) to implement the *Regional Clean Air Plan*.
>
> **Policy OS-10.2.** Air Quality Standards: Seek to comply with State and Federal standards for air quality.
>
> **Policy OS-10.3.** Vehicle Emissions: Improve air quality by reducing the use of single-occupant automobiles.

EBMUD Procedure 600 Community Outreach and Relations

EBMUD Procedure 600 promotes effective proactive communication and interaction with the public to maintain and enhance relationships between EBMUD and its customers. This procedure ensures residents are provided advance notice of potentially disruptive construction activities, including the geographical extent of the activity and the estimated duration of the activity. Procedure 600 also provides mechanisms for customers and the public to get concerns and questions addressed.

EBMUD Standard Construction Specifications

EBMUD's Standard Construction Specifications and Procedures apply to all contractors completing work for EBMUD, and to work completed by EBMUD staff. The following EBMUD practices and procedures are applicable to air quality:

- **EBMUD Standard Construction Specification 01 35 44, Environmental Requirements**

  EBMUD Standard Construction Specifications 01 35 44, Environmental Requirements (EBMUD, 2023) includes control measures for reducing dust and air pollutants that are applicable to the Project, as described below.

  - **Dust Control and Monitoring Plan.** EBMUD Standard Construction Specification 01 35 44, Section 1.4(F) requires that the contractor submit a Dust Control and Monitoring Plan detailing the means and methods for controlling and monitoring dust generated by demolition and other work on the site for the Engineer's acceptance prior to any work at the jobsite. The specification requires that the plan shall:
    - Identify methods to comply with all applicable regulations including but not limited to the Bay Area Air Quality Management District (BAAQMD) visible emissions regulation and Public Nuisance Rule.
    - Include items such as mitigation measures to control fugitive dust emissions generated by construction activities.
    - Outline practices for preventing dust emissions and procedures to be used during operations and maintenance activities.
    - Include measures for the control of paint overspray and abrasive blasting emissions, including, but not limited to containment, ventilation systems and monitoring for damage and leaks.
    - Detail the equipment and methods used to monitor compliance with the plan.
  - **Air Quality Control**. EBMUD Standard Construction Specification 01 35 44, Section 3.5 Air Quality Control, requires the contractor to implement all necessary air pollution construction measures according to the BAAQMD CEQA Guidelines, including the "Basic Construction Mitigation Measures" and the "Additional Construction Mitigation Measures," as applicable, as well as measures specified by EBMUD. Required air quality control measures include but are not limited to the following:
    - Implement all necessary air pollutant construction measures per the Bay Area Air Quality Management District "Basic Construction Mitigation Measures" (BAAQMD CEQA Guidelines May 2017), including, but not limited to the following:
      - All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
      - All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
      - 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.
      - All vehicle speeds on unpaved roads shall be limited to 15 mph.

- 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.
- 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.
- 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.
- The contractor shall post a District-furnished, publicly visible sign with District and Air District contact information regarding dust complaints.

▪ Implement all necessary air pollutant construction measures per the Bay Area Air Quality Management District "Additional Construction Mitigation Measures" (BAAQMD CEQA Guidelines May 2017) including but not limited to the following:

- All exposed surfaces shall be watered at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe.
- All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.
- Wind breaks (e.g., trees, fences) shall be installed on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50 percent air porosity.
- Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.
- The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time.
- All trucks and equipment, including their tires, shall be washed off prior to leaving the site.
- Site accesses to a distance of 100 feet from the paved road shall be treated with a 6- to 12-inch compacted layer of wood chips, mulch, or gravel.

- Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than one percent.
- Minimizing the idling time of diesel-powered construction equipment to two minutes.
- The project shall develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) would achieve a project wide fleet-average 20 percent NOx reduction and 45 percent PM reduction compared to the most recent ARB fleet average. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available.
- Use low VOC (i.e., ROG) coatings beyond the local requirements (i.e., Regulation 8, Rule 3: Architectural Coatings).
- Requiring that all construction equipment, diesel trucks, and generators be equipped with Best Available Control Technology for emission reductions of NOx and PM.
- Requiring all contractors use equipment that meets CARB's most recent certification standard for off-road heavy duty diesel engines.

▪ Implement all necessary District air pollutant construction measures, including but not limited to the following:

- Gravel or apply non-toxic soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites. Submit specifications for any dust palliatives applied to unpaved roads to the Engineer.
- Water and/or cover soil stockpiles daily.
- All transitions from soil to a paved road shall have best management practices applied to prevent drag out of soil.
- Water used for dust control shall not run off the job site and cause erosion or other issues.
- Use of recycled water for dust control is encouraged.
- Use line power instead of diesel generators at all construction sites where line power is available.
- Temporary sources of air emissions (such as portable pumps, compressors, generators, etc.) shall be electrically powered unless the use of such equipment is not practical, feasible, or available.

- All portable engines and equipment units used as part of construction shall be properly registered with the California Air Resources Board or otherwise permitted by the appropriate local air district, as required
- Minimize the use of diesel generators where possible.
- Follow applicable regulations for fuel, fuel additives, and emission standards for stationary, diesel-fueled engines.
- Locate generators at least 100 feet away from adjacent homes, schools, and parks.
- Perform regular low-emission tune-ups on all construction equipment, particularly haul trucks and earthwork equipment.
- On road and off-road vehicle tire pressures shall be maintained to manufacturer specifications. Tires shall be checked and re-inflated at regular intervals.
- Demolition debris shall be recycled for reuse to the extent feasible. See the Construction and Demolition Waste Disposal Plan paragraphs above for requirements for wood treated with preservatives (TWW).

o **Dust Monitoring During Demolition and Construction**. EBMUD Standard Construction Specification 01 35 44, Section 3.6 requires air monitoring per the Dust Control and Monitoring Plan along the perimeter of the jobsite. A minimum of 4 stations, one on each side of EBMUD property, shall be established, capable of continuous measurement of total particulate concentration when any dust generating activity is occurring.

- Ringelmann No. 1 Limitation: Contractor shall not emit from any source for a period or periods aggregating more than three minutes in any hour, a visible emission which is as dark or darker than No. 1 on the Ringelmann Chart, or of such opacity as to obscure an observer's view to an equivalent or greater degree.
- Opacity Limitation: Contractor shall not emit from any source for a period or periods aggregating more than three minutes in an hour an emission equal to or greater than 20% opacity as perceived by an opacity sensing device, where such device is required by Air Quality Management District regulations.
- All environmental and personal air sampling equipment shall be in conformance with the Association of Industrial Hygiene and National Institute of Safety and Health (NIOSH) standards.
- All analysis shall be completed by an Environmental Laboratory Accreditation Program (ELAP) certified laboratory for the specific parameters of interest.
- The Contractor shall provide to the Engineer, within 72 hours of sampling all test results.

- **EBMUD Standard Construction Specification 02 82 13, Asbestos Control Activities**

  EBMUD Standard Construction Specification 02 82 13 (EBMUD, 2014) requires that the contractor submit a detailed plan of the procedures to address asbestos-containing materials (ACM). The plan shall conform to EBMUD specifications and the latest regulations from the USEPA, the Occupational Safety and Health Administration (OSHA), the Bay Area Air Quality Management District (BAAQMD), the Cal/EPA Department of Toxic Substance Control, the California Department of Occupational Safety and Health (DOSH), and other federal, state, county, and local agencies. The plan shall include the location and layout of decontamination areas, the sequencing of asbestos work, the interface of trades involved in the performance of work, disposal plan including location of approved disposal site, a detailed description of the methods to be employed to control pollution, description of use of portable HEPA ventilation system, method of removal to prohibit visible emissions in work area, and packaging of removed asbestos debris. All workers performing work shall meet the requirements of the Asbestos Certification issued by the California Contractors State License Board. During demolition procedures, the contractor shall protect against the airborne release of hazardous materials and dusts. Asbestos materials uncovered during the demolition activities shall be disposed of in an approved manner complying with all applicable federal, state, and local regulations. Transportation equipment for removal of ACM shall be suitable for loading, temporary storage, transit and unloading of waste without exposure to persons or property. Contractor shall remove all evidence of ACM materials from the jobsite that are related to Project demolition.

  Section 1.1(B) requires the BAAQMD to be notified at least 10 work days prior to the beginning of demolition of any asbestos containing structures. Section 1.5(B) 1A requires that a detailed plan of the procedures proposed for use in complying with the regulations included in this specification and requires that asbestos abatement be included in the Construction and Demolition Waste Disposal Plan (required in EBMUD Standard Construction Specification 01 35 44, Section 1.4(C)), as discussed in *Section 3.8, Hazards and Hazardous Materials*.

3.2.3 Impact Analysis

Methodology for Analysis

The analysis of potential air quality impacts uses the project-level analysis methodology identified by the BAAQMD Guidelines (BAAQMD, 2017a). Based on the BAAQMD Guidelines, construction and operational emissions from the Project are quantified and compared to significance thresholds recommended by the BAAQMD. The California Emissions Estimator Model (CalEEMod version 2022.1.1.3) was used to quantify criteria air pollutant emissions. The model quantifies direct emissions from construction equipment, vehicle trips associated with worker commute and material delivery and hauling. The model also quantifies indirect emissions from area sources (e.g., architectural and pavement re-coatings), and stationary sources (e.g., generators), which are subject to BAAQMD permitting and possibly BACT requirements. Consistent with BAAQMD Guidelines, the criteria air pollutant emissions that are from area and stationary sources after the application of BACT have been quantified and included in total project emissions. Model inputs rely on information in Chapter 2, Project Description, and a series of constructability technical memoranda (Brown and Caldwell, 2020 and 2022a-d) that were prepared for each phase of Project construction.

Consistent with the BAAQMD Guidelines, the analysis assesses potential health risk and hazard impacts when sensitive receptors are located within 1,000 feet of emission sources. An HRA was conducted to assess potential TAC impacts from DPM and local $PM_{2.5}$ concentrations from Project construction using methodologies published by the OEHHA. OEHHA is responsible for developing and revising guidelines for performing HRAs under the state's Air Toxics Hot Spots Program Risk Assessment (AB 2588) regulation. In March 2015, OEHHA adopted revised guidelines, *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments* ("OEHAA Guidance"), which updates the previous guidance by incorporating advances in risk assessment with consideration of infants and children using Age Sensitivity Factors (OEHHA, 2015). The March 2015 changes also take into account the sensitivity of children to TAC emissions, difference breathing rates, and time spent at home.

The HRA is a quantitative analysis of Project construction emissions, given the proximity of construction activity on the Project site to sensitive receptors. The analysis evaluates whether the Project would cause health risks at nearby receptors that exceed the BAAQMD thresholds. Acute risks were not evaluated as DPM does not represent an acute health risk. The Project would not include any operational sources of TAC emissions nor would it include any land uses considered sensitive to TACs emitted by surrounding land uses. Therefore, no further discussion of operational TAC impacts is included.

Regarding the methodology for assessment of cumulative impacts, the BAAQMD Guidelines consider a project's contribution to cumulative impacts on regional air quality to be significant if the project's impact individually would be significant (i.e., exceeds the BAAQMD's quantitative thresholds). For a project that would not result in a significant impact individually, the project's contribution to any cumulative impact would be considered less than significant if the project is consistent with the local general plan and the local general plan is consistent with the applicable regional air quality plan. In this case, the applicable regional air quality plan is the *2017 Clean Air Plan*.

Significance Criteria

Consistent with Appendix G of the *CEQA Guidelines* an impact on air quality would be considered significant if the Project would:

1. Conflict with or obstruct implementation of the applicable air quality plan.
2. Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or state ambient air quality standard.
3. Expose sensitive receptors to substantial pollutant concentrations.
4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

BAAQMD Significance Thresholds

Impacts from Project construction are evaluated by comparing estimated construction emissions to the BAAQMD significance thresholds for construction, which are average daily emissions of 54 pounds per day for ROG, NO_X, and $PM_{2.5}$, and 82 pounds per day for PM_{10}. Only the exhaust portion of $PM_{2.5}$ and PM_{10} emissions are compared against the construction thresholds. The BAAQMD recommends that analyses focus on implementation of dust control measures rather than comparing estimated levels of fugitive dust to a quantitative significance threshold. The BAAQMD considers implementation of the BAAQMD-recommended best management measures for fugitive dust sufficient to ensure that the impact from construction-related fugitive dust is reduced to a less-than-significant level. The BAAQMD Guidelines provide feasible control measures for construction emission of PM_{10}. If the appropriate construction controls are implemented, air pollutant emissions for construction activities would be considered mitigated to a less-than-significant level.

For long-term operations, BAAQMD has two sets of significance thresholds, including average daily thresholds that are the same as the construction thresholds, and maximum annual thresholds that are 10 TPY for ROG, NO_X, and $PM_{2.5}$, and 15 TPY for PM_{10}.

For health risk impacts from exposure to TACs, BAAQMD recommends a cancer risk threshold of 10 in a million, an acute and chronic hazard index threshold of 1.0, and an annual average $PM_{2.5}$ threshold of 0.3 $\mu g/m^3$ for a project-level analysis.

The recommended BAAQMD thresholds of significance for considering whether the Project would contribute to a considerable increase in criteria air pollutants, expose sensitive receptors to considerable pollutant levels, conflict with the applicable air quality plan, or result in unpleasant odors are summarized in the **Table 3.2-4**.

Table 3.2-4: Air Quality Project-Level CEQA Thresholds of Significance

Pollutant	Construction-Related	Operational Related
Criteria Air Pollutants and Precursors (Regional)	Average Daily Emissions (lb/day)	Average Daily Emissions (lb/day) / Maximum Annual Emissions (tpy)
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)	Best Management Practices[1]	None
Local CO	None	9.0 ppm (8-hour average), 20.0 ppm (1-hour average)
Risk and Hazards for new sources (Individual Project)	Same as operational thresholds[2]	Increased cancer risk of >10.0 in a million Increased non-cancer risk of >1.0 Hazard Index (Chronic or Acute) Ambient $PM_{2.5}$ increase: >0.3 μg/m^3 annual average <u>Zone of influence</u>: 1,000-foot radius from property line of source
Risk and Hazards for new sources (Cumulative Threshold)	Same as operational thresholds[2]	Cancer risk of >100 in a million (from all local sources) Non-cancer risk of >10.0 Hazard Index (from all local sources) (Chronic) $PM_{2.5}$: >0.8 μg/m^3 annual average (from all local sources) <u>Zone of influence</u>: 1,000-foot radius from property line of source
Odors	None	5 confirmed complaints per year averaged over three years

[1] As explained below, EBMUD Standard Construction Specifications and Procedures for reducing dust and air pollutants are equivalent to BAAQMD BMPs.
[2] BAAQMD recommends that for construction projects that are less than one year duration, Lead Agencies should annualize impacts over the scope of actual days that peak impacts are to occur, rather than the full year.

Criteria Requiring No Further Evaluation

Criteria listed above that are not applicable to actions associated with the proposed project are identified below along with a supporting rationale as to why further consideration is unnecessary and a no-impact determination is appropriate.

- ***Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people (Criterion 4).*** During construction, diesel exhaust from construction equipment would generate some odors. However, construction -related odors would be temporary, localized, and would not persist upon Project completion. As a result, a substantial number of receptors would not be affected at any given time during construction. Odors would not be emitted during operation of the Project and associated facilities. Common sources of nuisance odors include wastewater treatment plants, sanitary landfills, composting facilities, petroleum refineries, chemical plants, painting/coating operations, coffee roasters, animal feed lots, food processing facilities, green waste and recycling operations, and metal smelting plants (BAAQMD, 2017a). The Project would not introduce an activity or source that is commonly associated with substantial odors. Therefore, there would be no odor impacts associated with the Project and Criterion 4 is not discussed further in the analysis presented below.

Impacts and Mitigation Measures

Impact AIR-1: Conflict with or obstruct implementation of the applicable air quality plan. (Criterion 1)

The BAAQMD Guidelines (BAAQMD, 2017a) recommend that a project's consistency with the current air quality plan be evaluated with respect to the following questions:

a. Does the project support the primary goals of the current air quality plan?
b. Does the project include applicable control measures from the current air quality plan?
c. Does the project disrupt or hinder implementation of any air quality plan control measures?

If all the questions can be answered in the affirmative, as supported by substantial evidence, then the project is consistent with air quality plans prepared for the SFBAAB.

The current air quality plan is the BAAQMD *2017 Clean Air Plan* (BAAQMD, 2017c). The *2017 Clean Air Plan* focuses on two goals: protect air quality and health at the regional and local scale and protect the climate. The subgoals of the first goal are to attain all state and national air quality standards, and to eliminate disparities among Bay Area communities in cancer health risk from TACs. The subgoal of the second goal is to reduce Bay Area greenhouse gas (GHG) emissions 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050. The *2017 Clean Air Plan* includes an integrated set of 85 control measures to reduce O_3 precursors, protect public health by reducing emissions of PM and TACs, and reduce GHG emissions across economic sectors. Some measures focus on reducing a single type of air pollutant; however, many of the measures reduce multiple pollutants and protect both public health and the climate.

BAAQMD (BAAQMD, 2017a) recommends that a project determine whether it supports the *2017 Clean Air Plan* goals by comparing project emissions to the BAAQMD thresholds of significance. If emissions would not exceed the thresholds of significance after incorporation of all feasible mitigation measures, then the project would be considered consistent with the *2017 Clean Air Plan*. Construction and operational emissions from the Project are presented below, compared to the BAAQMD thresholds of significance, followed by a discussion of consistency with the *2017 Clean Air Plan*.

Walnut Creek WTP Construction Phase 1

Construction activities are typically short term and result in emissions of O_3 precursors and PM in the form of dust (fugitive dust) and exhaust (e.g., vehicle tailpipe) emissions. Construction of Walnut Creek WTP Phase 1 includes site preparation and mobilization; excavation; development of staging areas, foundations, and subsurface structures; construction of buildings and drainage facilities; demolition of components in the existing water treatment plant; and site restoration. Pollutant emissions associated with Walnut Creek WTP Phase 1 construction would be generated from the following general construction activities: vehicle trips from workers traveling to and from the construction areas; trips associated with delivery and hauling of construction supplies to, and debris from, the construction areas; and fuel combustion by on-site construction equipment associated with site clearing, grading, excavation, construction, and demolition. These construction activities would temporarily create emissions of dust, fumes, equipment exhaust, and other air pollutants. Emissions of O_3 precursors and exhaust PM are primarily a result of the combustion of fuel from on-road and off-road vehicles. However, ROGs are also emitted from activities that involve painting or asphalt paving. The emissions generated on a daily basis would vary, depending on the intensity and types of construction activities occurring simultaneously at the time. Overall, the Walnut Creek WTP Phase 1 construction activities are expected to occur over a period of approximately 3 ¼ years to 5 years. Phase 2 is estimated to take approximately 2 years but may be longer. Given the potential range in construction duration, the shorter construction durations for Phase 1 and Phase 2 are used in the impact analysis to capture a worst-case scenario where construction activities are most intense. Various construction activities would generally take place sequentially, as described in *Section 2.6, Project Construction, Chapter 2, Project Description*.

Although construction emissions are considered short term and temporary, they have the potential to be a significant impact with respect to air quality, particularly when construction extends over a long period of time and/or when sensitive receptors are located close by. PM (i.e., PM_{10} and $PM_{2.5}$) are among the pollutants of greatest localized concern with respect to construction activities. Particulate emissions from construction activities can lead to adverse health effects and nuisance concerns, such as reduced visibility and soiling of exposed surfaces. Particulate emissions can result from a variety of construction activities, including excavation, grading, vehicle travel on paved and unpaved surfaces, and vehicle and equipment exhaust. Construction emissions of PM can vary greatly depending on the level of activity, the specific operations taking place, the number and types of equipment operated, local soil conditions, weather conditions, and the amount of earth disturbance.

Emissions of O_3 precursors ROG and NO_X are primarily generated from construction equipment exhaust and mobile sources and vary as a function of the number of daily vehicle trips, and the types and number of heavy-duty, off-road equipment used, and the intensity and frequency of their operation. Additionally, construction-related ROG emissions would also result from the application of asphalt; the amount of ROG emissions would vary depending on the amount of paving that would occur each day.

Table 3.2-5 shows a summary of the construction emissions as estimated using CalEEMod (version 2022.1). **Table 3.2-5** shows average daily emissions of criteria air pollutants after applying EBMUD standard Construction Specification Environmental Requirements, including applying non-toxic soil stabilizers on all unpaved areas at construction sites; limiting vehicle speeds to 15 mph or less on construction sites and adjacent unpaved roads; using wet power vacuum street sweepers; watering or covering potential dust-generating areas twice daily; using low-volatile organic compound (VOC) coatings; and using BACT for all construction equipment.

EBMUD's Standard Construction Specifications and Procedures for controlling dust and air quality emissions require implementation of BAAQMD's basic measures. Therefore, the Project's dust emissions would not exceed BAAQMD's significance thresholds for dust. The equivalent EBMUD Standard Construction Specification and Procedure is noted in parentheses after each BAAQMD Basic Construction Mitigation Measure.

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day. (EBMUD Standard Construction Specification 01 35 44, Section 3.5(A)(1)).
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered. (EBMUD Standard Construction Specification 01 35 44, Section 3.5(A)(2)).
- 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. (EBMUD Standard Construction Specification 01 35 44, Section 3.5(A)(3)).
- All vehicle speeds on unpaved roads shall be limited to 15 mph. (EBMUD Standard Construction Specification 01 35 44, Section 3.3(A)(4)).
- 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. (EBMUD Standard Construction Specification 01 35 44, Section 3.5(A)(5)).
- 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. (EBMUD Standard Construction Specification 01 35 44, Section 3.5(A)(6)).
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer’s specification. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation. (EBMUD Standard Construction Specification 01 35 44, Section 3.5(A)(7)).
- Post a publicly visible sign with the telephone number and person to contact at the Lead Agency 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 (EBMUD Standard Construction Specification 01 35 44, Section 3.5(A)(8). In addition, EBMUD Procedure 600 designates a Public Affairs liaison to respond to construction-related issues and coordinate with the construction project manager/engineer and any contractors to resolve any issues. EBMUD Procedure 600 requires contact information for the Public Affairs liaison (i.e., phone number, email address) and capital project site address be provided via conspicuous signage at construction sites, on all advance notifications, and on the EBMUD project website).

Total quantified emissions of criteria air pollutants over the 3 ¼-year Walnut Creek WTP Phase 1 construction period are averaged over the entire duration of construction (approximately 845 workdays accounting for all construction activities), and then compared to the BAAQMD significance thresholds. As shown in **Table 3.2-5**, emissions of all evaluated pollutants would be well below BAAQMD significance thresholds.

Table 3.2-5: Average Daily Construction Emissions – Walnut Creek WTP Phase 1

	ROG (lbs/day)	NO_X (lbs/day)	Exhaust PM_{10} (lbs/day)	Dust PM_{10} (lbs/day)	Exhaust $PM_{2.5}$ (lbs/day)	Dust $PM_{2.5}$ (lbs/day)
Walnut Creek WTP Phase 1 Construction Emissions	0.7	13.4	0.2	2.3	0.2	0.6
BAAQMD Threshold	***54***	***54***	***82***	***BMPs***	***54***	***BMPs***
Exceed Threshold?	No	No	No	No	No	No

Source: See **Appendix K** for CalEEMod model outputs.
Note: Average daily construction emissions are estimated as total pollutants divided by total number of days for the entire construction duration, consistent with BAAQMD Guidelines.

Walnut Creek WTP Construction Phase 2

Similar to Phase 1, construction of Walnut Creek WTP Phase 2 would involve multiple construction activities that would involve the use of heavy construction equipment at the site, trucks to haul material from the site, vendor trips to deliver construction materials to the site, and worker trips. Activities would produce direct criteria air pollutant emissions as a result of the combustion of fuel from on-road and off-road vehicles and application of asphalt. Construction of the Walnut Creek WTP Phase 2 would occur after Phase 1 over the course of approximately two years (construction could take more than two years, but the shorter duration is used in the impact analysis to capture a worst-case scenario where construction activities are most intense). Emissions in **Appendix K** assume Phase 2 construction occurs in 2031 and 2032. However, as described in Chapter 2, Project Description, Phase 2 construction depends on future untreated water quality and water demand and may occur later, depending on need. Improvements in technology and adherence to regulatory requirements will reduce emissions over time and, therefore, the emissions estimates presented herein are conservative, because if Phase 2 construction starts later than 2031, emissions would be lower. As described above, CalEEMod was used to estimate emissions (see CalEEMod outputs in **Appendix K**). **Table 3.2-6** shows average daily emissions of criteria air pollutants after applying EBMUD standard Environmental Requirements, including applying non-toxic soil stabilizers on all unpaved areas at construction sites; limiting vehicle speeds to 15 mph or less on construction sites and adjacent unpaved roads; using wet power vacuum street sweepers; watering or covering potential dust-generating areas twice daily; using low-VOC coatings; and using BACT for all construction equipment. EBMUD's Standard Construction Specifications and Procedures for controlling dust and air quality emissions are as stringent as BAAQMD's basic measures; therefore, the Project's dust emissions would not exceed BAAQMD's significance thresholds for dust. Total quantified emissions of criteria air pollutants over the 2-year Walnut Creek WTP Phase 2 construction period are averaged over the entire duration of construction (approximately 520 workdays accounting for all construction activities), and then compared to the BAAQMD significance thresholds. As shown in **Table 3.2-6**, emissions of all evaluated pollutants would be well below BAAQMD significance thresholds.

Table 3.2-6: Average Daily Construction Emissions – Walnut Creek WTP Phase 2

	ROG (lbs/day)	NO_X (lbs/day)	Exhaust PM_{10} (lbs/day)	Dust PM_{10} (lbs/day)	Exhaust $PM_{2.5}$ (lbs/day)	Dust $PM_{2.5}$ (lbs/day)
Walnut Creek WTP Phase 2 Construction Emissions	0.4	7.6	0.1	1.2	0.1	0.3
BAAQMD Threshold	54	54	82	BMPs	54	BMPs
Exceed Threshold?	No	No	No	No	No	No

Source: See **Appendix K** for CalEEMod model outputs.
Note: Average daily construction emissions are estimated as total pollutants divided by total number of days for the entire construction duration, consistent with BAAQMD Guidelines.

Lafayette WTP Construction

As described in Chapter 2, Project Description, construction at the Lafayette WTP would involve several activities including site preparation, clearing and tree removal, excavating and installing new large diameter pipelines, constructing the new Lafayette Weir No. 1 and modifying existing Lafayette Weir No. 2, demolishing existing Lafayette Weir No. 1, off haul of excavation and demolition materials, final paving and landscaping, and final inspections and testing. Construction activities would involve the use of heavy construction equipment at the site, trucks to haul material from the site, vendor trips to deliver construction materials to the site, and worker trips. Such activities would directly produce criteria air pollutant emissions as a result of the combustion of fuel from on-road and off-road vehicles, and asphalt application.

Construction of the Lafayette WTP improvements would occur at the same time as Walnut Creek WTP Phase 1. As described above, CalEEMod was used to estimate emissions (see CalEEMod outputs in **Appendix K**). Construction of the Lafayette WTP (e.g., site grading, site preparation, building retaining walls, revegetation) would occur continuously throughout a 3-year construction period from 2027 to 2030. **Table 3.2-7** shows average daily emissions of criteria air pollutants after applying EBMUD standard Environmental Requirements, including applying non-toxic soil stabilizers on all unpaved areas at construction sites; limiting vehicle speeds to 15 mph or less on construction sites and adjacent unpaved roads; using wet power vacuum street sweepers; watering or covering potential dust-generating areas twice daily; using low-VOC coatings; and using BACT for all construction equipment. EBMUD's Standard Construction Specifications and Procedures for controlling dust and air quality emissions are as stringent as BAAQMD's basic measures; therefore, the Project's dust emissions would not exceed BAAQMD's significance thresholds for dust. Total quantified emissions of criteria air pollutants from Lafayette WTP construction are averaged over the entire duration of construction (approximately 260 workdays accounting for all construction activities over three winter seasons), and then compared to the BAAQMD significance thresholds. As shown in **Table 3.2-7**, emissions of all evaluated pollutants would be well below BAAQMD significance thresholds.

Table 3.2-7: Average Daily Construction Emissions – Lafayette WTP

	ROG (lbs/day)	NO_X (lbs/day)	Exhaust PM_{10} (lbs/day)	Dust PM_{10} (lbs/day)	Exhaust $PM_{2.5}$ (lbs/day)	Dust $PM_{2.5}$ (lbs/day)
Lafayette WTP Construction Emissions	0.2	1.3	0.1	1.2	0.1	0.5
BAAQMD Threshold	54	54	82	BMPs	54	BMPs
Exceed Threshold?	No	No	No	No	No	No

Source: See **Appendix K** for CalEEMod model outputs
Note: Average daily construction emissions are estimated as total pollutants divided by total number of days for the entire construction duration, consistent with BAAQMD Guidelines.

Walnut Creek WTP Phase 1 and Lafayette WTP Combined Construction

As explained above, the construction schedules for Walnut Creek WTP Phase 1 and Lafayette WTP would overlap, while construction of the Walnut Creek WTP Phase 2 would occur after Phase 1, depending on water quality and demand. **Table 3.2-8** shows average daily emissions of criteria air pollutants after applying EBMUD standard Environmental Requirements, compared to the BAAQMD significance thresholds. As shown in **Table 3.2-8**, emissions of all evaluated pollutants would be well below BAAQMD significance thresholds.

Table 3.2-8: Average Daily Construction Emissions – Walnut Creek WTP Phase 1 and Lafayette WTP Combined

	ROG (lbs/day)	NO_X (lbs/day)	Exhaust PM_{10} (lbs/day)	Dust PM_{10} (lbs/day)	Exhaust $PM_{2.5}$ (lbs/day)	Dust $PM_{2.5}$ (lbs/day)
Combined Construction Emissions	1.0	14.7	0.2	3.4	0.2	1.1
BAAQMD Threshold	54	54	82	BMPs	54	BMPs
Exceed Threshold?	No	No	No	No	No	No

Source: See **Appendix K** for CalEEMod model outputs
Note: Average daily construction emissions are estimated as total pollutants divided by total number of days for the entire construction duration, consistent with BAAQMD Guidelines.

Whether or not a project's emissions exceed the BAAQMD significance thresholds, the BAAQMD recommends that all projects implement the Basic Construction Mitigation Measures that primarily address dust control, but also result in beneficial reductions in other criteria air pollutants. The BAAQMD considers implementation of the BAAQMD-recommended mitigation measures for fugitive dust sufficient to ensure that construction-related fugitive dust is reduced to a less-than-significant level. As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including Standard Construction Specification 01 35 44, Environmental Requirements and Standard Construction Specification 02 82 13, Asbestos Control Activities (as discussed in *Section 3.8, Hazards and Hazardous Materials*). Standard Construction Specification 01 35 44 Section 1.4(F), Dust Control and Monitoring Plan, and Section 3.6, Dust Monitoring During Demolition and Construction, include measures addressing dust controls and monitoring. Standard Construction Specification 01 35 44 Section 3.5, Air Quality Control, covers BAAQMD-recommended measures to reduce dust (e.g., watering exposed surfaces, reducing vehicle speeds to 15 mph or less on construction sites and adjacent unpaved roads, using wet power vacuum street sweepers; watering or covering potential dust-generating areas twice daily) and control air emissions (e.g., using equipment with BACT for NOx and PM, using electrical power where possible, limiting vehicle idling time, ensuring well-maintained vehicles), and requires EBMUD to use architectural coatings compliant with appropriate VOC limits as established in the BAAQMD regulations to reduce ROG emissions during construction and maintenance. All demolition activities of asbestos containing structures would be conducted in accordance with the requirements of EBMUD Standard Construction Specification 02 82 13, Asbestos Control Activities, which would ensure compliance with the procedures required by the BAAQMD for the safe removal and disposal of asbestos containing material. As described above, the modeling results shown in **Table 3.2-5**, **Table 3.2-6**, **Table 3.2-7,** and **Table 3.2-8** include implementation of EBMUD standard practices and procedures that would reduce emissions of dust and other evaluated pollutants to levels below the BAAQMD significance thresholds.

Further, as indicated in Impact AIR-2 (**Table 3.2-10**), and Impact GHG-1 (**Table 3.7-4**) in *Section 3.7, Greenhouse Gas Emissions*, the Project's TAC, and GHG emissions would also not exceed threshold levels (consistent with the BAAQMD Guidelines), indicating that construction emissions related with the Project would not have a significant impact on regional air quality or climate change, and would not pose significant health risks to the public.

The *2017 Clean Air Plan* contains 85 control measures to reduce air pollution in the Bay Area. Projects that incorporate all feasible control measures are considered consistent with the *2017 Clean Air Plan*. Use of medium- and heavy-duty vehicles for the Project would comply with applicable diesel emission standards for on-road and off-road engines, consistent with the *2017 Clean Air Plan's* measures requiring the use of cleaner diesel-fueled engines.

Because Section 3.5, Air Quality Control of Standard Construction Specification 01 35 44, Environmental Requirements, has been incorporated into the Project and includes measures to control dust, reduce equipment idling times, and properly maintain construction equipment, construction of the Project would be consistent with all applicable control strategies in the *2017 Clean Air Plan*. Because construction of the Project would be consistent with all three criteria identified by the BAAQMD to evaluate consistency with the *2017 Clean Air Plan*, impacts with respect to conflicting with or obstructing implementation of the *2017 Clean Air Plan* would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (**Appendix E**) lists the applicable standard specifications language.

Operation and Maintenance

As described in Chapter 2, Project Description, operation and maintenance activities would involve the use of trucks to haul dewatered solids from the site, truck trips to deliver chemicals to the site, and worker trips. Operation and maintenance of the Walnut Creek WTP would increase the number of hauling truck trips from approximately 2 daily trips to approximately 3 daily trips due to increased solids production after Project completion. Solids production and truck haul trips would increase during periods of lower water quality or high turbidity and could temporarily get as high as 21 truck trips per day during peak turbidity; however, such events are expected to be a rare occurrence, resulting in minimal additional average daily trips for solids removal. Walnut Creek WTP would require new deliveries of various chemicals (alum, polymer, microsand, hydrogen peroxide, and liquid oxygen) to treat the range of water quality entering the Walnut Creek WTP. As a result, the chemical delivery truck trips would increase from approximately 2 weekly trips (existing) to approximately 4 weekly trips. In addition, the new Walnut Creek WTP pretreatment facilities may require up to two additional operators and up to two additional maintenance staff. There would be no staffing changes or truck trips at the Lafayette WTP. To estimate average daily air pollutant emissions, this Air Quality analysis assumed Project operation and maintenance would result in an average of approximately six new trips per day (i.e., 1 trip for dewatered solids removal, 1 for chemical delivery, and 4 for operations and maintenance staff).

In addition, operation and maintenance of the Walnut Creek WTP would involve an increase in electricity use, and the electrical facilities building would include a backup generator that would be used in the event of a power outage by Pacific Gas & Electric. CalEEMod (version 2022.1) was used to estimate criteria air pollutants from Project operations. Emissions of criteria air pollutants from electricity produced by Pacific Gas & Electric are assumed to be regulated at the power plant level, not at the individual project level, and therefore not attributed to individual projects by CalEEMod. The backup generator is referred to as a stationary source and would be subject to BAAQMD permits. To estimate average daily air pollutant emissions from stationary sources, this Air Quality analysis assumed a 6,000-horsepower diesel generator would operate 40 hours per year.

At both the Lafayette and Walnut Creek WTPs sites, occasional recoating and repainting was assumed to be required for the asphalt surfaces and buildings over the Project’s lifetime, referred to as area sources, which would produce ROG emissions. On balance, the Walnut Creek WTP and Lafayette WTP construction would result in a net loss of trees. Trees help filter and remove pollutants from the air, and provide shade, which can lower energy use associated with building cooling. Air pollution from tree loss was modeled in CalEEMod with data produced from i-Tree Planting Calculator version 2.2.0. Project operation and maintenance would produce direct criteria air pollutant emissions as a result of the use of coating supplies, combustion of fuel from on-road and off-road vehicles, and loss of trees, as well as indirect emissions from production of electricity by Pacific Gas & Electric, as summarized in **Table 3.2-9**.

Table 3.2-9: Unmitigated Average Daily Operational Emissions

Source	ROG (lbs/day)	NO_X (lbs/day)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)
Mobile (i.e., avg. daily trips)	0.1	0.2	0.1	0.1
Area (e.g., building and asphalt recoating)	5.1	0.0	0.0	0.0
Electricity Energy, PG&E	--	--	--	--
Stationary emergency generator	1.1	4.9	0.2	0.2
Vegetation loss	0.1	0.1	0.1	0.1
TOTAL	**6.4**	**5.2**	**0.4**	**0.4**
BAAQMD Threshold	54	54	82	54
Exceed Threshold?	No	No	No	No

Source: See **Appendix K** for CalEEMod model outputs

The operation of the Walnut Creek WTP would include an O_3 treatment system. As described in the Project Description, the Walnut Creek WTP would be designed with O_3 gas quenching vaults that would quench (i.e., reduce to oxygen and water) O_3 before the water enters the next treatment process. There would be a total of five O_3 destruct vaults built across the Walnut Creek WTP site.

The potential for O_3 to be released into the atmosphere would depend on the O_3 gas quenching vaults' operating conditions. For example, if the volume of O_3 being introduced to the destruct vaults overwhelms the design capacity, the destruct vault would be protected by a pressure relief valve that would allow O_3 to by-pass the destruct unit and vent O_3 to atmosphere. This scenario could happen if the destruct vault contact chamber is filled and drained often, causing large levels of O_3 to accumulate in the headspace of the O_3 contactors. It could also happen if the quenching media becomes wet, or if the O_3 is not given sufficient contact time with the quenching media, thereby lowering the transfer efficiency. As explained in the Project Description, the Walnut Creek WTP would be designed with multiple redundant O_3 gas destruct systems. To meet permitting and OSHA requirements, multiple, redundant O_3 gas destruct systems would run whenever O_3 is being generated. The permit would require O_3 concentrations in the discharge to be very limited. Therefore, the average daily amount of O_3 released to the atmosphere is expected to be none or negligible.

As shown in **Table 3.2-9**, annual emissions would be below the BAAQMD regional significance thresholds for criteria air pollutants. Further, as indicated in Impact AIR-2, and Impact GHG-1 (**Table 3.7-5**) in *Section 3.7, Greenhouse Gas Emissions*, the Project's TAC, and GHG emissions would also not exceed threshold levels (consistent with the BAAQMD Guidelines), indicating that operational emissions related with the Walnut Creek WTP and Lafayette WTP would not have a significant impact on regional air quality or climate change, and would not pose significant health risks to the public.

The *2017 Clean Air Plan* contains 85 control measures to reduce air pollution in the Bay Area. Projects that incorporate all feasible control measures are considered consistent with the *2017 Clean Air Plan*. The water sector control measures of the *2017 Clean Air Plan* apply to operation of the Project. The *2017 Clean Air Plan* control measures to reduce emissions from the water sector seek to reduce emissions of criteria pollutants, TACs, and GHGs by encouraging water conservation.

- Measure WR2, Support Water Conservation: Develop a list of best practices that reduce water consumption and increase on-site water recycling in new and existing buildings; incorporate into local planning guidance.

The Project itself would not develop water conservation or recycling practices, although it would not conflict with the ability for EBMUD to support this goal. Therefore, the Project would not conflict with the *2017 Clean Air Plan* water sector control measures.

In addition, stationary source control measure SS32 of the *2017 Clean Air Plan* would be applicable to use of diesel-fueled backup generators for the Project.

- Measure SS32, Emergency Backup Generators, Reduce emissions of diesel PM and black carbon from Backup Generators through Draft Rule 11-18, resulting in reduced health risks to impacted individuals, and in climate protection benefits.

Measure SS32 seeks to reduce emissions from diesel backup generators through Rule 11-18, which BAAQMD amended in 2016 and 2017 to apply revised, more stringent OEHHA guidelines for the purpose of assessing TAC (including diesel PM) from new, modified, or existing sources. Use of backup generators for the Project would comply with applicable diesel emission standards for backup generators, consistent with BAAQMD Rules and Regulations and the *2017 Clean Air Plan's* measure.

EBMUD would be required to obtain an Authority to Construct and Permit to Operate from BAAQMD for the O_3 system and generator. Compliance with existing BAAQMD rules and regulations related to the permits would ensure emissions from the O_3 system and generator would be less than significant.

Operation and maintenance of the Walnut Creek WTP and Lafayette WTP would be consistent with all applicable control strategies in the *2017 Clean Air Plan*. Because operation and maintenance of the Project would be consistent with all three criteria identified by the BAAQMD to evaluate consistency with the *2017 Clean Air Plan*, the Project would lead to a less-than-significant impact with respect to conflicting with or obstructing implementation of the *2017 Clean Air Plan*.

Significance Determination Before Mitigation

Less than significant.

Mitigation Measures

None required.

Impact AIR-2: Expose sensitive receptors to substantial pollutant concentrations. (Criterion 3)

TACs and Localized $PM_{2.5}$ Concentrations

Construction activities would produce TACs primarily as DPM and $PM_{2.5}$ emissions from the exhaust of diesel-fueled construction equipment such as loaders, backhoes, cranes, etc., as well as heavy-duty truck trips. These emissions could result in elevated concentrations of DPM and $PM_{2.5}$ at nearby receptors. Exposure of receptors in the vicinity of the Walnut Creek WTP site and Lafayette WTP site to elevated concentrations of DPM and $PM_{2.5}$ could lead to an increase in the risk of cancer or other health impacts.

Walnut Creek WTP Construction Phase 1

As discussed under Sensitive Land Uses, the Walnut Creek WTP site is bounded by single family homes adjacent to the eastern and northern borders of the Project site, and St. Stephen Catholic Church is located on the northeastern border of the site. Given the Project's construction direction and proximity to sensitive receptors, there is the potential for the Project's construction-related DPM emissions to exceed the BAAQMD's risk and hazard significance thresholds of 10 excess cancer cases in a million, a hazard index (HI) of 1 for chronic and acute non-cancer risks, and an annual $PM_{2.5}$ concentration of 0.3 micrograms per cubic meter (ug/m^3). Consequently, an HRA was conducted to determine the level of risk generated by construction-related TACs and $PM_{2.5}$ at nearby receptors.

PM emissions over the duration of Project construction were used to estimate an emission rate in terms of pounds per hour based on the number of construction workdays and hours of construction per day. The pounds per hour emission rate was then used to model the highest annual concentrations in the Project vicinity (out to a distance of approximately 1.24 miles from the Walnut Creek WTP property boundary) using the American Meteorological Society/

Environmental Protection Agency Regulatory Model (AERMOD). In accordance with OEHHA's 2015 *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*, this HRA applied the highest estimated Project-generated annual concentrations of TACs at receptors in the Project vicinity to established cancer potency factors and acceptable reference concentrations for non-cancer health effects. This HRA calculated increased health risks and cancer risks using the modeled maximum DPM concentrations and OEHHA-recommended methodologies for infant, child, and adult exposure. The HRA modeled off-site receptors at the Walnut Creek WTP property line and the surrounding community. This HRA assumed emissions would be generated by the Project only during anticipated construction hours of 7:00 a.m. to 6:00 p.m. Monday through Friday. Receptors just outside of the Walnut Creek WTP property line were modeled as residential receptors. This HRA applied a standard fractional time at home factor of 73 percent for residents between 16 and 70 years old. For residents less than 16 years old, this HRA assumed exposure 100 percent of the anticipated construction time. Standard pathways of exposure were assumed for residential receptors, including inhalation, soil, dermal, and – for receptors less than 1 year old – mother's milk. This HRA modeled residential receptors' exposure as occurring over 4 years of construction (the 39-month construction period was rounded up to 4 years) for Walnut Creek WTP Phase 1. To conceptualize the highest possible risk to non-residential receptors, this HRA modeled off-site, non-residential, adult receptors at the property line of the Walnut Creek WTP site. This HRA modeled an off-site, non-residential, adult receptor's exposure as occurring during typical 8-hour working hours of the day (e.g., 9:00 a.m. to 5:00 p.m.) over 4 years of construction.

Maximum off-site $PM_{2.5}$ annual concentrations as modeled using AERMOD would occur at the property line and are presented in **Table 3.2-10** . The maximum off-site $PM_{2.5}$ annual concentrations would occur at the adjacent residences along the eastern property line along Alfred Avenue.

As a result of this HRA model, maximum risks would occur just off the eastern property line at the residential receptors along Alfred Avenue. As shown in **Table 3.2-10**, uncontrolled health risks (chronic HI, and $PM_{2.5}$ concentration) at the maximum affected residential receptors would be less than the significance thresholds, while cancer risk at the maximum affected residences is estimated at 10.7 in a million and would exceed the threshold of 10 in a million. As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including Standard Construction Specification 01 35 44, Section 3.5, Air Quality Control, which requires that all construction equipment, diesel trucks, and generators be equipped with BACT for emission reductions of NO_X and PM. Implementation of Standard Construction Specification 01 35 44, Section 3.4(A), Air Quality and Emissions Control assumes the use of engines that meet the Tier 4 Final Standards, EPA's most stringent standards for off-highway diesel engines, as the BACT for all construction equipment. Currently, Tier 4 engines or installation of Level 3 verified diesel emission control strategies (VDECS) represent BACT for the control of diesel PM (CARB, 2022). **Table 3.2-10** shows that with the use of Tier 4 controls, health risks would be less than the BAAQMD significance thresholds for all age groups. Use of construction equipment that meets the Tier 4 standard would reduce the cancer risk at the maximum affected residences to 3.6 in a million (as shown in **Table 3.2-10)**, which is less than the respective threshold of 10 in a million.

Table 3.2-10: Maximum Health Risk from Walnut Creek WTP Phase 1 of Project

Receptor	Maximum Cancer Risk (in a million)	Chronic Risk (HI)	Maximum $PM_{2.5}$ concentration (ug/m^3)
Uncontrolled Emissions			
Non-residential	0.3	0.005	0.066
Residential	10.7	0.005	0.061
Project-level threshold	***10.0***	***1.0***	***0.3***
Exceed threshold?	Yes	No	No
Controlled Emissions[1]			
Non-residential	0.1	0.002	0.052
Residential	3.6	0.002	0.048
Project-level threshold	***10.0***	***1.0***	***0.3***
Exceed threshold?	No	No	No

[1] Controlled emissions account for implementation of EBMUD Standard Construction Specifications. Controlled emissions use engines that meet Tier 4 Final Standards, EPA's most stringent standards for off-highway diesel engines, as the BACT for all construction equipment.
Note: See **Appendix K** for AERMOD model and HARP2 model health risk calculations. Source: Woodard & Curran AERMOD and HARP2 modeling, November 2022 - August 2023.

Because Standard Construction Specification 01 35 44, Section 3.5, Air Quality Control, has been incorporated into the Project and includes measures to use engines that meet the Tier 4 Final Standards as the BACT for all construction equipment to minimize short-term construction-related health risk to nearby receptors, the Project would not expose sensitive receptors to substantial pollution concentrations. In addition, because Section 3.5, Air Quality Control has been incorporated, the estimated health risk from exposure to Project construction emissions would be less than the recommended BAAQMD significance thresholds. Therefore, the Project's construction-related health risk from exposure to TACs and $PM_{2.5}$ would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (**Appendix E**) lists the applicable standard specifications language.

<u>Walnut Creek WTP Construction Phase 2</u>

As discussed in Chapter 2, Project Description, Phase 2 would involve construction of fewer facilities than Phase 1. Phase 2 would involve fewer worker trips, truck trips, on-site heavy equipment use, and have an overall smaller footprint of impact than Phase 1. Because Phase 2 would involve construction of fewer facilities than Phase 1, Phase 2 would result in fewer TAC emissions than Phase 1. The direction and proximity of Phase 2 construction to nearby sensitive receptors would be the same as Phase 1. As such, a separate, quantitative analysis was not performed for Phase 2. Instead, it is assumed that the health risk from Phase 2 would be less than that from Phase 1 because construction would occur in the same location and involve similar, although less intensive, activities.

Implementation of Standard Construction Specification 01 35 44, Section 3.5, Air Quality Control in this analysis assumes the use of engines that meet the Tier 4 Final Standards, EPA's most stringent standards for off-highway diesel engines, as the BACT for all construction equipment. With the use of Tier 4 controls, health risks at receptors in the vicinity of the Walnut Creek WTP site would be less than the BAAQMD significance thresholds for all age groups during construction of Phase 1. Because construction of Phase 2 would involve similar, although less intense, construction activities to Phase 1, and because health risks from controlled Phase 1 construction activities would be less than BAAQMD significance thresholds, health risks at receptors in the vicinity of the Walnut Creek WTP site would be less than the BAAQMD significance thresholds for all age groups during construction of Phase 2.

Because Standard Construction Specification 01 35 44, Section 3.5, Air Quality Control has been incorporated into the Project and includes measures to use engines that meet the Tier 4 Final Standards as the BACT for all construction equipment to minimize short-term construction-related health risk to nearby receptors, the Project would not expose sensitive receptors to substantial pollution concentrations. In addition, because Section 3.5, Air Quality Control has been incorporated, the estimated health risk from exposure to Project construction emissions would be less than the recommended BAAQMD significance thresholds. Therefore, the Project's construction-related health risk from exposure to TACs and $PM_{2.5}$ would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (**Appendix E**) lists the applicable standard specifications language.

<u>Lafayette WTP Construction</u>

As discussed in the *Environmental Setting, Sensitive Land Uses* (*Section 3.2.1*), the Lafayette WTP site is bounded by Mt. Diablo Boulevard to the south and west, Temple Isaiah and Contra Costa Jewish Day School to the east, and State Route 24 to the north. There are no residences adjacent to the Lafayette WTP site. Given the Project's construction direction and proximity to sensitive receptors, there is the potential for the Project's construction related DPM emissions to exceed the BAAQMD's risk and hazard significance thresholds of 10 excess cancer cases in a million, a HI of 1 for chronic and acute non-cancer risks, and an annual $PM_{2.5}$ concentration of 0.3 ug/m^3. Consequently, an HRA was conducted to determine the level of risk generated by construction-related TACs and $PM_{2.5}$ at nearby receptors.

PM emissions over the duration of Project construction were used to estimate an emission rate in terms of pounds per hour based on the number of construction workdays and hours of construction per day. The pounds per hour emission rate was then used to model the highest annual concentrations in the Project vicinity using AERMOD. In accordance with OEHHA's 2015 *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*, the HRA applied the highest estimated Project-generated annual concentrations of TACs at receptors in the Project vicinity to established cancer potency factors and acceptable reference concentrations for non-cancer health effects. This HRA assumed emissions would be generated by the Project only during anticipated construction hours of 7:00 a.m. to 6:00 p.m. Monday through Friday. Receptors at the Contra Costa Jewish Day School facilities were modeled as residential receptors while other receptors over the school parking lots and undeveloped portions of the property were modeled as off-site, non-residential, adult receptors. This HRA applied a standard fractional time at home factor of 73 percent for residents between 16 and 70 years old. For residents less than 16 years old, this HRA assumed exposure 100 percent of the time. Standard pathways of exposure were assumed for residential receptors, including inhalation, soil, dermal, and – for receptors less than 1 year old – mother's milk. This HRA modeled receptors' exposure as occurring over 3 years. This HRA modeled an off-site, non-residential, adult receptor's exposure as occurring during typical 8-hour working hours of the day (e.g., 9:00 a.m. to 5:00 p.m.) over 3 years of construction. This HRA used the modeled maximum DPM concentrations and OEHHA-recommended methodologies for infant, child, and adult exposure to calculate increased cancer risks at the receptors.

Modeled $PM_{2.5}$ concentrations, chronic risk and cancer risk are different at the Lafayette WTP site than at the Walnut Creek WTP site, which is attributable to different construction activities at the two sites. The Lafayette WTP site differs from the Walnut Creek WTP site in that the receptors modeled as residences are further from the property line at Walnut Creek WTP than at Lafayette WTP (i.e., the distance between residences on Alfred Avenue and the Walnut Creek WTP site is greater than the distance between receptors at Contra Costa Jewish Day School and the Lafayette WTP site). In addition, emissions at the Walnut Creek WTP site are distributed over a slightly larger area than emissions at Lafayette WTP, meaning emissions used in the health risk modeling are more "concentrated" at the Lafayette WTP site than at the Walnut Creek WTP site. Finally, the Walnut Creek WTP site has terrain changes between the site and receptors, which adds a layer of variation that is not present at the Lafayette WTP site. These site differences, in addition to Project-related construction activity differences, contribute to the varying results between the two sites. Where emissions are distributed across a smaller area with less terrain variability, the impact of emissions reductions tends to be larger.

The maximum off-site $PM_{2.5}$ annual concentrations as modeled using AERMOD would occur at the property line and are presented in **Table 3.2-11**. The maximum off-site $PM_{2.5}$ annual concentrations would occur downwind of the Lafayette WTP site at Contra Costa Jewish Day School.

As shown in **Table 3.2-11**, uncontrolled health risks for non-residential receptors and receptors at the Contra Costa Jewish Day School resulting from Project construction would be higher than the BAAQMD Guidelines significance thresholds. However, as detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including Standard Construction Specification 01 35 44, Section 3.5, Air Quality Control, which requires that all construction equipment, diesel trucks, and generators be equipped with BACT for emission reductions of NO_X and PM.

Table 3.2-11: Maximum Health Risk from Construction at Lafayette WTP

Receptor	Maximum Cancer Risk (in a million)	Chronic Risk (Hazard Index)	Maximum $PM_{2.5}$ concentration (ug/m^3)
Uncontrolled Emissions			
Non-residential	1.3	0.034	0.771
School	15.7	0.008	0.189
Project-level threshold	***10.0***	***1.0***	***0.3***
Exceed threshold?	Yes	No	Yes
Controlled Emissions[1]			
Non-residential	0.2	0.004	0.241
School	2.0	0.001	0.059
Project-level threshold	***10.0***	***1.0***	***0.3***
Exceed threshold?	No	No	No

[1] Controlled emissions account for implementation of EBMUD Standard Construction Specifications. Controlled emissions use engines that meet Tier 4 Final Standards, EPA's most stringent standards for off-highway diesel engines, as the BACT for all construction equipment.

Note: See **Appendix K** for AERMOD model and HARP2 model health risk calculations. Source: Woodard & Curran AERMOD and HARP2 modeling, November 2022 - August 2023.

Implementation of Standard Construction Specification 01 35 44, Section 3.5, Air Quality Control assumes the use of engines that meet the Tier 4 Final Standards, EPA's most stringent standards for off-highway diesel engines, as the BACT for all construction equipment. Currently, Tier 4 engines or installation of Level 3 verified diesel emission control strategies (VDECS) represent BACT for the control of diesel PM (CARB, 2022). **Table 3.2-11** shows that with the use of Tier 4 controls, health risks for non-residential receptors and receptors at the Contra Costa Jewish Day School would be less than the BAAQMD significance thresholds. Use of construction equipment that meets the Tier 4 standard would reduce the cancer risk to 2.0 in a million (as shown in **Table 3.2-11)**, which is less than the respective threshold of 10 in a million and would reduce $PM_{2.5}$ exposure to less than the respective threshold of 0.3 ug/m^3.

Because Standard Construction Specification 01 35 44, Section 3.5, Air Quality Control has been incorporated into the Project and includes measures to use engines that meet the Tier 4 Final Standards as the BACT for all construction equipment to minimize short-term construction-related health risk to nearby receptors, the Project would not expose sensitive receptors to substantial pollution concentrations and the estimated health risk from exposure to Project construction emissions would be less than the recommended BAAQMD significance thresholds. Therefore, the Project's construction-related health risk from exposure to TACs and $PM_{2.5}$ would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (**Appendix E**) lists the applicable standard specifications language.

Criteria Air Pollutants

<u>Walnut Creek WTP Phases 1 and 2 and Lafayette WTP Construction</u>

The primary health concern with exposure to criteria air pollutants NO_X and ROG emissions is the secondary formation of O_3. The Project would generate criteria pollutant emissions of ROG, NO_X, and PM, as discussed under Impact AIR-1; however, the impacts of ROG, NO_X, and PM emissions on sensitive receptors are more difficult to quantify. Given that O_3 formation occurs through a complex photo-chemical reaction between its precursors NO_X and ROG in the atmosphere with the presence of sunlight, the impacts of O_3 are typically considered on a basin-wide or regional basis instead of a localized basis. The health-based ambient air quality standards for O_3 therefore are as concentrations of O_3 and not as tonnages of their precursor pollutants (i.e., NO_X and ROG). It is not necessarily the tonnage of precursor pollutants emitted that causes human health effects, but the concentration of resulting O_3 or PM. Because of the complexity of O_3 formation and the non-linear relationship of O_3 concentration with its precursor gases and given the state of environmental science modeling in use at this time, it is not feasible to convert specific project-level emissions of NO_X or ROG emitted in a particular area to concentrations of O_3 in that area. Meteorology, the presence of sunlight, seasonal impacts, and other complex chemical factors all combine to determine the ultimate concentration and location of O_3 (SCAQMD, 2014; SJVAPCD, 2014). It is unlikely that Project ROG and NO_X emissions could result in an increase in ground-level O_3 concentrations in proximity to the Project sites or elsewhere in the air basin because, as shown in **Table 3.2-5**, **Table 3.2-6, Table 3.2-7**, **Table 3.2-8**, and **Table 3.2-9**, the Project would not exceed the numeric threshold for ROG and NO_X emissions during either construction or operation. Impacts would be less than significant.

As expressed in the *amicus curiae* briefs submitted for the *Sierra Club v. County of Fresno* case (also known as the *Friant Ranch Case* [SCAQMD, 2014; SJVAPCD, 2014]), the CEQA significance thresholds for criteria pollutants from the air district, in this case the San Joaquin Valley Air Pollution Control District (SJVAPCD), were set at emission levels tied to the region's attainment status, and are emission levels at which stationary pollution sources permitted by the air district must offset their emissions. A CEQA project must use feasible mitigations for the region to attain the health-based ambient air quality standards. Therefore, because the Project would not exceed the mass emissions thresholds established by the BAAQMD, it is unlikely that emissions from Project-related activities will cause or contribute to the exposure of sensitive receptors to ground-level concentrations of O_3 in excess of health-protective levels. In addition, EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, which requires control technology and best management practices for emissions control would limit exposure of sensitive receptors to concentrations of criteria air pollutants in excess of health-protective level from Project activities. Impacts would be less than significant.

Operation and Maintenance

The Project would not introduce any new sources of TAC emissions. Therefore, there would be no Project-related operational health risk impacts on nearby receptors. Operation and maintenance emissions of criteria air pollutants from the Project would be minimal, as shown in **Table 3.2-9,** and less than significant.

Significance Determination Before Mitigation

Less than significant.

Mitigation Measures

None required.

Cumulative Impact Analysis

Impact AIR-3: Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or state ambient air quality standard. (Criterion 2)

Construction

Criteria Air Pollutant Emissions

By definition, regional air pollution is largely a cumulative impact. Emissions from present and future projects contribute to the region's adverse air quality on a cumulative basis. No single project is sufficient in size, by itself, to result in non-attainment of air quality standards. Instead, a project's individual emissions contribute to existing cumulative air quality impacts (BAAQMD, 2017a). The project-level thresholds for criteria air pollutants are based on levels that would result in a cumulatively considerable net increase in criteria air pollutants if they were exceeded. Projects that would result in criteria pollutant emissions below the significance thresholds would result in a less-than-cumulatively considerable increase in criteria air pollutants. As shown in **Table 3.2-5**, **Table 3.2-6**, and **Table 3.2-7**, the Project's construction-related emissions would not exceed the BAAQMD construction-related criteria air pollutant significance thresholds (see Impact AIR-1 above), with incorporation of EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements, Section 3.5, Air Quality Control, which includes measures to control dust, reduce equipment idling times, and properly maintain construction equipment. Therefore, because the Project's emissions would not exceed the Project-level thresholds for criteria air pollutants, the Project would not result in a cumulatively considerable contribution to regional air quality impacts, resulting in a cumulative impact that is less than significant.

Because Section 3.5, Air Quality Control, of Standard Construction Specification 01 35 44, Environmental Requirements, has been incorporated into the Project and includes measures to control dust, reduce equipment idling times, and properly maintain construction equipment, construction of the Project would not result in a cumulatively considerable net increase of any criteria pollutant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (**Appendix E**) lists the applicable standard specifications language.

Health Risks

BAAQMD Guidelines recommend an assessment of cumulative health risk impacts. Therefore, in addition to Project construction, possible local stationary or vehicular source emissions should be added to the concentration to determine the cumulative total. Specifically, the CEQA Guidelines require that existing stationary and mobile emissions sources within 1,000 feet of a project area be considered, unless a larger zone of influence is appropriate on a project-by-project basis. Any potential cumulative health risk would result from Project activities plus any existing identified risk sources within the Project vicinity. The analysis below estimates cumulative health risks to off-site receptors most severely affected by the Project.

The BAAQMD developed a Google Earth application that maps the locations of all stationary sources in the region that the BAAQMD permits. For each source, the application lists the name of the source and the conservative screening level cancer risk and $PM_{2.5}$ concentration values. According to BAAQMD records (BAAQMD, 2020), there is one permitted stationary source within 1,000 feet of either the Lafayette WTP site or the Walnut Creek WTP site: a permitted generator located at the Walnut Creek WTP site. BAAQMD also developed a Roadway Screening Analysis Calculator (BAAQMD, 2015) for estimating risks and hazards from roadways in the Bay Area. The calculator has not been updated since 2015 and relies on older vehicle emissions standards, Emissions Factor (EMFAC) 2011. However, it provides a conservative understanding of ambient health risks associated with roadways at the Project sites. One mobile source (the SR-24 freeway, 200 feet north of the Lafayette WTP site) was included in the cumulative analysis for Lafayette. The 200,000 annual average daily traffic (ADT) on SR-24 was obtained from Caltrans for the most recently available year, 2017. No other roadways carry a volume over 10,000 ADT within 1,000 feet of either of the Project sites.

According to land use planning information from Contra Costa County and the Cities of Walnut Creek and Lafayette (City of Lafayette, 2002, City of Walnut Creek, 2006), there may be future development or redevelopment within one mile of the Project. Depending on the current and future land uses of surrounding areas, there may be future construction to accommodate projected increases in population, housing, and traffic, which may contribute to cumulative construction-related TAC emissions. The areas within 1,000 feet of the Walnut Creek WTP site to the west and south are designated for conservation and would therefore not experience future construction activities to accommodate population growth. To the east and north, the areas within 1,000 feet are designated residential; however, these areas are already built-out and any future construction to accommodate population growth would likely involve minor reconstruction or in-fill projects. The area within 1,000 feet of the Lafayette WTP site is designated for low-density residential use and is also already built out; there are no residential uses directly adjacent to the Lafayette WTP. At a planning level, any future construction-related TAC emissions from projects within 1,000 feet of either Project site would not create TAC emissions at levels that, when viewed in combination with emissions from the Project and other past and current projects would be cumulatively considerable.

The cumulative health risks (cancer risk, annual $PM_{2.5}$ concentration, and chronic non-cancer hazards) from the Project, along with risks from SR-24 and the permitted stationary source, are presented in **Table 3.2-12**. Estimated cumulative health risks would be below BAAQMD-recommended thresholds for cumulative impacts. Therefore, cumulative health risks to receptors in the Project vicinity would be less than significant, and the Project's contribution to cumulative health risks would be less than cumulatively considerable.

Table 3.2-12: Cumulative Health Impacts on Maximally Impacted Project Receptors

Source	Distance to Point of Maximum Impact (feet)	Cancer Risk (persons per million)	Chronic Hazard Impact	$PM_{2.5}$ Concentration (µg/m^3)
Lafayette WTP Site				
Lafayette WTP Project - Residential	112 (off the southeastern property boundary)	4.6	0.001	0.012
SR-24 Freeway	200 feet	23.32	Not available	0.644
Plan- level construction	1,000 feet	Negligible	Negligible	Negligible
Cumulative Impacts	--	27.92	< 0.01	0.656
Walnut Creek WTP Site				
Walnut Creek WTP Project - Residential	17 (near the eastern property boundary)	9.8	0.002	0.048
Generators at Walnut Creek WTP	< 1	4.429	0.001	0.006
Plan- level construction	1,000 feet	Negligible	Negligible	Negligible
Cumulative Impacts	--	14.229	< 0.01	0.054
Cumulative Significance BAAQMD Thresholds	***--***	***100***	***10***	***0.8***
Exceed threshold?	--	No	No	No

Operation

As discussed under Impact AIR-1 and shown in **Table 3.2-9**, once operational, Project facilities would not increase emissions of criteria air pollutants over existing conditions and would therefore not contribute to a cumulative impact. The Project would also not be a source of TACs or $PM_{2.5}$ emissions because there would be no considerable net change in emissions sources (i.e., diesel-fueled equipment). Therefore, operation of the Project would not contribute to cumulative risk and hazard impacts.

3.2.4 References

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3.3 Biological Resources

This section describes the physical, environmental, and regulatory setting for biological resources, identifies the significance criteria for determining environmental impacts, and evaluates the potential impacts on biological resources that could result from implementation of the Project. Biological resources include plant and wildlife species, especially those considered special-status species (including rare, threatened, or endangered species), sensitive natural communities, and sensitive habitats (e.g., streams and wetlands). **Figure 3.3-1** shows the study area for the Walnut Creek WTP, and **Figure 3.3-2** shows the study area for the Lafayette WTP.

3.3.1 Definitions

The definitions below are those used by federal, state, and local regulatory agencies in regulations and laws that apply to the Project.

Diameter at Breast Height* (*dbh*)*: The diameter or circumference of a tree trunk, measured 4.5 feet above the ground. For multi-stemmed trees, dbh is calculated as an aggregate sum of stem diameters.

***Special-Status Species*:** Special-status species include:

- Plant and wildlife species listed as threatened or endangered under the Federal Endangered Species Act (FESA; 50 Code of Federal Regulations [CFR] 17) and the California Endangered Species Act (CESA).
- Species protected by California Fish and Game Code (CFGC), including nesting birds and Fully Protected species (CFGC Sections 3511, 4700, 5050 and 5515).
- Plant, fish, and wildlife species listed as Threatened or Endangered under CESA; and the laws and regulations for implementing CESA as defined in CFGC Section 2050 et seq. and the California Code of Regulations (CCR) 14 CCR Section 670.1 et seq., and candidates for listing under the statute (CFGC Section 2068).
- Species meeting the definition of "Rare" or "Endangered" under *California Environmental Quality Act (CEQA) Guidelines* 14 CCR Section 15125 (c) and/or 14 CCR Section 15380, including plants listed on California Native Plant Society (CNPS) Lists 1A, 1B, 2A, 2B, 3 and 4.
- United States (U.S.). Fish and Wildlife Service (USFWS) Birds of Conservation Concern.
- Species of special concern, as designated by the California Department of Fish and Wildlife (CDFW) and required by 14 CCR Section 15380.
- Avian species protected by the Migratory Bird Treaty Act (MBTA) (16 United States Code Sections 703–711).
- Other species considered to be sensitive or important by resource agencies and/or the scientific community.

Figure 3.3-1: Walnut Creek WTP Study Area

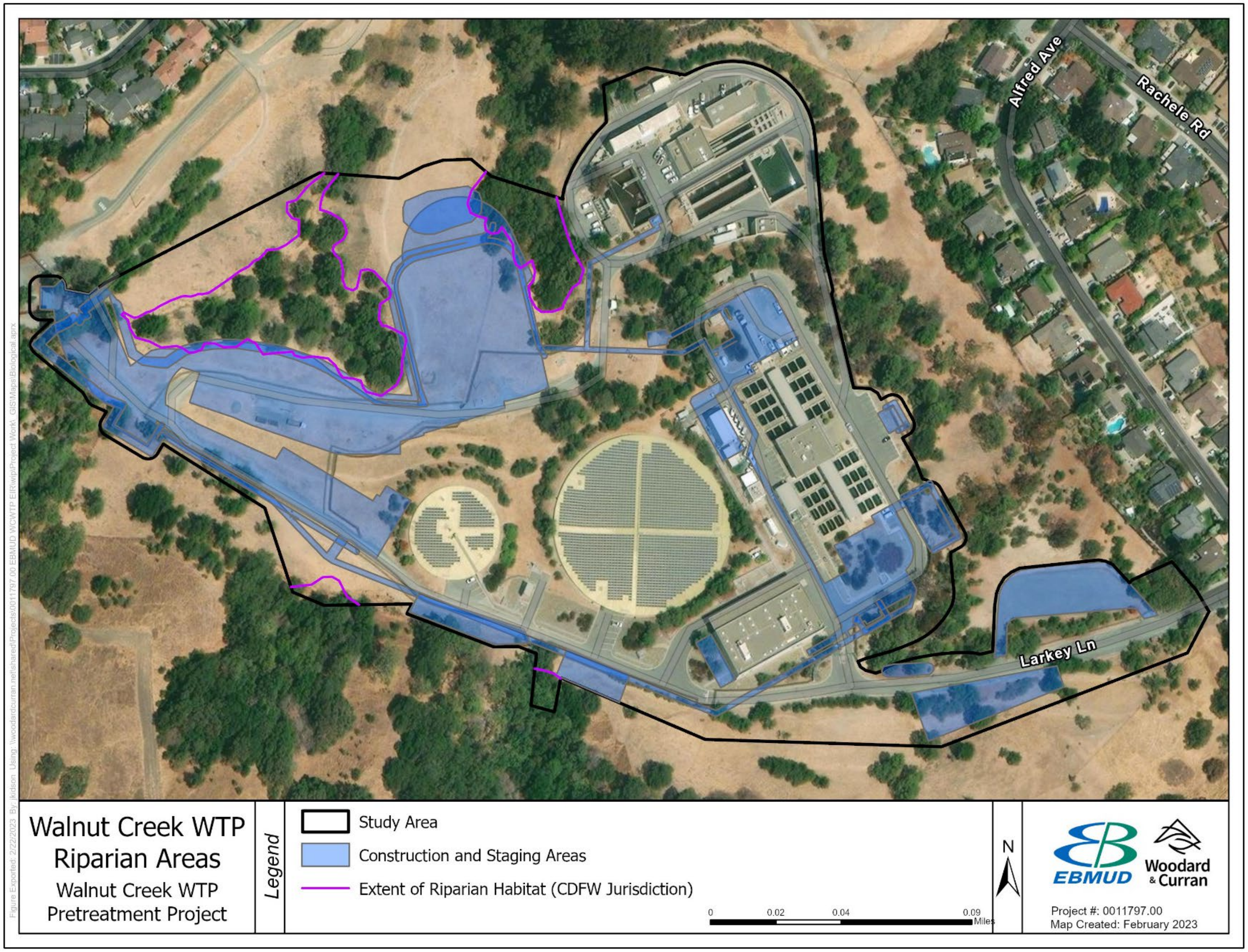
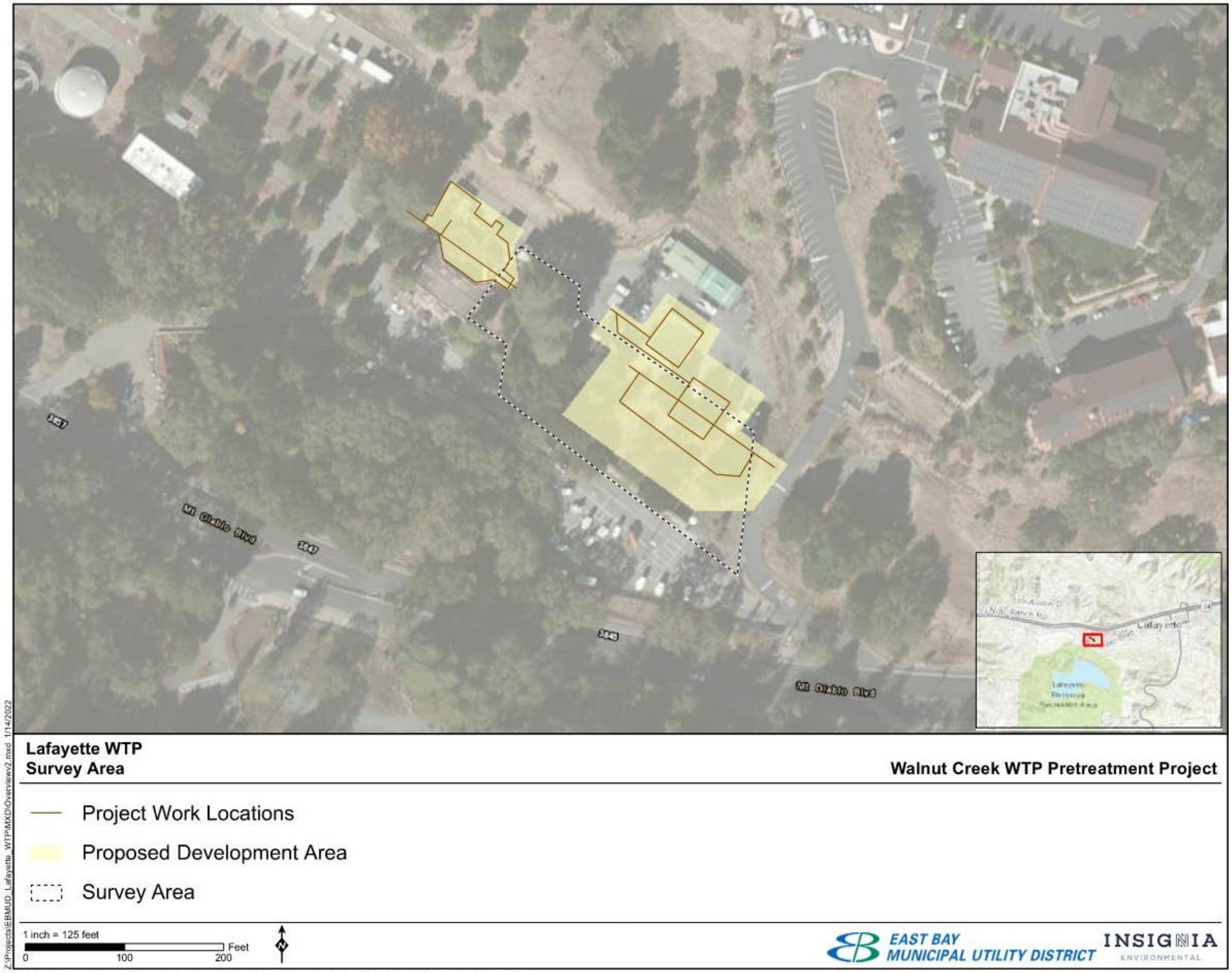


Figure 3.3-2: Lafayette WTP Study Area



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Sensitive Biological Community: Communities that are of limited distribution within the state, county, or region and are typically vulnerable to the environmental effects of projects (CDFW, 2018a). Wetlands, lakes, streams, and riparian areas typically qualify as sensitive biological communities because of their rarity and importance to a variety of common and special-status plants and wildlife. Special-status biological communities and habitats are protected under federal regulations such as the Clean Water Act (CWA), state regulations such as the Porter-Cologne Act, the CDFW Streambed Alteration Program, CEQA, and local ordinances or policies (City or County Tree Ordinances, Special Habitat Management Areas, and General Plan Elements).

The list of high-priority vegetation types is maintained by the California Vegetation Classification and Mapping program. Natural communities with state ranks S1–S3 are considered sensitive natural communities under CEQA.

Protected Tree: Chapter 8 of Title 3 of the Walnut Creek Municipal Code provides protection for all trees and requires a permit for the removal, and additional protection measures for any tree that is highly protected. A "tree" is defined in Walnut Creek Municipal Code section 3-8.02 as the following:

1. Tree means any live woody plant having a single perennial stem of 28 inches or more in circumference or multi-stemmed perennial plant having an aggregate circumference of 40 inches or more measured 4.5 feet above the natural grade. A multi-stemmed plant having one stem of 28 inches or more in circumference shall also be considered to meet this definition. Tree shall also include a tree of any size which is part of a grove.

The Walnut Creek Municipal Code also provides for further protection and preservation measures for highly protected trees, which are defined as the following:

2. Highly Protected Tree shall mean any tree which is any of the following type of tree: valley oak (*Quercus lobata*), blue oak (*Quercus douglasii*), coast live oak (*Quercus agrifolia*), California black oak (*Quercus kelloggii*), canyon live oak (*Quercus chrysolepis*), interior live oak (*Quercus wislizeni var. wislizeni*), madrone (*Arbutus menziesii*), California buckeye (*Aesculus californica*), California black walnut (*Juglans hindsii*), and grey pine (*Pinus sabiniana*).

The City of Lafayette encourages the protection of certain trees. The Lafayette Municipal Code provides protection of certain trees and requires a permit for the removal of any protected tree. Protected trees are defined within Chapter 6-17 of the Lafayette Municipal Code, and the trees within the Project area fall under the following protected tree definition:

1. The tree is located on developed public or private property and has a trunk diameter of 12 inches or more, and is one of the following species: coast live oak (*Quercus agrifolia*), canyon oak (*Quercus chrysolepis*), blue oak (*Quercus douglasii*), white oak (*Quercus garryana*), black oak (*Quercus kelloggii*), valley oak (*Quercus lobata*), interior live oak (*Quercus wislizeni*), California bay laurel (*Umbellularia californica*), California buckeye (*Aesculus californica*), and madrone (*Arbutus menziesii*).

Jurisdictional Waters: Jurisdictional waters are classified as either "Waters of the U.S." or "Waters of the State:"

> ***Waters of the United States.*** The U.S. Army Corps of Engineers (USACE) regulates "Waters of the U.S." under Section 404 of the CWA. "Waters of the U.S." are defined

broadly as waters susceptible to use in commerce, including interstate waters and wetlands, all other waters (intrastate water bodies, including wetlands), and their tributaries (33 CFR 328.3). Potential wetland areas are identified by the presence of: (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. Areas that are inundated for sufficient duration and depth to exclude the growth of hydrophytic vegetation are subject to Section 404 jurisdiction as "other waters" and are often characterized by an ordinary high-water mark (generally naturally occurring lakes, rivers, and streams). The placement of fill material into Waters of the U.S. (including wetlands) generally requires an Individual or Nationwide Permit from the USACE under Section 404 of the CWA, and a water quality certification from the State Water Resources Control Board (SWRCB) under Section 401 of the CWA.

Waters of the State. The term "Waters of the State" is defined by the Porter-Cologne Water Quality Control Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." The Regional Water Quality Control Board (RWQCB) protects all waters in its regulatory scope, but has special responsibility for wetlands, riparian areas, and headwaters, which have high resource value, are vulnerable to filling, and are not systematically protected by other programs. RWQCB jurisdiction includes "isolated" wetlands and waters that may not be regulated by the USACE under Section 404. Waters of the State are regulated by the Porter-Cologne Water Quality Control Act. If a project does not require a federal permit but does involve dredge or fill activities that may result in a discharge to Waters of the State, the RWQCB has the option to regulate the dredge and fill activities under its state authority in the form of Waste Discharge Requirements.

Wildlife Movement Corridor: Wildlife movement corridors are defined as areas that connect suitable wildlife habitat areas in a region otherwise fragmented by rugged terrain, changes in vegetation, or human disturbance. Natural features such as canyon drainages, ridgelines, or areas with vegetation cover provide corridors for wildlife travel. Wildlife movement corridors are important because they provide access to mates, food, and water; allow the dispersal of individuals away from high population density areas; and facilitate the exchange of genetic traits between populations (Beier and Loe, 1992). Wildlife movement corridors are considered sensitive by resource and conservation agencies. In general, any activities in or adjacent to defined wildlife movement corridors (e.g., riparian corridors, areas that are contiguous with adjacent open space areas) that could potentially disturb, restrict movement or activity, disrupt natal areas, or facilitate increased predation of wildlife species would be considered a significant adverse impact.

3.3.2 Data Collection

Literature and Database Review

A literature review was conducted to investigate the potential presence of special-status species and critical habitat within the Walnut Creek and Lafayette Water Treatment Plants (WTPs) Project sites (study areas). A regional list of special-status wildlife and flora species was developed by querying the following databases, and each species was then evaluated to determine its potential to occur within the Walnut Creek and Lafayette WTPs study areas:

- The species list from the Sacramento Office of the USFWS generated for the Project using their Information for Planning and Consultation (IPaC) System (USFWS, 2022a).
- The National Oceanic and Atmospheric Administration (NOAA) West Coast Region Google Earth Species List Generator (NOAA, 2022).
- The California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants of California database was searched for the following USGS 7.5-minute topographic quadrangles: Walnut Creek (3712281), Briones Valley (3712282), Oakland East (3712272), and Las Trampas Ridge (3712271) (CNPS, 2022).
- The California Natural Diversity Database (CNDDB) was queried for all occurrence records and critical habitat within two miles of the Project (CDFW, 2022).

Study Area Surveys

Studies were conducted of the Walnut Creek and Lafayette WTPs study areas to evaluate the potential for special-status plant and animal species to occur. The studies included vegetation typing, tree surveys, rare plant surveys, wildlife habitat assessments, and an assessment of wetlands and other waters of the U.S.

The following summary reports from the surveys of the Walnut Creek and Lafayette WTPs study areas have been prepared for the Project and have been reviewed and referenced in this Section:

- *Arborist Condition Report for EBMUD Walnut Creek Water Treatment Plant Pretreatment Project*. Walnut Creek, CA. Tree surveys conducted on May 18, 2021 (Insignia Environmental, 2021).
- *Arborist Condition Report for EBMUD Lafayette Water Treatment Plant Weirs, Walnut Creek Water Treatment Plant Pretreatment Project*. Lafayette, CA. Tree surveys conducted on September 7, 2021 (Insignia Environmental, 2022).
- *Preliminary Delineation of Aquatic Resources, for the Walnut Creek Water Treatment Plant Pretreatment Project*. Including field investigation on March 8, 2022, of the hydrological and biological conditions within the Walnut Creek WTP study area (EBMUD, 2022b).
- *Rare plant surveys, vegetation typing and wildlife habitat assessments*. Field surveys for rare plants were conducted on March 11 and June 14, 2022, during the blooming periods for special-status species with the potential to occur in the region. Vegetation typing and wildlife habitat assessments were conducted on March 11, 2022. Results of the rare plant survey, vegetation typing, and wildlife habitat assessments are summarized in this EIR section (not in a separate study).
- *CDFW jurisdictional assessment*. A survey to define CDFW jurisdiction over riparian areas under Sections 1600-1616 of the California Fish and Game Code was conducted at the Walnut Creek WTP on September 2, 2022.

3.3.3 Environmental Setting

Regional Setting

The Project is located within the cities of Walnut Creek and Lafayette in western Contra Costa County, California. The geography of the region is characterized by a sequence of inland hills, ridges, and valleys that descend in elevation eastward to a broad north/south trending valley from

Pleasant Hill to San Ramon where the majority of EBMUD's East-of-Hills customers are located.

The cities of Walnut Creek and Lafayette are separated from the San Francisco Bay by the Oakland/Berkeley Hills, a sub-range of the Pacific Coast Ranges. The Oakland/Berkeley Hills block cool marine air and coastal fog from permeating the East Bay, and thus the climate in Walnut Creek and Lafayette is typically warmer and drier than areas directly surrounding the bay. The average daily temperatures for Walnut Creek and Lafayette are 69.3 and 64.9 degrees Fahrenheit, respectively (IDcide, 2022). The region typically receives approximately 24 inches of rain annually.

The Walnut Creek WTP study area is within the Grayson Creek Watershed, and the Lafayette WTP study area is within the Las Trampas Watershed. Both are sub-watersheds of the Walnut Creek Watershed (Contra Costa County Community Development Department, 2003).

Residential development and an open space recreation area surrounds the Walnut Creek study area. The Lafayette WTP study area is surrounded by transportation corridors and the Temple Isaiah.

Project Study Area Setting

The Walnut Creek WTP study area includes the proposed facilities, proposed staging and parking areas, and proposed fill areas at the Walnut Creek WTP. The Walnut Creek WTP study area was extended to include Putnam Creek, one of the two intermittent creeks mapped during the field survey, to account for proposed fill activities that may impact the area near Putnam Creek. The Walnut Creek WTP study area is bordered to the east by Alfred Avenue, the Briones to Mt. Diablo Regional Trail to the north, and Acalanes Ridge Open Space to the south and west.

The Lafayette WTP study area includes the proposed facilities and associated areas for staging and parking at the Lafayette WTP. The Lafayette WTP study area is composed primarily of facility buildings, paved roads, weir structures, and is bordered by Mt. Diablo Boulevard to the south and west, Temple Isaiah to the east, and State Route 24 to the north. Civic buildings such as the Contra Costa Jewish Day School and Temple Isaiah are southeast and east of the Lafayette WTP study area.

Past and ongoing development and other human activities have altered natural vegetative patterns or otherwise limited large expanses of most natural communities within the Walnut Creek and Lafayette WTPs study area. Vegetation communities and habitat types within the Walnut Creek and Lafayette WTPs study area are described below.

Vegetation Communities and Wildlife Habitats

The Walnut Creek and Lafayette WTPs study area supports several vegetation communities and habitats. Vegetation communities were identified during on-site plant and wetland surveys and through aerial imagery. Classifications presented are based on field observations and natural communities listed in the CNDDB (CDFW, 2022).

Vegetation communities at the Walnut Creek WTP study area include primarily non-native grassland, non-native grassland/ruderal, mixed oak/Aleppo pine (*Pinus halepensis*), mixed oak woodland, riparian woodland, and developed areas with ornamental landscaping. In the Lafayette WTP study area, vegetation communities include non-native grasslands, oak trees (*Quercus* spp.), and developed areas with ornamental landscaping.

Non-native Grassland

A large portion of the Walnut Creek WTP study area is non-native grassland. The non-native grassland is herbaceous land cover type that is dominated by the native Arroyo lupin (*Lupinus succulentus*) and non-native species, including Italian ryegrass (*Festuca perennis*), slender oats (*Avena barbata*), coastal heron's bill (*Erodium cicutarium*), Rose clover (*Trifolium hirtum*), and black mustard (*Brassica nigra*). Other native species observed include California poppy (*Eschscholzia californica*) and purple needle grass (*Stipa pulchra*).

Non-native grassland is present in the Lafayette WTP study area at proposed facilities areas, along the fence line where part of the proposed new pipeline is located, and in all proposed staging areas. Non-native grassland is present around the Lafayette WTP study area outside of proposed facility and staging areas.

Many wildlife species use grasslands for foraging, but some require special habitat features such as cliffs, caves, ponds, or habitats with woody plants within or nearby the grassland for breeding, resting, and cover.

Other wildlife species may avoid small patches of grassland, preferring larger areas of unbroken grassland. Characteristic reptiles that breed in grassland habitats include the western fence lizard (*Sceloporus occidentalis*), common garter snake (*Thamnophis sirtalis*), and western rattlesnake (*Crotalus oregonus*). Mammals typically found in this habitat include the black-tailed jackrabbit (*Lepus californicus*), California ground squirrel (*Otospermophilus beechyi*), Botta's pocket gopher (*Thomomys bottae*), western harvest mouse (*Reithrodontomys megalotis*), California vole (*Microtus californicus*), and coyote (*Canis latrans*). In sufficiently large swathes, this grassland habitat also provides important foraging habitat for raptors (CDFW, 2008).

Non-native Grassland/Ruderal

Ruderal non-native grassland within the Walnut Creek and Lafyette WTPs study areas is similar to the non-native grassland described above but lacks Arroyo lupine and instead contains a higher concentration of non-native species, including milk thistle (*Silybum marianum*), curly dock (*Rumex crispus*), and California burclover (*Medicago polymorpha*).

Mixed Oak/Aleppo Pine

Portions of the Walnut Creek WTP study area are dominated by Aleppo pine mixed with coast live oak and valley oak. During surveys, the understory of the Aleppo pine mixed with coast live oak and valley oak was dominated by non-native grasses, including Italian ryegrass and slender oats, with Arroyo lupine and common fiddleneck (*Amsinckia intermedia*). Existing gravel roads are also present within this area dominated by mixed oak and Aleppo pine.

Mixed Oak Woodland

Both the Walnut Creek and Lafayette WTPs study areas are surrounded by mixed oak woodland dominated by coast live oak and valley oak. Limited oak woodland is also present within the Walnut Creek WTP study area. Coast live oak is a drought-resistant evergreen tree that may grow to approximately 80 feet tall. Valley oak are quick growing, deep rooted trees that grow to 75 feet tall. The understory structure can be limited to herbaceous cover or can include complex herb and shrub layers (CDFW, 2008).

The dense understory and thick layer of leaf litter common to oak woodlands provide habitat for many common species of amphibian, reptile, and small mammal. At least 60 species of mammals may use oaks in some way. As many as 110 species of birds have been observed during the breeding season in California habitats where oaks form a significant part of the canopy or subcanopy (CDFW, 2008). Quail (*Callipepla californica*), turkeys (*Meleagris gallopavo*), and deer (*Odocoileus hemionus*) may be so dependent on acorns in fall and early winter that a poor acorn year can result in significant declines in their populations (CDFW, 2008).

The mixed oak woodland within the Walnut Creek and Lafyette WTPs study areas provides mature trees that could afford nesting habitat for passerine and raptor species alike. In addition, bird species are expected to forage and travel through woodland habitat within the Walnut Creek and Lafyette WTPs study areas.

Developed

Developed areas include structures, paved surfaces, and landscaping. Developed areas have been impacted by grading, mowing, filling, and industrial use and include ruderal vegetation, which is composed primarily of non-native plants. Developed habitats are capable of supporting a number of bird species associated with urban environments, and which are known to be tolerant of disturbance by human activities such as bushtits (*Psaltriparus minimus*), oak titmouse (*Baeolophus inornatus*), chestnut-backed chickadee (*Poecile rufescens*), and California quail. Common mammals are black-tailed deer and black-tailed jackrabbit. In general, special-status species are not expected to occur in developed areas.

Riparian Woodland

The Walnut Creek WTP study area included in the Arborist Report (Insignia Environmental, 2021) includes riparian trees at the slopes of the ephemeral and intermittent creeks, as shown in . Tree species observed include California bay laurel, California buckeye, valley oak, and coast live oak. The Lafayette WTP study area included in the Arborist Report (**Figure 3.3-2**) (Insignia Environmental, 2022) does not include a riparian area; Lafayette Creek and an intermittent stream cross the Lafayette WTP site but both are outside of the Lafayette WTP study area.

Riparian habitats provide food, water, migration and dispersal corridors, escape, nesting, and thermal cover for an abundance of wildlife. At least 50 amphibians and reptiles occur in lowland riparian systems throughout California. Many are permanent residents, while others are transient or temporary visitors. Hundreds of bird and mammal species may also use riparian communities, which are particularly attractive due to the presence of nearby water (CDFW, 2008). Raptor and passerine species may use riparian trees in the Walnut Creek and Lafayette WTPs study areas for foraging and nesting.

Sensitive Natural Communities

A sensitive natural community is a biological community that is regionally rare, provides important habitat opportunities for wildlife, is structurally complex, or is in other ways of special concern to local, state, or federal agencies. Most sensitive natural communities are given special consideration because they perform important ecological functions, such as maintaining water quality and providing essential habitat for plants and wildlife. Some plant communities support a unique or diverse assemblage of plant species and therefore are considered sensitive from a botanical standpoint. The CNDDB reports no sensitive natural community occurrences within the Walnut Creek and Lafayette WTPS study areas (CDFW, 2022).

Wetlands and Other Jurisdictional Waters

Walnut Creek

The Walnut Creek WTP study area lies within the Grayson Creek Watershed, one of the five major sub-watersheds of the Walnut Creek Watershed (Contra Costa County Community Development Department, 2003). Within the Walnut Creek WTP study area, the identified water features include the intermittent Putnam Creek, an unnamed intermittent creek, and an ephemeral drainage (**Figure 3.3-3**) (EBMUD, 2022b). The aquatic habitat in the Walnut Creek WTP study area is limited to these two intermittent creeks and an ephemeral drainage. An assessment of how the Walnut Creek WTP study area relates to the hydrology of the area is presented in the *Preliminary Delineation of Aquatic Resources for the Walnut Creek Water Treatment Plant Pretreatment Project Report* (Kleinfelder, 2022b) (**Appendix G**). The results of this report as they relate to wetlands and waters are summarized below.

Two intermittent creeks were identified and mapped within the Walnut Creek WTP study area: Putnam Creek and an unnamed intermittent creek. No wetlands were identified within the Walnut Creek WTP study area.

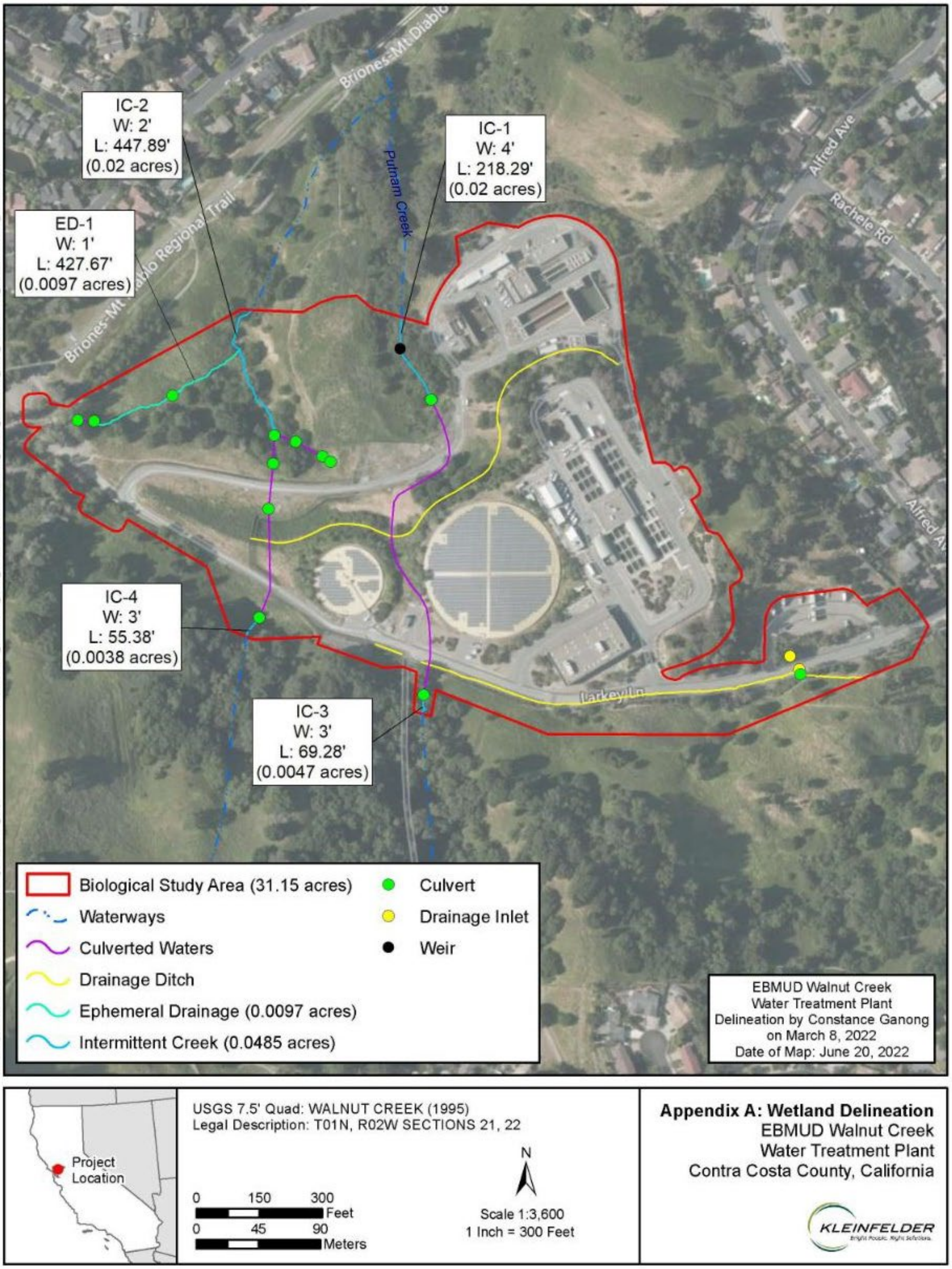
Putnam Creek flows north within a ravine adjacent to the Larkey Reservoir access road and then through a culvert that crosses the Walnut Creek WTP. Putnam Creek had a low rate of flow at the time of the field survey. Putnam Creek ranges from two feet to eight feet wide within the Walnut Creek WTP study area, and winds through areas of dense understory and overstory. No wetlands were identified within Putnam Creek at the Walnut Creek WTP study area.

The unnamed intermittent creek identified within the Walnut Creek WTP study area also flows north and through a culvert under the Walnut Creek WTP. The unnamed intermittent creek ranges from two feet to three feet wide. The observed flow rate was low at the time of the survey. The creek also flows through non-native grasslands with overstory.

Both creeks flow north and converge approximately 615 feet north of the Walnut Creek WTP study area. After the two creeks merge, Putnam Creek is presumed to flow to Murderer's Creek, then to Grayson Creek that flows to Pacheco Slough, which connects to Suisun Bay. The National Wetlands Inventory Mapper classifies these creek habitats as intermittent riverine streambeds, which are temporary flooded (Kleinfelder, 2022b).

The identified ephemeral drainage within the Walnut Creek WTP study area flows between three small culverts at the northwest edge of the study area until it merges with the identified intermittent creek at the bottom of the hillslope. The identified ephemeral drainage is approximately one foot wide and flows northeast through non-native grassland with associated overstory.

Figure 3.3-3: Wetland Delineation Results for Walnut Creek WTP Study Area



Lafayette

A desktop aquatic resources assessment was conducted for the Lafayette WTP study area to identify potential jurisdictional waters and wetlands (Kleinfelder, 2022). Results of the assessment are summarized below.

The Lafayette WTP study area is within the Las Trampas Watershed, one of the five major watersheds of the Walnut Creek Watershed. Approximately 0.31 mile south of the Lafayette WTP study area is Lafayette Reservoir. Lafayette Creek is approximately 100 feet south of the study area, flows eastward under Mt. Diablo Boulevard, and enters the Lafayette WTP outside of the study area. Lafayette Creek then flows to Las Trampas Creek to Walnut Creek, which flows north to Suisun Bay.

No potential jurisdictional non-wetland waters or wetlands were identified in the Lafayette WTP study area.

Wildlife Corridors

Within the Walnut Creek WTP study area, the open channel portions of Putnam Creek, the unnamed intermittent creek, and the ephemeral drainage provide disturbed aquatic habitat for wildlife species. These waters have been exposed to high degrees of human disturbance, and the lengths of the creeks and drainage within the study area are relatively small compared to the larger watershed. The remaining portions of the Walnut Creek WTP study area include regularly maintained non-native grassland, limited woodland near the creeks, and developed habitat consisting of paved road and landscaped vegetation. The Walnut Creek WTP study area is surrounded by residential development to the east, north, and south sides, and a recreation area on the west side. The Walnut Creek WTP study area would not be considered a wildlife corridor because it is surrounded on three sides by development and thus does not provide a connection between natural habitat areas. However, tree canopies within the study area could provide habitat for nesting birds, and grasslands provide habitat for small mammals such as ground squirrels.

Habitat within the Lafayette WTP study area consists mainly of developed area, including paved roads and buildings. Mt. Diablo Boulevard and EBMUD access roads separate Lafayette Creek from the Lafayette WTP study area. Wildlife within the Lafayette WTP study area would be limited and the study area would not be considered a wildlife corridor because the site is surrounded by roads and developed areas and thus does not provide a connection between natural habitat areas.

Special-Status Species

A total of 51 special-status and rare plant species and 40 special-status wildlife species were initially evaluated based on habitat requirements, species range, potential barriers to dispersal from identified habitats, and recorded occurrences. Following desktop assessment and surveys, 40 of the listed plant species and 21 of the listed wildlife species were removed from consideration because they were not expected to occur within the Walnut Creek and Lafayette WTPs study areas due to a lack of suitable habitat or presence of barriers to dispersal. The special-status species with potential to occur in the Walnut Creek and Lafayette WTPs study areas are shown in **Table 3.3-1** and **Table 3.3-2**.

As explained in **Table 3.3-1,** of the special-status plants presented, 11 species listed by the CNPS have a low potential to occur in the grassland and woodland habitats within the study areas and are considered in the impact analysis. No federally or state listed species are expected to occur within the Walnut Creek and Lafayette WTPs study areas.

As explained in **Table 3.3-2,** of the special-status plants wildlife species presented, 18 species have a low or moderate potential to occur and are considered in the impact analysis. Except for nesting birds and roosting bats, no special-status species have the potential to be present within Walnut Creek and Lafayette WTPs (where active construction would occur).

Species considered include birds designated as a Bird of Conservation Concern, state species of special concern, or fully protected species under the CFGC; and bats listed as a state species of special concern or included in CDFW's Special Animals List.

Rare and Special-Status Plants

Neither the Walnut Creek nor Lafayette WTPs study areas are within any USFWS critical habitat for plant species (USFWS, 2022). The habitats present within the Walnut Creek and Lafayette WTPs study areas are disturbed and urban habitats dominated by planted landscaping and other non-native species. The Walnut Creek WTP study area features grasslands with limited suitability for special-status plants. The Lafayette WTP study area is predominantly developed, featuring paved surfaces and buildings; there is a low probability for the habitat to support special-status plants.

Rare plant surveys (Kleinfelder, 2022) and field reconnaissance in preparation of the Project's Delineation of Aquatic Resources (Kleinfelder, 2022) for the Walnut Creek WTP study area. Arborist Reports (Insignia Environmental, 2021 and 2022) were conducted for the Walnut Creek and Lafayette WTPs study areas respectively. Rare plant surveys were conducted on March 3, June 14, and October 4, 2022—the blooming periods for special-status species with the potential to occur in the region. Surveys were conducted in accordance with the guidance provided in the Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities (CDFW, 2018). Rare plant surveys were not conducted at the Lafayette WTP study area due to the limited work proposed at the site and the predominantly developed habitat.

No special-status plant species were observed during the rare plant surveys or field reconnaissance at the Walnut Creek WTP study area. Neither the Walnut Creek nor Lafayette WTPs study areas feature chaparral habitat, wetlands, vernal pools, alkaline soils, coastal scrub, or coniferous forest that are suitable for special-status plant species that would occur in the region. Of the habitat present, the primarily non-native grassland within the Walnut Creek WTP study area could provide marginally suitable habitat for special-status plant species. The arborist survey at the Lafayette WTP study area found one Northern California black walnut (CNPS Rare Plant Rank 4.2) just outside the construction footprint (Insignia, 2022).

EBMUD deploys goats at the Walnut Creek and Lafayette WTPs sites for weed control and fire safety. The majority of vegetation (annual non-native grassland) is grazed by goats through the summer season, further limiting suitable habitat on site for special-status plants. Plants identified on site during surveys included weeds listed as "high" by the California Invasive Plant Council (Cal-IPC), which indicates species with species that have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure, and that have moderate to high rates of dispersal and establishment (Cal-IPC, 2022).

Special-Status Wildlife

The woodland vegetation in both the Walnut Creek and Lafayette WTPs study areas provides suitable nesting and foraging habitat for nesting birds. The tree cover and buildings in both study areas could also provide suitable habitat for roosting bats that have a high tolerance to human activity.

Many of the trees within the Walnut Creek WTP study area are mature enough to afford nesting habitat for passerine and raptor species protected by the MBTA and CFGC Section 3503. In particular, the trees by Putnam Creek have dense foliage likely to harbor nesting passerine and raptor species. During field reconnaissance of the area in March 2022, numerous raptor species including red-tailed hawks, Cooper's hawks, turkey vultures, and possible great horned owl were observed and appear to use the habitat for foraging.

Five bat species listed as California state species of concern or under CDFW's special animals list (fringed myotis, long-eared myotis, pallid bat, western small footed myotis, and Townsend's big-eared bat) have a low to moderate potential to occur within the Walnut Creek and Lafayette WTPs study areas. These species typically use trees and buildings for roosting, and the dense foliage and crevices in mature trees, as well as buildings in the study areas provide potential roosting habitat for these species. Roosting bat species are protected by Section 4150 of the CFGC.

San Francisco dusky-footed woodrat, a California state species of special concern, may occur in the limited oak woodland and riparian habitat in the Walnut Creek WTP study area.

Due to the highly disturbed nature of the Walnut Creek and Lafayette WTPs study areas, their location within an urbanized landscape, lack of suitable upland or aquatic habitat on-site, lack of recent occurrences, and lack of connectivity to natural areas, no other special-status wildlife species are expected to occur within the study areas. No critical habitat for federally listed species occurs within the Walnut Creek and Lafayette WTPs study areas.

Table 3.3-1: Special-Status Plant Species With Potential to Occur within the Walnut Creek and Lafayette WTPs Study Areas

Scientific Name Common Name	Status (Federal/ State) & RPR	Flowering Period	Habitat Requirements[1]	Potential to Occur at the Project Site[2]
Amsinckia lunaris / Bent-Flowered Fiddleneck	-- / -- 1B.2	Mar-Jun	Cismontane woodland, Coastal bluff scrub, Valley and foothill grassland. 10-1640 feet.	**Low.** Limited suitable habitat present. Limited woodlands and grasslands in study areas. Species not observed during 2022 plant surveys.
Androsace elongata ssp. *Acuta* / California Androsace	-- / -- 4.2	Mar-Jun	Chaparral, Cismontane woodland, Coastal scrub, Meadows and seeps, Pinyon and juniper woodland, Valley and foothill grassland. 490-4280 feet.	**Low.** Limited suitable habitat present. Limited woodlands and grasslands in study areas. Species not observed during 2022 plant surveys.

Scientific Name Common Name	Status (Federal/ State) & RPR	Flowering Period	Habitat Requirements[1]	Potential to Occur at the Project Site[2]
Anomobryum julaceum / Slender Silver Moss	-- / -- 1B.2	-	Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest. 330-3280 feet.	**Not Expected.** No suitable upland or coniferous forests present in study areas.
Arctostaphylos pallida / Pallid Manzanita	FT / SE 1B.1	Dec-Mar	Broadleafed upland forest, Chaparral, Cismontane woodland, Closed-cone coniferous forest, Coastal scrub. 605-1525 feet	**Not Expected.** Limited woodlands in study areas. No suitable upland or coniferous forests present. No manzanita are present in the study areas, and species not observed during 2022 plant surveys.
Astragalus tener var. *tener /* Alkali Milk-Vetch	-- / -- 1B.2	Mar-Jun	Playas, Valley and foothill grassland, Vernal pools. Alkaline soils. 5-195 feet.	**Not Expected.** No suitable habitat present. No vernal pools or alkaline soils in study areas. Species not observed during 2022 plant surveys.
Blepharizonia plumosa / Big Tarplant	-- / -- 1B.1	Jul-Oct	Clay soils. Foothill Woodland, Chaparral, Valley Grassland. 100-1655 feet.	**Not Expected.** Limited disturbed grasslands and woodlands in study areas. Species not observed during 2022 plant surveys. CNDDB occurrences are historic, from 1935 and 1937.
Calochortus pulchellus / Mt. Diablo Fairy-Lantern	-- / -- 1B.2	Apr-Jun	Foothill Woodland, Chaparral, Valley Grassland. 100-2755 feet.	**Low.** Marginal suitable habitat present. Limited woodlands in study areas. Species not observed during 2022 plant surveys.
Calochortus umbellatus / Oakland Star-Tulip	-- / -- 4.2	Mar-May	Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest, Valley and foothill grassland. Serpentine soils. 330-2295 feet.	**Not Expected.** No suitable habitat present. Species not observed during 2022 plant surveys.
Castilleja ambigua var. *ambigua /* Johnny-Nip	-- / -- 4.2	Mar-Aug	Coastal bluff scrub, Coastal prairie, Coastal scrub, Marshes and swamps, Valley and foothill grassland, Vernal pools. 0-1425 feet.	**Not Expected.** No suitable habitat present. No marshes, swamps or vernal pools present in study areas. Species not observed during 2022 plant surveys.

Scientific Name Common Name	Status (Federal/ State) & RPR	Flowering Period	Habitat Requirements[1]	Potential to Occur at the Project Site[2]
Centromadia parryi ssp. *congdonii* / Congdon's Tarplant	-- / -- 1B.1	May-Oct	Wetlands and Valley Grasslands. 0-755 feet.	**Low.** Marginal suitable habitat present. Limited grasslands in study areas. Species not observed during 2022 plant surveys.
Chloropyron maritimum ssp. *palustre* / Point Reyes Salty Bird's-Beak	-- / -- 1B.2	Jun-Oct	Marshes and swamps. 0-35 feet.	**Not Expected.** No suitable marshes or swamps in study areas.
Chorizanthe robusta var. *robusta* / Robust Spineflower	FE / -- 1B.1	Apr-Sep	Chaparral, Cismontane woodland, Coastal dunes, Coastal scrub. Gravelly and Sandy soils. 10-985 feet.	**Not Expected.** No gravelly or sandy soils present in study areas, and limited suitable woodland habitat present in study area. Not known to occur in Contra Costa County. Species not observed during 2022 plant surveys.
Cicuta 3.3-16aculate var. *bolanderi* / Bolander's Water-Hemlock	-- / -- 2B.1	Jul-Sep	Marshes and swamps. 0-655 feet.	**Not Expected.** No suitable marshes or swamps in study areas.
Cirsium andrewsii / Franciscan Thistle	-- / -- 1B.2	Mar-Jul	Broadleafed upland forest, Coastal bluff scrub, Coastal prairie, Coastal scrub. Mesic and Serpentinite soils. 0-490 feet.	**Not Expected.** No suitable upland forest or coastal scrub in study areas.
Clarkia concinna ssp. *automixa* / Santa Clara Red Ribbons	-- / -- 4.3	May-Jun	Chaparral, Cismontane woodland. 295-4920 feet.	**Not Expected.** Limited woodlands in study areas. Not known to occur in Contra Costa County. Species not observed during 2022 plant surveys.
Clarkia franciscana / Presidio Clarkia	FE / SE 1B.1	May-Jul	Coastal scrub, Valley and foothill grassland (serpentinite). 80-1100 feet.	**Not Expected.** Limited grasslands in study areas. No serpentinite soils in study areas. Not known to occur in Contra Costa County. Species not observed during 2022 plant surveys.

Scientific Name Common Name	Status (Federal/ State) & RPR	Flowering Period	Habitat Requirements[1]	Potential to Occur at the Project Site[2]
Dirca occidentalis / Western Leatherwood	-- / -- 1B.2	Jan-Mar	Broadleafed upland forest, Chaparral, Cismontane woodland, Closed-cone coniferous forest, North Coast coniferous forest, Riparian forest, Riparian woodland. Mesic soils. 80-1395 feet.	**Not Expected.** Limited woodlands in study areas. No suitable upland or coniferous forest present. Species not observed during 2022 plant surveys.
Eriogonum luteolum var. *caninum /* Tiburon Buckwheat	-- / -- 1B.2	May-Sep	Chaparral, Cismontane woodland, Coastal prairie, Valley and foothill grassland. Gravelly, Sandy, and Serpentinite. 0-2295 feet.	**Low.** Limited suitable habitat present. Limited woodlands, and grasslands in study areas. Species not observed during 2022 plant surveys.
Eryngium jepsonii / Jepson's Coyote-Thistle	-- / -- 1B.2	Apr-Aug	Valley and foothill grassland, Vernal pools. Clay substrates. 10-985 feet.	**Not Expected.** No suitable habitat present. No wetlands.
Erythranthe laciniata / Cut-Leaved Monkeyflower	-- / -- 4.3	Apr-Jul	Chaparral, Lower montane coniferous forest, Upper montane coniferous forest. Granitic and Mesic soils. 1610-8695 feet.	**Not Expected.** No suitable coniferous forests in study areas.
Extriplex joaquinana / San Joaquin Spearscale	-- / -- 1B.2	Apr-Oct	Chenopod scrub, Meadows and seeps, Playas, Valley and foothill grassland. Alkaline soils. 5-2740 feet.	**Not expected.** No suitable scrub or grassland habitat present in study areas.
Fissidens pauperculus / Minute Pocket Moss	-- / -- 1B.2	-	North Coast coniferous forest. 35-3360 feet.	**Not Expected.** No suitable coniferous forests in study areas.
Fritillaria agrestis / Stinkbells	-- / -- 4.2	Mar-Jun	Chaparral, Cismontane woodland, Pinyon and juniper woodland, Valley and foothill grassland. Clay and Serpentinite soils (sometimes). 35-5100 feet.	**Low.** Limited suitable habitat present. Limited grasslands in study areas. Species not observed during 2022 plant surveys.
Fritillaria liliacea / Fragrant Fritillary	-- / -- 1B.2	Feb-Apr	Cismontane woodland, Coastal prairie, Coastal scrub, Valley and foothill grassland. Serpentinite soils (often). 10-1345 feet.	**Not expected.** No suitable habitat in study areas.

Scientific Name **Common Name**	**Status (Federal/ State) & RPR**	**Flowering Period**	**Habitat Requirements[1]**	**Potential to Occur at the Project Site[2]**
Gilia millefoliata / Dark-Eyed Gilia	-- / -- 1B.2	Apr-Jul	Coastal dunes. 5-100 feet.	**Not Expected.** No suitable coastal dunes in study areas.
Helianthella castanea / Diablo Helianthella	-- / -- 1B.2	Mar-Jun	Northern Coastal Scrub, Foothill Woodland, Chaparral, Valley Grassland. 195-4265 feet.	**Low.** Marginal suitable habitat present. Limited woodlands, and no coastal scrub in vicinity of study areas. Species not observed during 2022 plant surveys.
Hesperevax caulescens / Hogwallow Starfish	-- / -- 4.2	Mar-Jun	Valley and foothill grassland, Vernal pools. Alkaline soils. 0-1655 soils.	**Not expected.** No vernal pools in vicinity of study areas.
Hoita strobilina / Loma Prieta Hoita	-- / -- 1B.1	May-Jul	Chaparral, Cismontane woodland, Riparian woodland. Mesic and Serpentinite soils (usually). 100-2820 feet.	**Not Expected.** Limited woodlands in vicinity of study areas. Serpentine soils not present in study areas. Species not observed during 2022 plant surveys.
Holocarpha macradenia / Santa Cruz Tarplant	FT / SE 1B.1	Jun-Oct	Coastal prairie, Coastal scrub, Valley and foothill grassland. Clay and Sandy soils. 35-720 feet.	**Not Expected.** Limited grasslands, and no coastal prairie or coastal scrub in vicinity of study areas. Species not observed during 2022 plant surveys. Presumed extirpated in Contra Costa County.
Horkelia cuneata var. *sericea /* Kellogg's Horkelia	-- / -- 1B.1	Apr-Sep	Chaparral, Closed-cone coniferous forest, Coastal dunes, Coastal scrub. Gravelly, Openings and Sandy soils. 35-655 feet.	**Not Expected.** No chaparral habitat present. No coniferous forest, coastal dunes or coastal scrub in vicinity of study areas.
Iris longipetala / Coast Iris	-- / -- 4.2	Mar-May	Coastal prairie, Lower montane coniferous forest, Meadows and seeps. Mesic soils. 0-1970 feet.	**Not Expected.** No coastal prairie, coniferous forest, or meadows in vicinity of study areas.
Isocoma arguta / Carquinez Goldenbush	-- / -- 1B.2	Aug-Dec	Valley and foothill grassland. 5-65 feet.	**Low.** Limited suitable habitat present. Limited grasslands in vicinity of study areas. Species not observed during 2022 plant surveys.

Scientific Name Common Name	Status (Federal/ State) & RPR	Flowering Period	Habitat Requirements[1]	Potential to Occur at the Project Site[2]
Juglans californica / Southern California Black Walnut	-- / -- 4.2	Mar-Aug	Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland. 165-2955 feet.	**Not Expected.** Limited woodlands and no coastal scrub in vicinity of study areas. Species not observed during 2022 plant and 2021 arborist surveys.
Juglans californica var. *hindsii /* Northern California Black Walnut	-- / -- 4.2	Apr-May	Foothill woodland, Wetland-riparian. 0-5675 feet.	**Not Expected.** Limited woodlands and no wetland-riparian in vicinity of study areas. Species not observed during 2022 plant and 2021 arborist surveys at Walnut Creek WTP study area. One individual, declining due to abiotic factors, observed during 2022 arborist survey at Lafayette WTP.
Lasthenia conjugens / Contra Costa Goldfields	FE / -- 1B.1	Mar-Jun	Freshwater Wetlands, Valley Grasslands, Wetland-Riparian. 0-1540 feet.	**Not Expected.** No suitable wetlands or grasslands in vicinity of study areas.
Leptosiphon acicularis / Bristly Leptosiphon	-- / -- 4.2	Apr-Jul	Chaparral, Cismontane woodland, Coastal prairie, Valley and foothill grassland. 180-4920 feet.	**Not Expected.** Limited woodlands and grasslands, and no coastal prairie in vicinity of study areas. Not known to occur in Contra Costa County. Species not observed during 2022 plant surveys.
Leptosiphon grandifloras / Large-Flowered Leptosiphon	-- / -- 4.2	Apr-Aug	Cismontane woodland, Closed-cone coniferous forest, Coastal bluff scrub, Coastal dunes, Coastal prairie, Coastal scrub, Valley and foothill grassland. Sandy soils. 15-4005 feet.	**Low.** Limited suitable habitat present. Limited woodlands and grasslands, and no coniferous forest, coastal bluff scrub, coastal dunes, coastal prairie or coastal scrub in vicinity of study areas. Species not observed during 2022 plant surveys.
Lessingia hololeuca / Woolly-Headed Lessingia	-- / -- 3	Jun-Oct	Broadleafed upland forest, Coastal scrub, Lower montane coniferous forest, Valley and foothill grassland. Clay and Serpentinite soils. 50-1000 feet.	**Not Expected.** Limited woodlands and grasslands, and no upland forest, coniferous forest, or coastal scrub in vicinity of study areas. Serpentinite soils not present in study areas. Species not observed during 2022 plant surveys.

Scientific Name Common Name	Status (Federal/ State) & RPR	Flowering Period	Habitat Requirements[1]	Potential to Occur at the Project Site[2]
Meconella oregana / Oregon Meconella	-- / -- 1B.1	Mar-Apr	Coastal prairie, Coastal scrub. 820-2035 feet.	**Not Expected.** No suitable coastal prairie or coastal scrub in vicinity of study areas.
Monolopia gracilens/ Woodland Woollythreads	-- / -- 1B.2	Mar-Jul	Broadleafed upland forest, Chaparral, Cismontane woodland, North Coast coniferous forest, Valley and foothill grassland. Serpentinite. 330-3935 feet.	**Not Expected.** Limited woodlands and grasslands, and no suitable upland or coniferous forests in vicinity of study area. Serpentinite soils not present in study area. Species not observed during 2022 plant surveys.
Oenothera deltoides ssp. *howellii /* Antioch Dunes Evening-Primrose	FE / SE 1B.1	Mar-Sep	Inland dunes. 0-100 feet.	**Not Expected.** No suitable inland dunes in vicinity of study areas. Species not observed during 2022 plant surveys.
Plagiobothrys diffuses / San Francisco Popcornflower	-- / SE 1B.1	Mar-Jun	Coastal prairie, Valley and foothill grassland. 195-1180 feet.	**Not Expected.** Limited grasslands, and no coastal prairie in vicinity of study areas. Species not known to occur in Contra Costa County. Species not observed during 2022 plant surveys.
Polygonum marinense / Marin Knotweed	-- / -- 3.1	May-Aug	Marshes and swamps. 0-35 feet.	**Not Expected.** No suitable marshes and swamps in vicinity of study areas.
Ranunculus lobbii / Lobb's Aquatic Buttercup	-- / -- 4.2	Feb-May	Cismontane woodland, North Coast coniferous forest, Valley and foothill grassland, Vernal pools. 50-1540 feet.	**Not Expected.** No vernal pools in vicinity of study areas.
Sanicula maritima / Adobe Sanicle	-- / SR 1B.1	Feb-May	Chaparral, Coastal prairie, Meadows and seeps, Valley and foothill grassland. Clay. Serpentinite. 100-785 feet.	**Not Expected.** Limited grasslands, and no coastal prairie or meadows in vicinity of study areas. No serpentinite soils in study areas. Not known to occur in Contra Costa County. Species not observed during 2022 plant surveys.
Spergularia macrotheca var. *longistyla /* Long-Styled Sand-Spurrey	-- / -- 1B.2	Feb-May	Marshes and swamps, Meadows and seeps. 0-835 feet.	**Not Expected.** No suitable marshes, swamps, or meadows in vicinity of study areas.

Scientific Name Common Name	Status (Federal/ State) & RPR	Flowering Period	Habitat Requirements[1]	Potential to Occur at the Project Site[2]
Streptanthus albidus ssp. *peramoenus /* Most Beautiful Jewelflower	-- / -- 1B.2	Apr-Sep	Chaparral, Cismontane woodland, Valley and foothill grassland. 310-3280 feet.	**Low.** Limited suitable habitat present. Limited woodlands, and grasslands in vicinity of study area. Species not observed during 2022 plant surveys.
Stuckenia filiformis ssp. *alpina /* Northern Slender Pondweed	-- / -- 1B.2	May-Jul	Marshes and swamps. 985-7055 feet.	**Not Expected.** No suitable marshes and swamps in vicinity of study areas.
Trifolium hydrophilum / Saline Clover	-- / -- 1B.2	Apr-Jun	Marshes and swamps, Valley and foothill grassland, Vernal pools. 0-985 feet.	**Not Expected.** No marshes, swamps, or vernal pools in vicinity of study areas.
Viburnum ellipticum / Oval-Leaved Viburnum	-- / -- 2B.3	May-Jun	Chaparral, Cismontane woodland, Lower montane coniferous forest. 705-4595 feet.	**Low.** Limited suitable habitat present. Limited woodlands, and no coniferous forest in vicinity of study areas. Species not observed during 2022 plant surveys.

Federal Status designations

FE: Listed as Endangered under the Federal Endangered Species Act
FT: Listed as Threatened under the Federal Endangered Species Act
--: No federal status

State Status designations

SE: Listed as Endangered under the California Endangered Species Act
ST: Listed as Threatened under the California Endangered Species Act
SC: Candidate for listing under the California Endangered Species Act
SR: Designated a Rare Plant in the State of California
--: No State status

California Native Plant Society Rare Plant Rank (RPR)

1A: Plants presumed extinct in California
1B: Plants rare, threatened or endangered in California and elsewhere
2: Plants rare, threatened, or endangered in California, but more common elsewhere
3: Plants for which more information is needed – a review list
4: Plants of limited distribution – a watch list

California Rare Plant Rank threat categories

1: Seriously endangered in California
2: Fairly endangered in California
3: Not very endangered in California

[1] Habitat information from CNPS Online Rare and Endangered Plant Inventory (2022) and USFWS Environmental Conservation Online System (2022).
[2] Information on known locations in the vicinity of the study area was compiled from CNDDB (CDFW, 2022), CNPS *Online Rare and Endangered Plant Inventory* (2022), CalFlora (CalFlora, 2022), or otherwise noted.

Table 3.3-2: Special-Status Wildlife Species With Potential to Occur within the Walnut Creek and Lafayette WTPs Study Areas

Scientific Name Common Name	Status (Federal/ State)	Habitat Requirements[1]	Potential to Occur in the Study Area
Insects			
Danaus plexippus Monarch Butterfly	FC / SA	Winter roosting sites extend along the coast from northern Mendocino County south to San Diego County. Roosts are typically located in wind protected tree groves within a half mile of the coast. Commonly found in eucalyptus, Monterey pine and/or cypress groves, with nectar and water sources in the vicinity. Larvae develop on milkweed (*Asclepias* sp.) throughout California.	**Not Expected.** No suitable monarch overwinter roosting habitat identified in study areas. Limited eucalyptus woodland at Lafayette WTP, but location is more than half a mile from the coast.
Bombus caliginosus Obscure Bumble Bee	-- / SA	Obscure bumble bees are native to the west coast of the United States. They are typically associated with chaparral and grassland plant species.	**Not Expected**. There are limited chaparral or grasslands in the vicinity of the study areas.
Bombus occidentalis Western Bumble Bee	-- / SA	Typically nests underground in abandoned rodent burrows or other cavities in open west-southwest slopes bordered by trees. This species is mostly restricted to high meadow and coastal environments.	**Not Expected**. No high meadow or coastal environments in the study areas.
Crustaceans			
Branchinecta lynchi Vernal Pool Fairy Shrimp	FT / SA	Vernal pools and swales containing clear to highly turbid water. Pools commonly found in grass bottomed swales of unplowed grasslands. Some pools are mud-bottomed and highly turbid.	**Not Expected**. No vernal pool habitat in the study areas.
Fishes			
Hypomesus transpacificus Delta Smelt	FT / SE	Found in the Sacramento-San Joaquin Delta upstream of Suisun Bay. Rarely occur in Carquinez Straight or San Pablo Bay.	**Not Expected**. No suitable brackish aquatic habitat in the study areas.
Amphibians			
Rana draytonii California red-legged frog	FT / SSC	Breeds in ponds and pools in slow-moving streams with emergent vegetation; adjacent upland habitats are often used for temporary refuges or dispersal movements.	**Not Expected**. No suitable permanent aquatic habitat within the study areas. Both Walnut Creek and Lafayette WTPs study areas are separated from much of the surrounding suitable habitat by residential and urban development. Roads separate

Scientific Name Common Name	Status (Federal/ State)	Habitat Requirements[1]	Potential to Occur in the Study Area
			Lafayette Creek from the Lafayette WTP study area. Nearest CNDDB occurrence is 1.87 miles southeast of the Lafayette WTP study area and separated by dense residential development.
Ambystoma californiense California tiger salamander	FT / ST	Vernal pools and/or seasonal water sources; requires underground refuges in adjacent upland areas, especially ground squirrel burrows.	**Not Expected**. No suitable habitat in the study areas. The species is presumed to be extirpated from the study areas.
Rana boylii Foothill Yellow-Legged Frog	-- / SE SSC	Found in rocky streams and rivers with rocky substrate in forests, chaparral, and woodlands.	**Not Expected**. There is no suitable permanent aquatic habitat within the study areas for this species.
Reptiles			
Masticophis lateralis euryxanthus Alameda whipsnake	FT / ST	Typically found in chaparral and scrub habitats, but will also use adjacent grassland, oak savanna, and woodland habitats. Often found on south-facing slopes and ravines with rock outcrops, deep crevices, or abundant rodent burrows.	**Not Expected**. Limited chaparral, scrub, grassland, and woodland habitat within the study areas. Nearest occurrences are more than 3 miles from the Walnut Creek and Lafayette WTPs study areas and are classified as extirpated. There are no known populations within dispersal distance of the study areas.
Thamnophis gigas Giant Garter Snake	FT / ST	Marsh/Swamp/Riparian scrub/Wetland. Prefers freshwater marsh and low gradient streams. Has adapted to drainage canals and irrigation ditches. This is the most aquatic of the garter snakes in California.	Not Expected. The study areas are outside of the known range for this species.
Anniella pulchra Northern California legless lizard	-- / SSC	Chaparral/Coastal dunes/Coastal scrub. Sandy or loose loamy soils under sparse vegetation. Soil moisture is essential. They prefer soils with a high moisture content.	**Not Expected**. Minimal chaparral habitat within the study areas, and study areas are largely unsuitable for the species. No coastal dunes or coastal scrub within the study areas.

Scientific Name Common Name	Status (Federal/ State)	Habitat Requirements[1]	Potential to Occur in the Study Area
Emys marmorata Western Pond Turtle	-- / SSC	Occurs in both permanent and seasonal waters, including marshes, streams, rivers, ponds, and lakes. Also found in agricultural irrigation and drainage canals. Favors habitats with large amounts of emergent logs or boulders, where several individuals may congregate to bask.	**Not Expected**. The limited disturbed aquatic habitat within the study areas is not expected to support this species.
Birds			
Selasphorus sasin Allen's Hummingbird	BCC / --	Breeds in moist coastal areas, scrub, chaparral, and forest. Winters in forest edge and scrub clearings with flowers. Nests are open cups of plant down that require an outer layer of grass or leaves, covered on the outside with lichens, moss, or pieces of bark held on with spider web. Placed in shrub or on small twig or branch of tree.	**Moderate**. Limited chaparral, scrub, and forest woodland habitat within the study areas. Individuals may travel within the study areas.
Falco peregrinus anatum American peregrine falcon	FD / SD FP	Nests on cliffs, banks, dunes, mounds, large bridges, and tall buildings, typically near wetlands, lakes, rivers, or other water bodies. Nest consists of a scrape or a depression or ledge in an open site.	**Low**. Limited suitable nesting habitat present, but individuals may occasionally forage or travel within the study areas.
Haliaeetus leucocephalus Bald Eagle	FD / SE BGEPA	Ocean shore, lake margins, and rivers for both nesting and wintering. Most nests within 1 mile of fishable water. Nests in large, old-growth, or dominant live tree with open branches, especially ponderosa pine. Roosts communally in winter.	**Low**. Limited suitable nesting habitat present, but individuals may occasionally forage or travel within the study areas.
Rallus obsoletus obsoletus California Ridgway's rail	FE / --	Inhabit a range of salt and brackish water marshes. Typically use salt marshes dominated by both pickleweed (*Salicornia virginica*) and Pacific cordgrass (*Spartina foliosa*). Nest near tidal sloughs.	**Not Expected**. No marsh habitat present within the study areas. Outside of the known range for this species.
Sterna antillarum browni California Least Tern	FE / SE FP	Nest colonially on the ground in sandy or gravelly beaches. Forage over open water in coastal regions, including within San Francisco Bay.	**Not Expected**. No suitable habitat present within the study areas. Outside of the known range for this species.
Toxostoma redivivum California Thrasher	BCC / --	Chaparral, foothills, valley thickets, parks, gardens, any lowland habitat with dense low brush. Most common in chaparral, streamside thickets and suburban neighborhoods with enough vegetation. Nest in a dense shrub of extensive thickets.	**Moderate**. Limited chaparral and habitat with dense low brush within the study areas. Individuals may forage or travel within the study areas.

Scientific Name Common Name	Status (Federal/ State)	Habitat Requirements[1]	Potential to Occur in the Study Area
Geothlypis trichas sinuosa Common Yellowthroat	BCC / SSC	Found in marsh and swamp. Resident of the San Francisco Bay region, in fresh and salt water marshes. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.	**Not Expected**. No marsh habitat present within the study areas.
Accipiter cooperii Cooper's hawk	-- / WL	Found in woodland, chiefly of open, interrupted or marginal type. Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river floodplains; also, live oaks.	**Moderate**. Limited suitable nesting habitat present, but individuals may occasionally forage or travel within the study areas.
Aquila chrysaetos Golden Eagle	BGEPA / FP WL	Found in broadleaved upland forest/Cismontane woodland/Coastal prairie/Great Basin grassland/Great Basin scrub/Lower montane coniferous forest/Pinon and juniper woodlands/Upper montane coniferous forest/Valley and foothill grassland. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	**Low**. Limited suitable nesting habitat present, but individuals may occasionally forage or travel within the study areas.
Carduelis lawrencei Lawrence's Goldfinch	BCC / --	Inhabit arid and open woodlands near chaparral or other brushy areas, tall annual weed fields, and a water source such as a stream, small lake, or farm pond.	**Moderate**. Limited chaparral and woodland habitat within the study areas. Individuals may forage or travel within the study areas.
Lanius ludovicianus Loggerhead shrike	-- / SSC	Broken woodlands, savannah, pinyon-juniper, Joshua tree, and riparian woodlands, desert oases, scrub & washes. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	**Low**. Limited woodland habitat within the study areas. Individuals may forage or travel within the study areas.
Picoides nuttalli Nuttall's Woodpecker	BCC / --	Found primarily in oak woodlands and riparian woodlands. Nests within tree cavity.	**Moderate**. Limited woodland habitat within the study areas. Individuals may forage or travel within the study areas.
Baeolophus inornatus Oak Titmouse	BCC / --	Mostly lives in warm, open, dry oak or oak-pine woodlands. Will inhabit scrub oaks or other brush if nearby woodlands. Nests in tree cavities and occasionally in stumps, fenceposts, pipes, eaves, or holes in riverbanks.	**Moderate**. Limited woodland habitat within the study areas. Individuals may forage or travel within the study areas.

Scientific Name Common Name	Status (Federal/ State)	Habitat Requirements[1]	Potential to Occur in the Study Area
Contopus cooperi Olive-Sided Flycatcher	BCC / SSC	Breeds in montane and northern coniferous forests, at forest edges and openings, such as meadows and ponds.	**Not Expected**. No suitable habitat present within the study areas.
Empidonax difficilis Pacific-slope flycatcher	-- / --	Moist woods, mixed forests, shady canyons. Breeds in wet forested regions. Found in coniferous forests but concentrates in deciduous growth, such as maples and alders, along streams. Also found in canyon groves of oak, sycamore, or willow.	**Low**. Limited woodland habitat within the study areas. Individuals may forage or travel within the study areas.
Selasphorus rufus Rufous Hummingbird	BCC / --	Forest edges, streamsides, mountain meadows. Breeding habitat includes forest edges and clearings, and brushy growth within the region of northern coast and mountains.	**Moderate**. Limited woodland and forest habitat within the study areas. Individuals may forage or travel within the study areas.
Accipiter striatus Sharp-Shinned Hawk	-- / WL	Found in Cismontane woodland/Lower montane coniferous forest/Riparian forest/Riparian woodland/Ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine habitats. Prefers riparian areas. North-facing slopes with plucking perches are critical requirements. Nests usually within 275 ft of water.	**Moderate**. Limited suitable woodland habitat present, but individuals may occasionally forage or travel within the study areas.
Agelaius tricolor Tricolored Blackbird	BCC / ST SSC	Highly colonial species: typically nests in freshwater marshes containing emergent vegetation such as cattail (Typha sp.) and bulrush (*Schoenoplectus* sp.), but will also use blackberry thickets and dense patches of ruderal vegetation such as thistles and mustard adjacent to marshes or wetlands.	**Not Expected**. No suitable marsh habitat or adjacent marsh or wetland habitat present within the study areas.
Chamaea fasciata Wrentit	BCC / --	Chaparral, brush, parks, garden shrubs. Inhabits most kinds of dense low growth and most common in chaparral, thickets of poison oak, and coastal sage scrub. Also in streamside thickets and shrubby areas in suburbs and city parks.	**Low.** Limited chaparral and vegetation brush habitat within the study areas. Individuals may forage or travel within the study areas.
Mammals			
Taxidea taxus American badger	-- / SSC	Occupies a diversity of habitats throughout the state; principal habitat requirements include sufficient prey base, friable soils, and relatively open, uncultivated ground.	**Not Expected**. The high level of human disturbance and limited habitat in the study areas it unsuitable for this species.

Scientific Name Common Name	Status (Federal/ State)	Habitat Requirements[1]	Potential to Occur in the Study Area
Dipodomys heermanni berkeleyensis Berkeley kangaroo rat	-- / SA	Open grassy hilltops and open spaces in chaparral and blue oak/digger pine woodlands. Needs fine, deep, well-drained soil for burrowing.	**Not Expected**. This species is very rare and may be locally extinct and is not expected within the disturbed habitat present within the study areas.
Myotis thysanodes Fringed Myotis	-- / SA	Widespread in California occurring in all but the Central Valley/Colorado/Mojave deserts. Occurs in a wide variety of habitats, ranging in elevation from sea level to 9350 feet. Fringed Myotis roosts in caves, mines, buildings, and crevices.	**Low**. Roosts in caves, mines, rock crevices, or buildings. May roost in buildings and trees present in the study areas despite proximity to human disturbance.
Myotis evotis Long-Eared Myotis	-- / SA	Widespread in California but generally believed to be uncommon in most of its range. Avoids the arid Central Valley and hot deserts, occurring along the entire coast. This species has been found in nearly all brush, woodland, and forest habitats from sea level to at least 9000 feet. Coniferous woodlands and forests are preferred for the species. Roosts in buildings, crevices, spaces under bark, snags, and caves.	**Low**. Suitable habitat present. Roosts in rock outcroppings, crevices, tree cavities, beneath exfoliating bark, and buildings. May roost in buildings and trees present in the study areas despite proximity to human disturbance.
Myotis volans Long-Legged Myotis	-- / SA	Common in California occurring in the coastal ranges. Species is most common in conifer forest habitats above 4000 feet. Also forages in chaparral, coastal scrub, Great Basin shrub habitats, and in early successional stages of woodlands and forests. Uncommon in desert and arid grassland habitats. Roosts in rock crevices, buildings, under tree bark, snags, mines, and caves.	**Not Expected**. Suitable higher elevation conifer forest habitat not present in the study areas.
Antrozous pallidus Pallid Bat	-- / SSC	Found in arid and semi-arid environments near water. Deserts, grasslands, shrublands, woodlands & forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites. During the day they roost in cracks and crevices of tree bark and rocky outcrops.	**Low**. Suitable habitat present. Roosts in caves, mines, rock outcroppings, crevices, trees, bridges, and buildings. May roost in buildings and trees present in the study areas despite proximity to human disturbance.

Scientific Name Common Name	Status (Federal/ State)	Habitat Requirements[1]	Potential to Occur in the Study Area
Neotoma fuscipes annectens San Francisco Dusky-Footed Woodrat	-- / SSC	Found in forest habitats of moderate canopy and moderate to dense understory. May prefer chaparral and redwood habitats. Constructs nests of shredded grass, leaves, and other material. May be limited by availability of nest-building materials.	**Moderate**. May occur in the limited oak woodland and riparian habitat in the Walnut Creek WTP study area.
Myotis ciliolabrum Western Small Footed Myotis	-- / SA	Common bat of arid uplands in California and within Contra Costa County in coastal California. Occurs in a wide variety of habitats, primarily in relatively arid wooded and brushy uplands near water. Found from sea level to 8900 feet. Seeks cover in caves, buildings, mines, crevices, and occasionally under bridges and under bark.	**Low**. Limited suitable habitat present. Roosts in caves, mines, rocky outcroppings, and beneath bark. May roost in trees present in the study areas despite proximity to human disturbance.
Corynorhinus townsendii Townsend's Big-Eared Bat	-- / SSC	This species is found throughout the western United States and inhabits large cavities to roost such as abandoned buildings, caves, and basal cavities of trees.	**Not expected**. No suitable habitat present. Roosts in caves, old mines, buildings, and rock ledges. Susceptible to disturbance and standard facility operations likely preclude presence at building habitat within the study areas.

Federal Status Designations:

FE	Listed as Endangered under the federal Endangered Species Act
FT	Listed as Threatened under the federal Endangered Species Act
FC	Candidate for listing under the federal Endangered Species Act
BCC	Bird of Conservation Concern
FD	Delisted; was formerly listed as Threatened or Endangered
BGEPA	Protected under the Bald and Golden Eagle Protection Act
CH	Critical Habitat
EFH	Essential Fish Habitat

State of California Status Designations:

SE	Listed as Endangered under the California Endangered Species Act
ST	Listed as Threatened under the California Endangered Species Act
SC	Candidate for listing under the California Endangered Species Act
SD	State Delisted; was formerly listed as Threatened or Endangered
FP	Fully Protected Species under California Fish and Game Code
SSC	California Department of Fish and Wildlife Species of Special Concern
SA	Included on the California Department of Fish and Wildlife's Special Animals List
WL	Included on the California Department of Fish and Wildlife's Watch List

[1] Habitat information from CNDDB (CDFW, 2022)

3.3.4 Regulatory Framework

This section describes policies and regulations related to recreation that may apply to the Project.

Federal Policies and Regulations

Endangered Species Act and Migratory Bird Treaty Act

The USFWS implements the FESA)(16 U.S. Code [U.S.C.] Section 1531 et seq.) and MBTA (16 U.S.C. Section 703-712). Under these acts, the USFWS has jurisdiction over migratory birds, candidate species, and species proposed or listed as threatened or endangered. All birds native to North America are protected under the MBTA, which prohibits the purposeful killing, possessing, or trading of migratory birds, nests, and eggs except as otherwise provided in 16 U.S.C. Section 703–712 (e.g., regulated take of game species). Enacted in 1973, the FESA prohibits the take, possession, sale, or transport of proposed, candidate, or listed species. "Take" is broadly defined as "…the action of harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting, or attempting to engage in any such conduct." Projects that would result in take of any species federally listed as threatened or endangered are required to obtain authorization from the National Marine Fisheries Service and/or USFWS through Section 7 (interagency consultation) or Section 10(a) (Incidental Take Permit) of the FESA, depending on whether the federal government is involved in permitting or funding the project. The Section 7 authorization process does not apply to the Project as it has no federal nexus; but if the Project would involve take of listed species, the Section 10(a) process, which can be used to allow take of endangered species or their habitat incidental to nonfederal activities, would apply because it is a nonfederal action. No federally-listed species are expected in the Walnut Creek and Lafayette WTPs study areas, and the FESA does not apply to the Project. The MBTA would apply to the Project because native bird species could be present in the study areas.

Clean Water Act, Section 404

Under Section 404 of the CWA, the USACE and the U.S. Environmental Protection Agency regulate the discharge of dredge or fill material into waters of the U.S., including wetlands and lakes, rivers, streams, and their tributaries. For regulatory purposes, "wetlands" are defined as areas "…inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3, 40 CFR 230.3). Applicants must obtain a permit from the USACE under Section 404 of the CWA for all discharges of dredge or fill material into wetlands or jurisdictional other waters of the U.S. before proceeding with a proposed action. Waters of the U.S. identified in the Walnut Creek WTP study area include Putnam Creek, unnamed intermittent creeks, and ephemeral drainage.

There are no waters of the U.S. in or immediately adjacent to the Walnut Creek and Lafayette WTPs study areas that would be potentially impacted by discharge of dredge or fill material and, therefore, the Project would not require a CWA Section 404 permit.

Clean Water Act, Section 401

A Section 401 Water Quality Certification, issued by the RWQCB, is necessary when a project requires a Section 404 permit. Section 401 certification verifies project compliances with state water quality standards. Putnam Creek, unnamed intermittent creeks, and ephemeral drainage in the Walnut Creek WTP study area are subject to Section 401 of the CWA. Since the Project does not require a Section 404 permit, then the Project also does not require a Section 401 certification.

State Policies and Regulations

State CEQA Guidelines Section 15380

State *CEQA Guidelines* Section 15380(d) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain criteria in subdivision 15380(b). Section 15380(b) addresses projects that may significantly affect a species that is not yet listed by the USFWS or the CDFW but is under consideration for listing (e.g., a candidate species). CEQA requires an agency address impacts to rare species. In general, plants appearing on the CRPR List 1 (plants believed to be extant and rare, threatened, or endangered plants in California) and List 2 (rare, threatened, or endangered plants in California but more numerous elsewhere) are considered to meet CEQA's Section 15380 criteria.

California Endangered Species Act

The CDFW administers CESA. Section 2080 of the CFGC prohibits take of any species that the Fish and Wildlife Commission determines to be an endangered species or a threatened species. However, CESA does allow for take that is incidental to otherwise lawful development projects.

Sections 2081(b) and (c) of CESA allow the CDFW to issue an Incidental Take Permit for a state-listed threatened or endangered species only if specific criteria are met. These criteria are reiterated in Title 14 of CCR, Sections 783.4(a) and (b):

- The authorized take is incidental to an otherwise lawful activity.
- The effects of the authorized take are minimized and fully mitigated. The measures required to minimize and fully mitigate the effects of the authorized take:
  - Are roughly proportional in extent to the effect of the taking on the species.
  - Maintain the applicant's objectives to the greatest extent possible.
  - Are capable of successful implementation.
- Adequate funding is provided to implement the required minimization and mitigation measures and to monitor compliance with and the effectiveness of the measures.
- Issuance of the permit will not jeopardize the continued existence of a state-listed species.

Under Section 2081.15, Incidental Take Permits may be issued for certain infrastructure improvement projects involving take of species that are "fully protected" under state law. Several state-listed species also are listed as threatened or endangered under the FESA. Section 2080.1 allows the CDFW to make a determination that a federal incidental take authorization for a species also listed by the state is consistent with CESA. Section 2080.1 consistency cannot be issued for federally listed species that are fully protected under state law. No state-listed species are expected in the Walnut Creek and Lafayette WTPs study areas, and the CESA does not apply to the Project.

Lake or Streambed Alteration Agreement

Under Section 1602 of the CFGC, the CDFW regulates activities that would alter the flow, or change or use any material from the bed, channel, or bank of any perennial, intermittent, or ephemeral river, stream, or lake. If any such activity would substantially adversely affect an existing fish or wildlife resource, a Section 1602 permit (referred to as a lake or streambed alteration agreement) is required. Redirecting the social footpath into the riparian zone around the western side of the gravity thickeners at the Walnut Creek WTP would require EBMUD to obtain a Lake and Streambed Alteration Agreement with the CDFW.

California Fish and Game Code—Sections 3503, 3503.5, 3513, and 4150

CFGC Section 3503 states that it is unlawful to take, possess, or needlessly destroy the nests or eggs of any bird—except as otherwise provided by the CFGC or any regulation made pursuant thereto. CFGC Section 3503.5 protects all birds of prey (raptors) and their eggs and nests. Section 3513 states that it is unlawful to take or possess any migratory nongame bird as designated in the MBTA. CFGC Section 4150 states that all non-game mammals or parts thereof may not be taken or possessed except as otherwise provided in the code or in accordance with regulations adopted by the California Fish and Game Commission. Section 4150 applies to all bat species.

The above CFGC sections apply to the Project due to the potential presence of nesting birds, including raptors, and roosting bats in buildings and trees present in the Walnut Creek and Lafayette WTPs study areas.

Local Policies and Regulations

Under Section 53091 of the California Government Code, local building and land use zoning ordinances do not apply to projects involving facilities for the production, generation, storage, treatment, or transmission of water. However, EBMUD's practice is to work with local jurisdictions and neighboring communities during project planning and to consider local environmental protection policies for guidance.

Walnut Creek General Plan

The City of Walnut Creek General Plan (City of Walnut Creek, 2006) is a long-range plan used as a blueprint for conservation and development and provides a framework to guide the City's growth and protection of resources. Applicable goals and objectives from the General Plan Chapter 3, Natural Environment and Public Space, are listed below.

Goal 1. Maintain and enhance open space lands.

> **Policy 1.1.** Protect, manage, and improve open space lands.
>
> **Policy 1.2.** Protect and enhance the natural environment.

Goal 3. Maintain and enhance the area's creek systems, their riparian environments, and their recreational amenities.

> **Policy 3.1.** Restore riparian corridors and waterways throughout the city.

Lafayette General Plan

The City of Lafayette General Plan is a long-range plan containing goals and policies for development of the city. Applicable goals and objectives from the General Plan's Land Use (City of Lafayette, 2012) and Open Space and Conservation elements are listed below (City of Lafayette, 2002).

Goal LU-2. Ensure that development respects the natural environment of Lafayette. Preserve the scenic quality of ridgelines, hills, creek areas, and trees.

Goal LU-4. Ensure that the semi-rural character of the community is protected by appropriate infrastructure design.

> **Policy LU-4.1.** <u>Infrastructure Design</u>: Public and private infrastructure should reinforce the semi-rural qualities of residential neighborhoods.

Goal OS-4. Preserve areas with important biotic resources.

> **Policy OS-4.1**. <u>Riparian Vegetation</u>: Preserve, protect, and restore riparian habitat, particularly the native, riparian woodland species and associated understory plants.
>
> **Policy OS-4.2.** <u>Ridgelines</u>: Protect native vegetation along ridgelines.
>
> **Policy OS-4.3.** <u>Woodlands</u>: Preserve existing woodlands and their associated vegetation.
>
> **Policy OS-4.4.** <u>The Developed Landscape</u>: Protect important groves of trees and significant existing vegetation. Encourage the planting of native, drought-tolerant and fire-resistant species, as well as the planting of herbaceous species that have a high wildlife value. Avoid the cutting of mature trees.
>
> **Policy OS-4.5.** <u>Biotic Resource Analysis</u>: Require a biotic resource analysis prior to development of properties located within, or adjacent to, identified environmentally sensitive areas.

Goal OS-5. Preserve and protect creeks, streams, and other watercourses in their natural state.

> **Policy OS-5.1.** <u>Stream bank stability</u>: Protect stream bank stability.

Walnut Creek Municipal Code

Walnut Creek Municipal Code Title 3, Chapter 8, Preservation of Trees on Private Property, provides protection for all trees and requires a permit for removal, along with additional protection measures for any tree. Chapter 8 provides the definition of a tree and highly protected tree (described above in *Section 3.3-1, Definitions*). Chapter 8 also sets forth provisions for tree removal permits and protection measures for trees that are not to be removed during construction projects, such as establishing tree protection zones.

Lafayette Municipal Code

The City of Lafayette recognizes the many intrinsic values that trees contribute to the urban and natural environment and encourages the protection of certain trees. The Lafayette Municipal Code provides protection for certain trees and requires a permit for the removal of any protected tree. Protected trees are defined within Chapter 6-17 of the Lafayette Municipal Code (described above in *Section 3.3-1, Definitions*).

EBMUD Standard Construction Specifications

EBMUD's Standard Construction Specifications and Procedures apply to all contractors completing work for EBMUD, and to work completed by EBMUD staff. The following EBMUD practices and procedures are applicable to biological resources:

- **EBMUD Standard Construction Specification 01 35 44, Environmental Requirements**

  EBMUD Standard Construction Specification 01 35 44 (Environmental Requirements) sets forth the contract requirements for environmental compliance to which construction crews must adhere, including provisions for protection of water quality during construction (EBMUD, 2023a). These measures minimize impacts to biological resources.

  Standard Construction Specification 01 35 44 stipulates that the construction crew shall be responsible for maintaining compliance with applicable federal, state, and local requirements regarding storm water management. The requirements include preparation of plans that outline procedures to be followed to ensure effective stormwater/non-stormwater management and documentation of compliance. EBMUD reviews submittals for conformance with the requirements of the contract document and specified laws and regulations. Sections of Standard Construction Specification 01 35 44 that require planning documents and procedures related to protection of water quality during construction are described below.

  - **Controls on Site Activities.** EBMUD Standard Construction Specification 01 35 44 Section 1.1(B), Site Activities, requires that activities on the construction site are controlled to prevent discharge of contaminated stormwater. Applicable requirements include:

    - Protect storm drains and surface waters from impacts of project activity.
    - Store materials and wastes such as demolition material, soil, sand, asphalt, rubbish, paint, cement, concrete or washings thereof, oil or petroleum products, or earthen materials in a manner to prevent it from being washed by rainfall or runoff outside the construction limits.
    - Reuse or dispose of excess material consistent with all applicable legal requirements and disposal facility permits.
    - Clean up all spills and immediately notify the Engineer in the event of a spill.
    - Equip stationary equipment such as motors, pumps, and generators with drip pans.
    - Divert or otherwise control surface water and waters flowing from existing projects, structures, or surrounding areas from coming onto the work and staging areas. The method of diversions or control shall be adequate to ensure the safety of stored materials and of personnel using these areas.
    - Following completion of Work, remove ditches, dikes, or other ground alterations made by the Contractor. The ground surfaces shall be returned to their former condition, or as near as practicable, in the Engineer's opinion.
    - Prevent visible dust emissions from leaving the work areas.

- Maintain construction equipment in good operating condition to reduce emissions.
- Handle, store, apply, and dispose of any chemical or hazardous material used in the performance of the Work in a manner consistent with all applicable federal, state, and local laws and regulations.

- **Storm Water Management.** EBMUD Standard Construction Specification 01 35 44 Section 1.4(A) requires submittal of a Stormwater Pollution Prevention Plan (SWPPP) that describes measures that shall be implemented to prevent the discharge of contaminated storm water runoff from the jobsite. Contaminants to be addressed include, but are not limited to, soil, sediment, concrete residue, pH less than 6.5 or greater than 8.5, and chlorine residual and all other contaminants known to exist at the jobsite location as described in Document 00 31 24 – Materials Assessment Information. In addition to the State's General Construction Stormwater Permit, the Contractor shall obtain and comply with regulatory requirements of local storm water permits, such as Contra Costa County's County Watershed Program to enable the inspection of C.6 construction stormwater BMPs.
- **Water Control and Disposal Plan.** EBMUD Standard Construction Specification 01 35 44 Section 1.4(B) requires that the Contractor shall submit a detailed Water Control and Disposal Plan, which shall comply with all requirements of the Specification and applicable discharge permits.
  - Non-Stormwater Discharges: Plan shall describe measures for containment, handling, treatment (as necessary), and disposal of discharges such as groundwater (if encountered), runoff of water used for dust control, stockpile leachate, tank heel water, wash water, sawcut slurry, test water and construction water.
  - Sanitary Sewer Discharges: Plan shall describe required applications and/or permits from the sanitary sewer system owner or agency having jurisdiction regarding the planned discharge. Plan shall outline monitoring and reporting expected to support sanitary sewer discharge, including a sampling and analysis plan. All monitoring results shall be submitted to the Engineer prior to the end of the Work.

- **EBMUD Standard Construction Specification 01 35 45, Biological, Cultural, and Paleontological Resource Requirements**

  EBMUD Standard Construction Specification 01 35 45 (Biological, Cultural, and Paleontological Resource Requirements) sets forth the contract requirements for environmental compliance to which construction crews must adhere, including provisions for tree protection (EBMUD, 2023b). Sections of Standard Construction Specification 01 35 45 that require planning documents and procedures related to protection of biological resources during construction are described below.

  - **Protection of Native and Non-Native Protected Trees.** EBMUD Standard Construction Specification 01 35 45, Section 3.1 requires the following procedures for protection of trees:

- Locations of trees to be removed and protected are shown in the construction drawings. Pruning and trimming shall be completed by the Contractor and approved by the Engineer. Pruning shall adhere to the Tree Pruning Guidelines of the International Society of Arboriculture.
- Erect exclusion fencing five feet outside of the drip lines of trees to be protected. Erect and maintain a temporary minimum 3-foot-high orange plastic mesh exclusion fence at the locations as shown in the drawings. The fence posts shall be six-foot minimum length steel shapes, installed at 10-feet minimum on center, and be driven into the ground. The Contractor shall be prohibited from entering or disturbing the protected area within the fence except as directed by the Engineer. Exclusion fencing shall remain in place until construction is completed and the Engineer approves its removal.
- No grading, construction, demolition, trenching for irrigation, planting or other work, except as specified herein, shall occur within the tree protection zone established by the exclusion fencing installed shown in the drawings. In addition, no excess soil, chemicals, debris, equipment or other materials shall be dumped or stored within the tree protection zone.
- In areas that are within the tree drip line and outside the tree protection zone that are to be traveled over by vehicles and equipment, the areas shall be covered with a protective mat composed of a 12-inch thickness of wood chips or gravel and covered by a minimum ¾-inch-thick steel traffic plate. The protective mat shall remain in place until construction is completed and the Engineer approves its removal.
- Tree roots exposed during trench excavation shall be pruned cleanly at the edge of the excavation and treated to the satisfaction of a certified arborist provided by EBMUD.
- Any tree injured during construction shall be evaluated as soon as possible by a certified arborist provided by EBMUD, and replaced as deemed necessary by the certified arborist.

- **Protection of Birds Protected Under the Migratory Bird Treaty Act and Roosting Bats.** EBMUD Standard Construction Specification 01 35 45 Section 3.2, requires that the contractor provide 30 days' written notice to the Engineer prior to ground disturbing activities, pruning, and trimming. EBMUD will conduct biological reconnaissance in advance of construction and will conduct biologic monitoring during construction as necessary. The following measures apply to protected species:
  - **Protected Species.** If protected species, or suitable habitats for protected species, are found during biological reconnaissance surveys:
    - Before beginning construction, all Contractor construction personnel are required to attend an environmental training program provided by EBMUD of up to one-day for site supervisors, foreman and project managers, and up to 30-minutes for non-supervisory contractor personnel. The training program will be completed in person or by watching a video at an EBMUD-designated location, conducted by a

designated biologist. The program will discuss all sensitive habitats and sensitive species that may occur within the project work limits, including the responsibilities of Contractor's construction personnel, applicable mitigation measures, and notification requirements. The Contractor is responsible for ensuring that all workers requiring training are identified to EBMUD. Prior to accessing or performing construction work, all Contractor personnel shall:

  - Sign a wallet card provided by the Engineer verifying that all Contractor construction personnel have attended the appropriate level of training relative to their position; have read and understood the contents of the environmental training and shall comply with all project environmental requirements.
  - Display an environmental training hard hat decal (provided by EBMUD after completion of the training) at all times.

- **Birds Protected under the Migratory Bird Treaty Act (MBTA)**
  - It is unlawful to pursue, hunt, take, capture, or kill any migratory bird without a permit issued by the U.S. Department of the Interior.
  - If construction commences between February 1 and August 31, during the nesting season, EBMUD will conduct a preconstruction survey for nesting birds within 7 days prior to construction to ensure that no nest will be disturbed during construction.
  - If active nests of migratory bird species (listed in the MBTA) are found within the project site, or in areas subject to disturbance from construction activities, an avoidance buffer to avoid nest disturbance shall be constructed. The buffer size shall be determined by the Designated Biologist in consultation with California Department of Fish and Wildlife (CDFW) and is based on the nest location, topography, cover and species' tolerance to disturbance.
  - If an avoidance buffer is not achievable, the Designated Biologist shall monitor the nest(s) to document that no take of the nest (nest failure) has occurred. Active nests shall not be taken or destroyed under the MBTA and, for raptors, under the CDFW Code. If it is determined that construction activity is resulting in nest disturbance, work should cease immediately, and the Contractor shall notify the Engineer who will consult with the Designated Biologist and appropriate regulatory agencies.
  - If preconstruction surveys indicate that nests are inactive or potential habitat is unoccupied during the construction period, no further action is required. Trees and shrubs within the construction footprint that have been determined to be unoccupied by special-status birds or that are located outside the avoidance buffer for active nests may be removed. Nests initiated during construction (while significant disturbance from construction activities persist) may be presumed to

be unaffected, and only a minimal buffer, determined by the Designated Biologist, would be necessary.

- **Roosting Bats**
  - If construction commences between March 1 and July 31, during the bat maternity period, EBMUD will conduct a preconstruction survey for roosting bats within two weeks prior to construction to ensure that no roosting bats will be disturbed during construction.
  - If roosting surveys indicate potential occupation by a special-status bat species, and/or identify a large day roosting population or maternity roost by any bat species within 200 feet of a construction work area, the Designated Biologist shall conduct focused day- and/or night-emergence surveys, as appropriate.
  - If active maternity roosts or day roosts are found within the project site, or in areas subject to disturbance from construction activities, an avoidance buffers shall be constructed. The buffer size will be determined by the Designated Biologist in consultation with CDFW.
  - If a non-breeding bat roost is found in a structure scheduled for modification or removal, the bats shall be safety evicted, under the direction of the Designated Biologist, in consultation with CDFW to ensure that the bats are not injured.
  - If preconstruction surveys indicate that no roosting is present, or potential roosting habitat is unoccupied during the construction period, no further action is required. Trees and shrubs within the construction footprint that have been determined to be unoccupied by roosting bats, or that are located outside the avoidance buffer for active roosting sites may be removed. Roosting initiated during construction is presumed to be unaffected, and no buffer would be necessary.

3.3.5 Impact Analysis

Methodology for Analysis

Impacts on biological resources are identified and evaluated based on relevant CEQA Guidelines and local standards, policies, and guidelines; on the likelihood that special-status species, sensitive habitats, wetlands and waters, and wildlife corridors are present within the Walnut Creek and Lafayette WTPs study area; and on the likely effects that Project construction, operation, and maintenance might have on these resources. Special-status resources that have no or low potential to occur in the Walnut Creek and Lafayette WTPs study area are not considered in the impact analysis. As described in *Section 3.3.3, Environmental Setting*, no special-status fish occur in the Walnut Creek and Lafayette WTPs study areas and therefore are not considered in the following impact analysis.

This section analyzes potential Project impacts on biological resources from the construction phases (short-term) and the operations and maintenance phase (long-term). The analysis addresses potential direct, indirect, and cumulative impacts of the Project on special-status species and other protected biological resources, wetlands and other waters, and potential Project conflicts with local policies. Direct impacts are those resulting from the Project that occur at the same time and place. Indirect impacts are caused by the Project but can occur later in time or farther removed in distance while still reasonably foreseeable and related to the Project. Impact analyses typically characterize effects on biological resources as temporary or permanent, with a permanent impact referring to areas that are developed or otherwise precluded from restoration to a pre-Project state.

For the purposes of this EIR, the word "substantial" as used in the significance criteria below is defined by the following three principal components:

i. Magnitude and duration of the impact

ii. Uniqueness of the affected resource (rarity)

iii. Susceptibility of the affected resource to disturbance

The approaches to the analyses of impacts related to construction and operation and maintenance of the Project are described below under their respective headings.

Significance Criteria

Consistent with Appendix G of the *CEQA Guidelines* an impact on biological resources would be considered significant if the Project would:

1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status in local or regional plans, policies, or regulations, or by the CDFW or USFWS.
2. 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 CDFW or USFWS.
3. 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.
4. 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.
5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
6. Conflict with the provisions of an adopted habitat conservation plan (HCP), Natural Communities Conservation Plan (NCCP), or other approved local, regional, or state HCP.

Criteria Requiring No Further Evaluation

Criteria listed above that are not applicable to actions associated with the proposed project are identified below along with a supporting rationale as to why further consideration is unnecessary and a no-impact determination is appropriate.

- ***Conflict with the provisions of an adopted habitat conservation plan (HCP), NCCP, or other approved local, regional, or state HCP*** (***Criterion 6).*** The Project areas for the

Walnut Creek and Lafayette WTPs are not located within the boundaries of any Habitat Conservation Plan or Natural Community Conservation Plan or other approved conservation agreement within Contra Costa County. Therefore, there would be no impact because there would be no conflicts with an adopted plan.

Impacts and Mitigation Measures

Impact BIO-1: 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 CDFW or USFWS. (Criterion 1)

Rare and Special-Status Plants

Walnut Creek WTP Construction Phase 1 and 2

The Walnut Creek WTP study area lacks suitable habitats for special-status plant species that would occur in the region. Non-native grassland within the Walnut Creek WTP study area could provide marginally suitable habitat for special-status plant species. However, as summarized in **Table 3.3-1**, no special-status plant species were observed during rare plant surveys conducted at the Walnut Creek WTP (Kleinfelder, 2022). Therefore, construction at the Walnut Creek WTP would have no impact on rare and special-status plants.

Based on the Arborist Study performed for the Project by Insignia Environmental (2021) (**Appendix D**), approximately 86 trees may require removal from the Walnut Creek WTP site based on their proximity to the proposed development area (i.e., the trunk or at least 40 percent of the tree dripline is located within or adjacent to the proposed development area). These 86 native and non-native trees are a combination of Aleppo pine, Coast live oak, Valley oak, Buckeye, Peruvian pepper tree, Chinese pistache, and Raywood ash. The CNPS does not designate any of these trees as rare plant species. Also, while a combination of trees, including non-native trees, will be removed, all replacement trees will be native tree species.

As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including Standard Construction Specification 01 35 45, Biological, Cultural, and Paleontological Resource Requirements, Section 3.1, Protection of Native and Non-Native Protected Trees, which includes measures to protect trees, such as clearly marking trees to be protected, erecting exclusion fencing, and protecting the ground surface for areas within the dripline and outside the tree protection zone. Because Section 3.1, Protection of Native and Non-Native Protected Trees, has been incorporated into the Project and includes measures to protect trees, and no trees identified as special-status species will be removed, construction at the Walnut Creek WTP would not have a substantial adverse effect on any special-status plant species, and the impact would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (**Appendix E**) lists the applicable standard specifications language.

Lafayette WTP Construction

The Lafayette WTP study area consists primarily of developed areas with ornamental landscaping. Non-native grassland is present around the Lafayette WTP study area outside of proposed construction and staging areas. A single individual of Northern California black walnut was recorded just outside the construction footprint. Due to the developed nature of the Lafayette WTP study area, no other rare or special-status plants are anticipated to occur.

Based on the Arborist Study performed for the Project by Insignia Environmental (2022) (**Appendix D**), approximately 28 trees may require removal from the Lafayette WTP site based on their proximity to the proposed development area (i.e., the trunk or at least 40 percent of the tree dripline is located within or adjacent to the proposed development area). These 28 native trees are a combination of Coast live oak and California bay laurel.

The CNPS designates the Northern California black walnut as having a Rare Plant Rank of 4.2, which indicates plants of limited distribution that are moderately threatened in California. The Arborist Condition Report indicates that the tree's health is declining due to abiotic factors (e.g., inadequate water, poor soil) (Insignia Environmental, 2022). Construction could impact the tree because the tree's dripline is within a proposed development area. EBMUD would follow recommendations in the arborist report and would place the retaining wall at the outer perimeter of the dripline so as to avoid impacts to the tree.

As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including Standard Construction Specification 01 35 45, Biological, Cultural, and Paleontological Resource Requirements, Section 3.1, Protection of Native and Non-Native Protected Trees, which includes measures to protect trees, such as clearly marking trees to be protected, erecting exclusion fencing, and protecting the ground surface for areas within the dripline and outside the tree protection zone. Because Section 3.1, Protection of Native and Non-Native Protected Trees, has been incorporated into the Project and includes measures to protect trees, construction at the Lafayette WTP would not have a substantial adverse effect on any special-status plant species, and the impact would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (**Appendix E**) lists the applicable standard specifications language.

<u>Operation and Maintenance</u>

Once the Project is completed and operational, operation and maintenance activities would occur within the developed areas at the Walnut Creek and Lafayette WTPs. Due to the absence of special-status plant species at the Project sites, operation of the Project would have no impact on special-status plant species.

<u>Significance Determination Before Mitigation</u>

Less than significant.

<u>Mitigation Measures</u>

None required.

Special-Status and Common Nesting Bird Species

<u>Walnut Creek WTP Phase 1 and 2 and Lafayette WTP Construction</u>

The woodland vegetation at both the Walnut Creek and Lafayette WTPs study areas provides suitable nesting and foraging habitat for birds. Several special-status raptors and passerine avian species, including species with federal designations as birds of conservation concern (Allen's hummingbird, California thrasher, Lawrence's goldfinch, Nuttall's woodpecker, oak titmouse, and rufous hummingbird) and species on the CDFW Watch List (Cooper's hawk and sharp-shinned hawk), may nest and/or forage in or near the Walnut Creek and Lafayette WTPs sites. Similarly, several common raptors and passerine birds protected by the MBTA and CFGC may nest in or near the Walnut Creek and Lafayette WTPs study areas.

Disruption of nesting special-status or common avian species could occur as a result of tree removal at both the Walnut Creek and Lafayette WTPs sites (described further under Impact BIO-5 below), or temporary increased human activity (e.g., due to the use of heavy construction equipment and human activity) during the breeding season (approximately February through August), which is a potentially significant impact as it may result in direct mortality or disturb nesting avian species and lead to nest abandonment or poor reproductive success. As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including Standard Construction Specification 01 35 45, Biological, Cultural, and Paleontological Resource Requirements, Section 3.2, Protection of Birds Protected Under the Migratory Treaty Act and Roosting Bats, which includes provisions for preconstruction biological reconnaissance, including nesting bird surveys, biologic monitoring during construction, and delineation of active bird nest avoidance buffer zones.

Standard Construction Specification 01 35 45, Biological, Cultural, and Paleontological Resource Requirements, Section 3.1 Protection of Native and Non-Native Protected Trees, requires that trees to be removed and preserved be clearly identified. Section 3.1 also requires that work such as grading occur outside the established tree protection zone, and measures are taken to protect trees where work may occur nearby (such as protective mats, no storage of excess soil or equipment) (EBMUD, 2022). Protective measures included in Section 3.1 would ensure that the trees along the perimeter of the construction footprint, which are not planned for removal, would be preserved, thus preventing loss of nesting bird habitat.

Because Section 3.2, Protection of Birds Protected Under the Migratory Bird Treaty Act and Roosting Bats, and Section 3.1, Protection of Native and Non-Native Protected Trees, of Standard Construction Specification 01 35 45, have been incorporated into the Project and include measures to protect nesting birds and their habitat, impacts on special-status and common migratory birds (including the destruction of potential nesting habitat, eggs, or occupied nests, direct mortalities of young, and the abandonment of nests) would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (**Appendix E**) lists the applicable standard specification language.

<u>Operation and Maintenance</u>

While some trees would be removed within the Project footprints (86 trees removed at Walnut Creek WTP and 28 trees removed at Lafayette WTP), approximately 18 new trees would be planted at the Walnut Creek WTP and 7 new trees would be planted at the Lafayette WTP (as described in *Section 2.4.30, Screening and Landscaping*). New trees would be a combination of native coast live oak and valley oak and would provide future nesting bird habitat.

Operational lighting is described in *Section 2.6.6, Lighting*. Lighting would be required for safe maintenance access at the new structures. All lighting would match existing light poles and would consist of shielded fixtures that would be directed downward, thus minimizing potential disturbance to nesting birds. Project operations would not substantially increase vehicle trips relative to existing operation and maintenance activities at either the Walnut Creek or Lafayette WTPs. Because maintenance activities would not differ from existing conditions and because new lighting would be minimized, directed downward, and shielded, operational impacts on nesting birds would be considered less than significant.

Significance Determination Before Mitigation

Less than significant.

Mitigation Measures

None required.

Roosting Bats

Walnut Creek WTP Construction Phase 1 and 2 and Lafayette WTP Construction

Five bat species listed as California state species of concern or under CDFW's special animals list (fringed myotis, long-eared myotis, pallid bat, western small footed myotis, and Townsend's big-eared bat) could occur within the Walnut Creek and Lafayette WTPs study areas. The trees and buildings present in the study areas provide potential roosting habitat for these species.

Construction activities may result in the removal or disturbance of hibernation or maternal roost sites due to tree removal, building demolition, ground disturbance, noise, or human intrusion during the roosting season (approximately March through July) on the Project sites. This is a potentially significant impact as it may result in direct mortality and reduction in reproductive success. As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including Standard Construction Specification 01 35 45, Biological, Cultural, and Paleontological Resource Requirements, Section 3.2, Protection of Birds Protected Under the Migratory Bird Treaty Act and Roosting Bats, which requires that either construction begin outside of the bat maternity season (i.e., March 1 to July 31) or a pre-activity roosting bat survey be performed (EBMUD, 2023b). If active roosts are discovered, avoidance buffers shall be implemented as applicable. Any bats found in roosts that must be destroyed shall be safely evicted prior to site preparation activities commencing. If building demolition and vegetation removal must occur during the maternity season, EBMUD shall perform a pre-activity roosting bat survey. Depending on the results of the survey, relocation of bats by a qualified biologist in consultation with the CDFW may be warranted. Standard Construction Specification 01 35 45, Biological, Cultural, and Paleontological Resource Requirements, Section 3.1 Protection of Native and Non-Native Protected Trees, requires that trees to be removed and preserved be clearly identified. Section 3.1 also requires that work such as grading occur outside the established tree protection zone, and measures are taken to protect trees where work may occur nearby (such as protective mats, no storage of excess soil or equipment) (EBMUD, 2023b). Protective measures included in Section 3.1 would ensure that the trees outside construction footprints, which are not planned for removal, would be preserved, thus preventing loss of bat habitat.

Because Section 3.2, Protection of Birds Protected Under the Migratory Bird Treaty Act and Roosting Bats, and Section 3.1, Protection of Native and Non-Native Protected Trees, of Standard Construction Specification 01 35 45, have been incorporated into the Project, and include measures to ensure construction begins outside the bat maternity season (or survey and avoidance measures be implemented as needed), and to protect trees that are not planned for removal, harm to bats would be prevented and impacts to bat species due to Project construction would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (**Appendix E**) lists the applicable standard specifications language.

Operation and Maintenance

While some trees would be removed within the Project footprints (86 trees removed at Walnut Creek WTP and 28 trees removed at Lafayette WTP), approximately 18 new trees would be planted at the Walnut Creek WTP and 7 new trees would be planted at the Lafayette WTP (as described in *Section 2.4.30, Screening and Landscaping*). New trees would be a combination of native coast live oak and valley oak and could provide future bat roosting and foraging habitat.

Operational lighting is described in *Section 2.6.6, Lighting*. Lighting would be required for safe maintenance access at the new structures. All lighting would match existing light poles and consist of shielded fixtures that would be directed downward, thus minimizing potential disturbance to bats.

Project operations would not substantially increase vehicle trips relative to existing operation and maintenance activities at either the Walnut Creek or Lafayette WTPs. Because maintenance activities would be similar to existing conditions and because new lighting would be minimized, directed downward, and shielded, operational impacts on bat species would be considered less than significant.

Significance Determination Before Mitigation

Less than significant.

Mitigation Measures

None required.

San Francisco Dusky-Footed Woodrat

Walnut Creek WTP Construction Phase 1 and 2

The San Francisco dusky-footed woodrat, a CDFW species of special concern, has the potential to occur in the limited areas of oak woodland and riparian habitat in the Walnut Creek WTP study area. San Francisco dusky-footed woodrats inhabit woodland and shrub habitats and build large, conspicuous stick nests, known as middens, reaching up to 6 feet in height. Middens are typically made of twigs and leaves at the base of a tree, within a set of large logs or tree branches, or shrubs. No middens were observed in the Walnut Creek WTP study area.

Although construction would occur primarily outside the oak woodland and riparian areas, limited portions of the gravity thickeners construction footprint would overlap with the riparian areas at the top of the slopes (discussed further under Impact BIO-2, below). Construction activities in these areas, such as grading and tree removal, could disturb or reduce woodrat habitat. However, overlap between riparian habitat and the construction footprint is minimal and occurs at the edges of the riparian habitat. Additionally, as described above, EBMUD Standard Construction Specification 01 35 45, Biological, Cultural, and Paleontological Resource Requirements, Section 3.1, Protection of Native and Non-Native Protected Trees, contains measures to protect trees that are not to be removed (such as establishing tree protection zones), which would preserve remaining habitat.

Because construction at the Walnut Creek WTP would be located near potential woodrat habitat, woodrats, if present, could be impacted if they were to move through active work areas. During work in occupied habitat, individual woodrats that move through the work areas would be at risk of injury or mortality from foot and vehicle traffic. However, the San Francisco dusky-footed woodrat is largely nocturnal, so the species is not expected to be active in the work area during daytime construction activities. Because active construction in potential woodrat habitat would be limited, and there were no woodrats or woodrat middens observed during the field survey, and because construction activities would occur during daytime when woodrats would not be expected to move through the active work areas during the daytime, the potential for impacts to the San Francisco dusky-footed woodrat would be less than significant.

Lafayette WTP Construction

The San Francisco dusky-footed woodrat is not expected to occur within the Lafayette WTP study area due to the developed nature of the site; thus, there would be no impacts associated with construction at the Lafayette WTP.

Operation and Maintenance

Operation and maintenance of the Project would be similar to the existing activities at the Walnut Creek and Lafayette WTPs, and would include vegetation management, and tree and shrub trimming (similar to existing practices). No operation activities at the Walnut Creek WTP would impact potential woodrat habitat in oak woodland or riparian areas within the Walnut Creek WTP study area and the San Francisco dusky-footed woodrat is not expected to occur within the Lafayette WTP study area due to the developed nature of the site; therefore, impacts on the San Francisco dusky-footed woodrat associated with Project operation and maintenance would be less than significant.

Significance Determination Before Mitigation

Less than significant.

Mitigation Measures

None required.

Impact BIO-2: 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 CDFW or USFWS. (Criterion 2)

Walnut Creek WTP Construction Phases 1 and 2

The Walnut Creek WTP study area does not include any sensitive natural communities. The Walnut Creek WTP study area does include riparian habitat on the slopes of the ephemeral and intermittent creeks, as shown in **Figure 3.3-1**. The construction footprint at the Walnut Creek WTP would extend slightly into the riparian habitat in limited areas, including east of the proposed gravity thickeners and bioretention basin, and along the proposed fence north of the north access road. Five native trees (one buckeye, three coast live oaks, and one valley oak) may need to be removed in these areas in order to allow construction of the proposed facilities. Trees to be removed would be near the top of slopes because Project work is not proposed to occur within the downslope riparian areas. Potential tree removal would marginally reduce the extent of riparian habitat present within the Walnut Creek WTP study area.

Although the five trees would need to be removed within the riparian areas to accommodate proposed facilities, the other remaining trees would be preserved to the extent possible. As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including EBMUD Standard Specification 01 35 45, Section 3.1, Protection of Native and Non-Native Protected Trees, which includes provisions to ensure the protection of trees that remain during construction by installing exclusion fencing around the trees to be protected outside of tree driplines, avoiding work within the tree protection zone, careful pruning of tree roots within the excavation zone, and careful pruning of tree limbs that may be damaged by heavy equipment.

Construction activities at the Walnut Creek WTP that occur outside riparian areas also have the potential to indirectly impact riparian areas. Construction of the Project would require dewatering, grading, excavation, changes in drainage patterns, and other soil-disturbing activities on the Project site, potentially delivering increased flows, sediment, and other pollutants to the riparian community in the Walnut Creek WTP study area. An increase in flow, turbidity, and stormwater run-off entering riparian corridors is a potentially significant impact as it may result in habitat modifications affecting the value and function of the riparian habitat. As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including EBMUD Standard Construction Specification 01 35 44, Section 1.1(B), which requires control of site activities to manage surface water flows, including containing surface run-off; Section 1.4(B), requiring preparation of a Control and Disposal Plan; and Section 1.4(A), requiring preparation of a SWPPP and compliance with the Contra Costa County Stormwater Permit. The listed specifications require proper stormwater management, including, but not limited to: implementing best management practices to contain runoff; maintaining a clean site without debris that could enter riparian areas; complying with applicable construction stormwater permits; disposing properly of groundwater from dewatering; maintaining proper grading and stockpile management so that erosion is minimized and surface runoff does not enter waterways; and ensuring that stationary equipment is equipped with drip pans.

Because the Project would only remove five native trees within the riparian areas where necessary for proposed improvements and the extent of tree removal from riparian areas would be limited, and because the Project would incorporate EBMUD Standard Specification 01 35 45, Section 3.1, Protection of Native and Non-Native Protected Trees to ensure protection for existing trees that are to be preserved, and EBMUD Standard Construction Specification 01 35 44, Section 1.1(B), , Section 1.4(A), and Section 1.4(B), which would ensure that riparian areas would not be subjected to an appreciable increase in turbidity or flow as a result of soil-disturbing activities on the Project site, impacts on riparian habitat or other sensitive natural communities would be less than significant.

Lafayette WTP Construction

There are no riparian areas or sensitive natural communities present in the Lafayette WTP study area, therefore construction at the Lafayette WTP would have no impact on a riparian habitat or other sensitive natural community.

Operation and Maintenance

Project operation and maintenance would include activities such as vegetation management, and tree and shrub trimming. Project operation would be limited to developed and landscaped areas at the Walnut Creek and Lafayette WTPs. Therefore, operation and maintenance of the Project would not impact riparian habitats or sensitive natural communities and there would be no impact.

Significance Determination Before Mitigation

Less than significant.

Mitigation Measures

None required.

Impact BIO-3: 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. (Criterion 3)

Walnut Creek WTP Construction Phases 1 and 2

No wetlands are present within the Walnut Creek WTP study area (Kleinfelder, 2022b). Putnam Creek, the unnamed intermittent creeks, and the ephemeral drainage in the Walnut Creek WTP study area are subject to the CWA under the SFRWQCB jurisdiction (Section 401 of the CWA) and the USACE jurisdiction (Section 404 of the CWA) (**Figure 3.3-3**). However, there would be no facilities constructed within jurisdictional wetlands or waters of the U.S. within the Walnut Creek WTP.

Construction of the Project would require excavation, dewatering, grading changes in drainage patterns, and other soil-disturbing activities on the Walnut Creek WTP Project site, potentially delivering increased flows, sediment, and other pollutants to Putnam Creek, the unnamed intermittent creeks, and the ephemeral drainage in the Walnut Creek WTP study area. These creeks and drainages are relatively small in comparison to the larger watershed and are highly disturbed. Nevertheless, an increase in flow, turbidity, and stormwater run-off entering the creeks and drainage is a potentially significant impact as it may result in habitat modifications which could affect the habitat function of the creek areas.

As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including: EBMUD Standard Construction Specification 01 35 44, Section 1.1(B), which requires control of site activities to manage surface water flows, including containing surface run-off; Section 1.4(A) which requires submittal of a SWPPP and compliance with Contra Costa County stormwater permit requirements, and Section 1.4(B), which requires a Water Control and Disposal Plan. These measures would ensure that drainage at the site is managed with appropriate practices such as disposing of materials in approved locations, immediate cleanup of spills, minimizing erosion from stockpiles and native soil, and containing construction site runoff so that it does not drain into creeks or drainages. With these measures, Putnam Creek, the unnamed intermittent creeks, and the ephemeral drainage would not be subjected to an appreciable increase in turbidity and flow as a result of dewatering, grading, excavation, changes in drainage patterns, and other soil-disturbing activities on the Walnut Creek WTP Project site.

Because Section 1.1(B) Controls on Site Activities, Section 1.4(A) Storm Water Management, and Section 1.4(B) Water Control and Disposal Plan of EBMUD Standard Specification Section 01 35 44 have been incorporated into the Project, and include measures to require preparation and compliance with a SWPPP, maintaining an orderly construction site to prevent pollution transport, compliance with the Contra Costa County Stormwater Permit, and controls to prevent contamination associated with water disposal, the Project would have a less-than-significant impact on any state or federally protected waters. The EBMUD Practices and Procedures

Monitoring and Reporting Plan (**Appendix E**) lists the applicable standard specifications language.

Lafayette WTP Construction

No potential jurisdictional wetlands or non-wetland waters were identified in the Lafayette WTP study area. The Lafayette Reservoir is located south of the Lafayette WTP study area, and Lafayette Creek is approximately 100 feet south of the study area. As summarized in the Walnut Creek WTP discussion above, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including: EBMUD Standard Construction Specification 01 35 44, Section 1.1(B), Section 1.4(A), and Section 1.4(B). These measures would ensure that drainage at the site is managed with appropriate practices such as disposing of waste properly, responding to spills, minimizing erosion, and preventing drainage into waterways.

Because Section 1.1 (B) Controls on Site Activities, Section 1.4(A) Storm Water Management, and Section 1.4(B) Water Control and Disposal Plan of Standard Specification Section 01 35 44 have been incorporated into the Project, and include measures to require preparation and compliance with a SWPPP, maintain an orderly construction site to prevent pollution transport, comply with the Contra Costa County Stormwater Permit, and prevent contamination associated with water disposal, the Project would have a less-than-significant impact on any state or federally protected waters. The EBMUD Practices and Procedures Monitoring and Reporting Plan (**Appendix E**) lists the applicable standard specifications language.

Operation and Maintenance

Following construction, the potential for substantial runoff or erosion at the Walnut Creek WTP site that could impact waterways would be minimized. Exposed soils at the Walnut Creek WTP would be hydroseeded with EBMUD's standard hydroseed mix upon the completion of construction to prevent erosion of topsoil. In addition, because the Project would include the construction of new bioretention facilities at the Walnut Creek WTP site, enhanced drainage would help to further prevent runoff, and potential impacts to waterways would be less than significant.

Improvements at the Lafayette WTP include raising one existing weir, replacing one existing weir, and constructing new pipelines. The Lafayette WTP site would also be revegetated for erosion control/site stabilization. Exposed soils at the Lafayette WTP would be hydroseeded with EBMUD's standard hydroseed mix upon the completion of construction to prevent erosion of topsoil. Thus, impacts of runoff and erosion on waterways would be less than significant.

Because the new bioretention facilities would enhance drainage and reduce runoff at the Walnut Creek WTP, and because both the Walnut Creek and Lafayette WTPs would be revegetated, operation and maintenance of the Project would not create a substantial adverse effect on state or federally protected wetlands or jurisdictional non-wetland waters, and the impact is less than significant.

Significance Determination Before Mitigation

Less than significant.

Mitigation Measures

None required.

Impact BIO-4: 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. (Criterion 4)

Walnut Creek WTP Construction Phases 1 and 2

As described in *Section 3.3.3, Environmental Setting,* the Walnut Creek WTP study area would not be considered a wildlife corridor. The Walnut Creek WTP study area is highly developed with paved roads and landscaped vegetation, with some non-native grassland and limited woodland areas near creeks. Putnam Creek, the unnamed intermittent creek, and the ephemeral drainage channel are all highly disturbed and would not provide movement corridors for fish or wildlife species. Because the Walnut Creek WTP study area is highly developed and surrounded on three sides by residential development, it would not serve as a wildlife corridor.

Tree canopies in the Walnut Creek WTP study area could serve as nest sites for birds; potential impacts on nesting birds are analyzed in Impact BIO-1. As described under Impact BIO-1, above, and detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including Standard Construction Specification 01 35 45, Biological, Cultural, and Paleontological Resource Requirements, Section 3.2, Protection of Birds Protected Under the Migratory Treaty Act and Roosting Bats, which includes provisions for preconstruction biological reconnaissance, including nesting bird surveys, biologic monitoring during construction, and delineation of active bird nest avoidance buffer zones.

Because the Walnut Creek WTP study area is not a wildlife corridor, and because Standard Construction Specification 01 35 45, Biological, Cultural, and Paleontological Resource Requirements, Section 3.2, would reduce impacts to birds that may nest in the study area by requiring that nest sites be identified and avoided, the impact would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (**Appendix E**) lists the applicable standard specification language.

Lafayette WTP Construction

As described in *Section 3.3.3, Environmental Setting,* the Lafayette WTP study area would not be considered a wildlife corridor because it is highly developed, consisting mainly of paved roads and buildings.

Tree canopies in the Lafayette WTP study area could serve as nest sites for birds; potential impacts on nesting birds are analyzed in Impact BIO-1. As described under Impact BIO-1, above, and detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including Standard Construction Specification 01 35 45, Biological, Cultural, and Paleontological Resource Requirements, Section 3.2, Protection of Birds Protected Under the Migratory Treaty Act and Roosting Bats, which includes provisions for preconstruction biological reconnaissance, including nesting bird surveys, biologic monitoring during construction, and delineation of active bird nest avoidance buffer zones.

Because the Lafayette WTP study area is not a wildlife corridor, and because Standard Construction Specification 01 35 45, Biological, Cultural, and Paleontological Resource

Requirements, Section 3.2, would reduce impacts to birds that may nest in the study area by requiring that nest sites be identified and avoided, the impact to wildlife corridors or nursery sites would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (**Appendix E**) lists the applicable standard specification language.

Operation and Maintenance

Project operation and maintenance would be limited to disturbed areas at the Walnut Creek and Lafayette WTPs. Neither site is considered a wildlife corridor. Thus, operational activities would not interfere with the movement of fish or wildlife or their use of nursery sites; there would be no impact.

Significance Determination Before Mitigation

Less than significant.

Mitigation Measures

None required.

Impact BIO-5: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. (Criterion 5)

Construction, Operation and Maintenance

The Project is consistent with policies contained in the City of Walnut Creek General Plan and City of Lafayette General Plan. Goal 1 of the Walnut Creek General Plan's Natural Environment and Public Space chapter is to maintain and enhance open space lands, and Goal 3 aims to maintain and restore creek systems and riparian environments. Project work at the Walnut Creek WTP would take place entirely within the boundary of the water treatment plant and would not affect public lands in Walnut Creek that are currently dedicated to open space use. As discussed in Impact BIO-3, the proposed bioretention areas would provide treatment and infiltration of stormwater from new impervious areas at the Walnut Creek WTP. Thus, construction activities at the Walnut Creek WTP would not impact creeks or riparian habitat in the study area. The Project would be consistent with goals and policies in the Walnut Creek General Plan.

The Project is also consistent with the Lafayette General Plan. Goal LU-2 of the General Plan states that the scenic qualities of ridgelines, hills, creek areas, and trees should be preserved. Similarly, Goal OS-4 and associated policies are intended to preserve areas with important biotic resources such as riparian vegetation, ridgelines, and woodlands. Goal OS-5 focuses on preservation and protection of creeks and streams. The Project work at the Lafayette WTP would not impact the natural topography of the area, nor would work impact nearby creek areas (as discussed in Impact BIO-3). Therefore, the Project would be consistent with Goal LU-2, OS-4, and OS-5.

Tree removal is necessary for Project construction at both the Walnut Creek WTP and Lafayette WTP. Of the approximately 189 existing trees within the Walnut Creek WTP arborist study area, approximately 86 would be removed to accommodate Project construction, 74 of which are considered "protected" by the Walnut Creek Municipal Code, and 45 of which are considered "highly protected" (Insignia Environmental, 2021). While the Walnut Creek Municipal Code does not have a tree replacement requirement, approximately 18 new native oak trees (24-inch box) would be planted to the northwest of the gravity thickeners for visual screening, resulting in a total of 121 trees within the Walnut Creek study area after construction is complete. Furthermore, the Project proposes the addition of a bioretention area with native plantings, which would serve the proposed improvements. The bioretention area would be designed to be consistent with the Costa Clean Water Program, Provision C.3 of the Municipal Regional Permit for stormwater discharges.

Of the approximately 59 existing trees within the Lafayette WTP arborist study area, approximately 28 would be removed to accommodate Project construction, 18 of which are considered "protected" according to the Lafayette Municipal Code (Insignia Environmental, 2022). The City of Lafayette Tree Preservation Ordinance 6-1707(G)(1) requires replacement of protected trees at a 2:1 ratio, and seven new native oak trees (24-inch box) would be planted within the Project at Lafayette WTP due to limitations of the existing site conditions. Ordinance 6-1707(G)(4) allows for a smaller number of trees to be replaced due to Project site conditions and if that reduction will be beneficial to the health and vigor of other protected trees on the property. Due to the site constraints (i.e., built out site with little opportunity for new landscaping) and to protect the health and vigor of the existing trees, only 7 new native oak trees would be planted at the Lafayette WTP site, which is consistent with the Tree Ordinance. After the new tree planting, there will be 38 trees within the Lafayette WTP arborist study area after construction is complete.

Construction activities at the Walnut Creek WTP and Lafayette WTP may adversely affect retained trees by potential incidental damage, altered hydrology, and soil compaction within the root zone (generally beneath the dripline of the canopy). As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including EBMUD Standard Specification 01 35 45, Section 3.1, Protection of Native and Non-Native Protected Trees, which includes provisions to ensure the protection of trees that remain during construction by installing exclusion fencing around the trees to be protected outside of tree driplines, avoiding work within the tree protection zone, careful pruning of tree roots within the excavation zone, and careful pruning of tree limbs that may be damaged by heavy equipment.

The Project would only remove trees where necessary for proposed improvements. The maximum number of protected trees would be replaced that could be spaced appropriately within the disturbed area, and tree replacement would be consistent with the tree ordinance for Lafayette that allows for a smaller number of trees to be replaced due to Project site conditions and if that reduction will be beneficial to the health and vigor of other protected trees on the property. The Project would incorporate EBMUD Standard Specification 01 35 45, Section 3.1, Protection of Native and Non-Native Protected Trees to ensure protection for existing trees that are to be preserved. The EBMUD Practices and Procedures Monitoring and Reporting Plan (**Appendix E**) lists the applicable standard specification language.

Significance Determination Before Mitigation

Less than significant.

Mitigation Measures

None required.

Cumulative Impact Analysis

This section presents an analysis of the cumulative effects of the Project in combination with other present and reasonably foreseeable future projects that could cause cumulatively considerable impacts on biological resources.

As described above, the Project would not conflict with the provisions of an adopted HCP, NCCP, or other local, regional, or state habitat conservation plan. Accordingly, the Project would not contribute to cumulative impacts related to this topic, which are not described further.

Sixteen projects are planned within the general vicinity of the Project sites, including three EBMUD projects that could potentially overlap with the Project's proposed construction time frame. Please refer to **Table 3.0-1** for a comprehensive list of potential projects planned for construction within the general vicinity of the Project sites. For the purposes of the cumulative analysis, projects that could present cumulatively considerable impacts related to biological resources are those that involve visual or noise disturbance, soil or drainage disturbance, riparian or wetland disturbance, or tree removal during construction in proximity to and in a similar time frame as construction of the Project. Of the 16 projects planned to occur within the general vicinity of the Project sites, three would be located within 1 mile of either the Walnut Creek or Lafayette WTPs Project sites and could overlap with the Project construction timeframe.

The three projects are the Larkey Pumping Plant Rehabilitation at the Walnut Creek WTP, Lafayette No. 1 Aqueduct Relining from south of Quandt Road to west of Lafayette WTP, and Lafayette WTP Interim Disinfection and Residuals Improvements. All three projects are EBMUD projects and therefore, these projects would be required to protect potentially present sensitive biological resources through implementation of EBMUD Standard Construction Specification 01 35 45, which requires controls on stormwater management and protection of trees, nesting birds, and bats, as referenced in this section. These projects would include ground-disturbing activities to improve various water treatment and delivery infrastructure in areas that have been previously disturbed and are routinely exposed to a high level of human activity.

The geographic area affected by the Project and its potential to contribute to cumulative impacts on biological resources are limited to the Walnut Creek and Lafayette WTPs study areas. The area surrounding the Walnut Creek WTP study area includes developed residential areas and open space. The Lafayette WTP study area is bounded by Mt. Diablo Boulevard to the south and west, Temple Isaiah to the east, and State Route 24 to the north. The impacts on biological resources in the Walnut Creek and Lafayette WTPs study areas are minor, as they take place over a relatively small area, over a short duration of time, and are offset by EBMUD Standard Specifications included in the Project Description. During the construction phase, impacts on biological resources associated with the Project include potential disturbance to nesting birds and roosting bats (if present), and a minor reduction in habitat available for nesting birds and roosting bats as a result of tree removal during construction. When combined with potential construction impacts of other projects in the vicinity, these effects would be less than significant given implementation of EBMUD Standard Construction Specification 01 35 45 Section 3.1 and Section 3.2 which include measures to identify and avoid nesting birds and roosting bats. Accordingly, impacts on nesting birds and roosting bats, and their habitat as a result of tree removal, would be spatially limited, and measures would be taken to preserve trees to be retained.

Construction impacts on riparian areas (including Putnam Creek, the unnamed intermittent creeks, and the ephemeral drainage in the Walnut Creek WTP study area) associated with dewatering, grading, excavation, changes in drainage patterns, and other soil-disturbing activities would be limited in time and space. During Project operation, bioretention facilities at the Walnut Creek WTP site would provide enhanced drainage to prevent runoff impacts on the downstream riparian and wetland communities. Thus, Project operation and maintenance would not present significant adverse impacts or accumulate additional impacts that, when combined with impacts of other projects constructed close to the Project, would be cumulatively considerable.

During both the construction and operational phases, the activities proposed at the Project sites and riparian areas in the Walnut Creek WTP study area would not substantially interfere with the movement of wildlife species or impede the use of wildlife nursery sites, as construction impacts would take place over a relatively small area, over a short duration of time, and are offset by EBMUD Standard Specifications included in the Project Description which require identification and avoidance of wildlife nursery sites (i.e., nesting birds and roosting bats).

Therefore, impacts on biological resources in the Walnut Creek and Lafayette WTPs study areas would not considerably contribute to cumulative effects relative to biological resources when taking into consideration the effects from nearby cumulative projects.

3.3.6 References

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3.4 Cultural Resources

This section describes the physical, environmental, and regulatory setting for cultural resources relevant to the Project, identifies the significance criteria for determining environmental impacts and evaluates the potential impacts on cultural resources that could result from implementation of the Project. Cultural resources include architectural resources, prehistoric and historic-era archaeological resources, human remains, and tribal cultural resources.

3.4.1 Environmental Setting

Cultural Setting

Natural Setting

The Project area is situated in a small inland valley in what is geographically known as the East San Francisco Bay (East Bay) area. The cities of Walnut Creek and Lafayette are separated from the San Francisco Bay by the Oakland/Berkeley Hills, a sub-range of the Pacific Coast Ranges. The geography of the region is characterized by a sequence of inland hills, ridges, and valleys that descend in elevation eastward to a broad north/south trending valley where the cities of Walnut Creek and Concord are located. A network of large and small creeks draining the east side of the Oakland/Berkeley Hills has filled valleys and crevices with sediment.

Contra Costa County encompasses a wide range of natural environments from the bayshore to river deltas and valleys to mountain ranges and low hills. The rich environment has contributed to and reflects the adaptations and structure of the complex cultural record. Prior to human settlement, the Project sites and vicinity consisted of a variety of natural environments ranging from the open waters of the bay to salt and brackish marshes, to chaparral and oak woodlands. Habitat types in the general vicinity included annual grasslands, coastal scrub, riparian corridors, and emergent wetlands. The overall Northern California climate is Mediterranean in nature, and is characterized by warm, dry summers and cool, wet winters with the bulk of precipitation occurring as rain in the winter months. The East Bay interior valleys, where water and other essential resources were in abundance, were ideal settings for permanent prehistoric villages and a variety of cultural activities.

Prehistoric Context

Cultural resources are traces of human occupation and activity. In northern and central California, known cultural resources extend back in time for at least 9,000 to 11,500 years with Native American occupation and use of central California extending over 5,000 to 8,000 years and possibly longer. Archaeologists have developed individual cultural chronological sequences tailored to the archaeology and material culture of each subregion of California. Chronological sequences for individual California subregions have been interpreted based principally on the presence of distinctive cultural traits and stratigraphic separation of deposits. Human history in California is divided into three periods: the Early Period (4050–2450 B.P.), the Middle Period (2450–685 B.P.), and the Late Period (685 B.P.–1800) (Kleinfelder, 2022).

Archaeological information for present-day Contra Costa County suggests an increase in Native populations and settlements over time, along with the evidence of increasing sedentism, cultural complexity, and systems of exchange. During the Early Period, the high frequency of mortars and pestles indicates a shift to a more intensive subsistence strategy. The change in strategy, along with shellfish harvesting along the bayshore, likely allowed for a more sedentary lifestyle. Overall, the technologies that are visible in the archaeological record during the Early Period became more highly specialized during the Middle Period. New types of tools and widely traded goods illustrate the increase in craft specialization and interregional exchange. The Late Period is characterized by an increase in Native populations and settlements, a regularized exchange system, and greater evidence of ceremonialism. Distinctive artifacts illustrate the introduction and spread of the bow and arrow, along with bone awls used in basketry, clay effigies, elaborately incised bone whistles, and flanged soapstone pipes (Kleinfelder, 2022).

Ethnographic Context

The area around Lafayette and Walnut Creek is believed to have been the territory of a tribelet[1] identified in mission records as Saclan. Ethnographers assigned the Saclan people to the Costanoan language group. However, a reexamination of a vocabulary list collected by Spanish Missionary Arroyo de la Cuesta at Mission Delores led to the understanding that the Saclan language was actually part of the Miwok branch of the Utian language family. The Saclan language, along with those of other tribelets in eastern Contra Costa County, are closely related to Plains Miwok and have been described in ethnographic literature as Bay Miwok. In addition, the Northern Valley Yokut's territory encompassed the eastern facing slopes of the Coast Range, therefore making the neighboring groups interconnected through marriage, trade, and long-term relationships. (Kleinfelder, 2022)

During the missionization of the San Francisco Bay Area tribes from 1769 to 1810, the majority of Saclan baptisms took place at Mission San Francisco between 1794 and 1802. Little is known of specifically Bay Miwok ethnography, although their culture was likely similar to the neighboring Ohlone and Plains Miwok groups with whom they interacted and intermarried. After European contact, native societies of the San Francisco Bay Area were severely disrupted by missionization, disease, and displacement. Members of the modern-day Nototomne Cultural Preservation Group of Ohlone trace their ancestry through mission records to the Bay Miwok and Ohlone peoples, as well as the Northern Valley Yokuts. There is one federally recognized tribe currently in Contra Costa County, the Lytton Band of Pomo Indians, located in San Pablo, California (BIA, 2022).

Historic Background

The history of the general Bay Area can be divided into the Age of Exploration, the Hispanic Period (Spanish Period 1769-1821 and the Mexican Period 1822-1848), and the American Period (1848-present).

The historic exploration of the East Bay area occurred between 1769 and 1776, when a number of Spanish expeditions passed through the Costanoan territory during the exploration of California. During the Hispanic Period, Spanish government policy in northwestern New Spain was directed at the founding of presidios (forts), missions, and pueblos (secular towns). After Mexico won independence from Spain in 1821, large tracts of land in California were granted to military heroes and loyalists. Among the land grants were grants encompassing areas of modern-day Walnut Creek and Lafayette (Walnut Creek Historical Society, 2022; Lafayette Historical

[1] A tribelet constituted a sovereign entity that held a defined territory and exercised control over its resources. A tribelet was also a unit of linguistic and ethnic differentiation.

Society, 2022). The Walnut Creek WTP site is located on the former Rancho Las Juntas land grant and the Lafayette WTP is located on the former Rancho Acalanes land grant.

The American Period began in 1848 when California entered the Union as a territory by the Treaty of Guadalupe Hidalgo that ended the Mexican War of 1846-1847. The Gold Rush (1848-1855) and California statehood (1850) led to a population boom, which brought miners, businessmen, lumbermen, and other speculators in search of opportunities. Contra Costa County was incorporated in 1850 as one of the original 27 counties of the State of California, with the City of Martinez as the County Seat (Contra Costa County, 2022). Land use during the early American historic period consisted mostly of ranching and farming enterprises, which have been displaced by urban and suburban developments in modern-day Contra Costa County.

East Bay Municipal Utility District

Several East Bay water companies were in existence as early as the 1860s. Among them were the Contra Costa Water Company, Syndicate Water Company, and Richmond Water Company. In 1906, the three companies were absorbed by the People's Water Company. Land was purchased and the area surrounding many creeks was developed for use as reservoirs, aqueducts, and mains to serve parts of Alameda and Contra Costa counties. In 1917, the People's Water Company was purchased by the East Bay Water Company.

EBMUD was formed on May 8, 1923, the product of a bond issue passed by the voters of Oakland, Berkeley, Alameda, Emeryville, Albany, San Leandro, and El Cerrito. Richmond and Piedmont would later become part of the system. EBMUD was formed under the California Municipal Utilities District Act, which permitted the formation of multipurpose government agencies to provide public services on a regional basis. EBMUD engineers Arthur Powell Davis, General Goethals, and William Mulholland selected the Mokelumne River as the water supply source and Lancha Plana, in the Sierra Nevada mountains, as the site for the reservoir.

In 1928, five years after EBMUD was formed, a $26 million bond was used to purchase the existing facilities of the East Bay Water Company. With the facilities came 40,000 acres of land in Alameda and Contra Costa Counties and all of the East Bay Water Company's previously completed reservoirs and treatment plants. By 1930, EBMUD was serving 35 million gallons per day to a population of 460,000 (EBMUD 2019).

Walnut Creek WTP Site

The City of Walnut Creek saw rapid growth during the 1960s, which necessitated additional water resources. The Walnut Creek WTP was designed by the firm of Hardison and Komatsu with landscaping designed by the firm of Royston, Hanamoto, Mayes, and Beck. The Walnut Creek WTP was initially constructed in 1967 and has subsequently been expanded multiple times to meet water demands and operational requirements. Extant buildings from the original construction include the Operations Building, the water filters to the north and south of the Operations Building, the Blower Building, the Larkey Pumping Plant, and the Shops Building. The buildings generally display Modern style architecture, while the structures are largely utilitarian in design. Between 1968 and 1980, the facility significantly expanded to the north and west, with the construction of additional buildings and structures. Further expansion continued to the west between 2002 and 2004 with the removal of existing buildings, which were replaced with the large circular clearwell and the circular chlorine contact chamber (Kleinfelder, 2022).

Lafayette WTP Site

The Lafayette Screening Chamber and Pump House (now called the Bryant #2 Pumping Plant) was constructed in 1927, contemporaneously with the Lafayette Reservoir Dam (located immediately southwest and across Mt. Diablo Boulevard from the Lafayette WTP). Bryant #2 Pumping Plant was constructed adjacent to the Lafayette Aqueduct, also completed in 1927, and was designed to pump water from the aqueduct into the Lafayette Reservoir. Water from the reservoir could also be pumped through the Bryant #2 Pumping Plant and its screening chambers into the aqueduct for distribution further down the line. The two-story Art Deco-style facility was designed by EBMUD engineer H.A. Knudsen in 1926. The adjacent Lafayette Weir No. 1 was constructed in 1939 within the Lafayette Aqueduct, as a later addition to the facility (Kleinfelder, 2022).

The current Lafayette WTP was constructed in 1953 and incorporates the Bryant #2 Pumping Plant and the associated Lafayette Weir No 1. Water treatment plant facilities were designed in an industrial-modern architectural style with an expansion in 1960 and later renovations and additions in the early 1990s. The original contract for construction was awarded to Bos Construction Company. However, by 1953, the firm of Elmer J. Freethy was conducting the work (Kleinfelder, 2022).

Existing Conditions

Northwest Information Center Database Search

On July 5, 2022, Kleinfelder Inc. (Kleinfelder) staff conducted an archival records search of the Project sites and immediate vicinity at the Northwest Information Center (NWIC) at Sonoma State University (NWIC #22-0005). The NWIC is the California Historical Resources Information System (CHRIS) repository housing records for Contra Costa County. The study area for the records search included the Walnut Creek WTP and Lafayette WTP and areas within 0.25 miles of each. The records search included a review of cultural resource and excavation reports and recorded cultural resources.

The objectives of the records search were to: (1) determine whether known historic-era architectural resources have been recorded within or adjacent to the Project sites, and whether known archaeological resources have been recorded within a 0.25 miles of the Project sites; (2) assess the likelihood of unrecorded cultural resources in the Project sites and vicinity based on historical references and the distribution of environmental settings of nearby sites; and (3) develop a context for the identification and preliminary evaluation of cultural resources.

The records search indicated that while three previously recorded studies have been conducted within 0.25 miles of the Walnut Creek WTP Site and two previously recorded studies have been conducted within 0.25 miles of the Lafayette WTP site, none of the previous studies include or cross any portion of the Project components.

One previously recorded resource (1728 San Luis Road, P-07-004815) is located within 0.25 miles of the Walnut Creek WTP site, and one previously recorded resource (the historic Temple Isaiah of Contra Costa County, P-07-004503) is located within 0.25 miles of the Lafayette WTP Site. No previously recorded resources are located within the Walnut Creek WTP or Lafayette WTP Project sites themselves. The Walnut Creek WTP and Lafayette WTP are considered to have a low sensitivity for archaeological cultural sites and materials based on archival research.

Field Reviews

Kleinfelder conducted intensive pedestrian cultural resource surveys of the Walnut Creek WTP on March 2, 2022, and of the Lafayette WTP on July 12, 2022.

The Walnut Creek WTP site field review covered the entire proposed work area at the Walnut Creek WTP, totaling approximately 31.15 acres. The majority of the survey area was located within open grassland without standing buildings or structures. The Walnut Creek WTP contains buildings and structures that meet the 45-year age threshold for consideration as a historical resource, including the Operations Building, raised filter tanks, Blower Building, Larkey Pumping Plant, and Shops Building. No cultural materials were observed at the time of survey. The Walnut Creek WTP is considered to have a low sensitivity for archaeological cultural sites and materials because no cultural materials were observed during a systematic field inventory.

The Lafayette WTP site field review covered the entire proposed work area at the Lafayette WTP, totaling approximately 24 acres. Most of the survey areas for the Lafayette WTP are located in the developed portion of the WTP. Much of the Project area is covered with asphalt, with exposed soils observed on a hillside located between Lafayette Weir No. 2 and a parking lot used for pumping generators. Both Lafayette Weir No. 1 and the Bryant #2 Pumping Plant have achieved the 45-year age threshold for consideration as a historical resource. A single aquamarine glass fragment and brown glass bottle from Owens-Illinois dating to post-1954 was noted in the area south of Lafayette Weir No. 2, where trees would be removed and a U-shaped pipeline installed for the Project. Exposed soil in the area south of Lafayette Weir No. 2 was noted to consist of fill, and the historic fragments were mixed with concrete and rebar fragments and pieces of plastic. While Lafayette Weir No. 2 is a newer structure and not considered historic, the soils below the asphalt could not be analyzed to determine if cultural deposits exist subsurface. No further cultural deposits were noted in the area of Lafayette Weir No. 2. The Lafayette WTP is considered to have a low sensitivity for archaeological cultural sites and materials because no cultural materials were observed during a systematic field inventory.

California Register of Historical Resources

The buildings and structures present within the Walnut Creek WTP and Lafayette WTP Project sites were evaluated for listing in the California Register of Historical Resources according to the significance criteria and integrity considerations outlined in Public Resources Code (PRC) Section 5024.1 (see *Section 3.4.2, Regulatory Framework*, below). Kleinfelder identified two potential historical built environment resources, the Walnut Creek WTP as a whole and the Bryant #2 Pumping Plant (located at the Lafayette WTP). Both facilities meet the 45-year age threshold for consideration as a historical resource.

The following criteria are specific to the California Register and used to establish baseline environmental conditions; they are not indicative of CEQA significance.

Walnut Creek WTP

Archival research and field review failed to indicate that the Walnut Creek WTP was 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 (California Register of Historical Resources Designation Criterion 1). While the existence of the facility was necessary for community growth, research has yielded no information to suggest that the Walnut Creek WTP was significantly associated with the broad patterns of history beyond its basic function as necessary infrastructure for the operation of the communities served by the Walnut Creek WTP.

There is no information to suggest that the facility is specifically associated with themes or patterns of local or regional history or heritage; therefore, the Walnut Creek WTP is not eligible for the California Register under Criterion 1.

Archival research and field review also failed to indicate that the engineers who designed the Walnut Creek WTP were significant persons in local, state, or national history (California Register of Historical Resources Designation Criterion 2). No significant associations between the Walnut Creek WTP and any other noteworthy individuals in history were identified; therefore, the Walnut Creek WTP is not eligible for the California Register under Criterion 2.

The Walnut Creek WTP does not rise to the level of distinction needed for eligibility for the California Register under Criterion 3. The facility was designed by the firm Hardison and Komatsu with landscaping designed by Royston, Hanamoto, Mayes, and Beck. While both firms were very accomplished and had made contributions to the built environment and landscaped environment of the Bay Area, the Walnut Creek WTP is not considered a masterful example of either firm’s work when taking into consideration their larger bodies of work. The Walnut Creek WTP represents a minor project for both firms, and in the case of Hardison and Komatsu, a virtual replication of an earlier work (the 1962 Sobrante Filter Plant). Further, the facility has undergone significant changes over time affecting both the buildings and landscaping to the point that the facility no longer resembles its original 1967 appearance. Research has also yielded no information to suggest that the extant filtration systems represented a significant departure from processes previously used in water filtration; therefore, the Walnut Creek WTP is not eligible for the California Register under Criterion 3.

Lastly, the Walnut Creek WTP does not have the potential to yield additional information about prehistory or history. It is unlikely that the Walnut Creek WTP property has the potential to broaden our understanding of 20th century water filtration systems or the development of Walnut Creek, California, or the United States and, therefore, the Walnut Creek WTP is not eligible for the California Register under Criterion 4.

Based on the results of the evaluation, the Walnut Creek WTP is not eligible for listing in the California Register and, therefore, does not qualify as a historical resource for the purposes of CEQA.

Bryant #2 Pumping Plant (Lafayette WTP)

Archival research and field review indicates that Bryant #2 Pumping Plant at the Lafayette WTP meets the California Register Criterion 1 for association with events that have made a significant contribution to the broad patterns of history and cultural heritage. The facility was constructed in 1927 as part of EBMUD’s initial development of EBMUD’s Mokelumne River/Aqueduct Project. The Bryant #2 Pumping Plant is one of the few extant facilities that date from the 1920s and conveys the historical significance of early water infrastructure in the region. Therefore, the Bryant #2 Pumping Plant is eligible for the California Register under Criterion 1. The adjacent Lafayette Weir No. 1 was constructed in 1939 and, as a later addition to the facility, does not convey the same historical significance as the Bryant #2 Pumping Plant.

Archival research and field review failed to indicate that the engineers who designed the Bryant #2 Pumping Plant were significant persons in local, state, or national history (California Register of Historical Resources Designation Criterion 2). No significant associations between the Bryant #2 Pumping Plant and any other noteworthy individuals in history were noted; therefore, the Bryant #2 Pumping Plant is not eligible for the California Register under Criterion 2.

The Bryant #2 Pumping Plant meets California Register Criterion 3 for embodying the distinctive characteristics of a type, period, and method of construction, or as the work of an important creative individual, or as having high artistic value. The facility was designed by EBMUD engineer H.A. Knudsen in the Art Deco style. The Bryant #2 Pumping Plant exhibits many of the character-defining features of Art Deco architecture as applied to water infrastructure in the early 20th century. Therefore, the Bryant #2 Pumping Plant is eligible for the California Register under Criterion 3. The adjacent Lafayette Weir No. 1 was constructed in 1939 and, as a later addition to the facility, does not convey the same historical significance as the Bryant #2 Pumping Plant. Research has yielded no information to suggest that Lafayette Weir No. 1 represents a departure from standard weir design and operation from the period of its construction.

Lastly, the Bryant #2 Pumping Plant does not have the potential to yield additional information to prehistory or history. It is unlikely that the property has the potential to broaden our understanding of 20th century water filtration systems or the development of Lafayette, California, or the United States and, therefore, is not eligible for the California Register under Criterion 4.

Although there are many pumping plants in the EBMUD system, the Bryant #2 Pumping Plant appears to be one of the oldest and has retained a high level of overall physical integrity. The California Register recognizes a property's historic integrity through seven aspects or qualities. The seven aspects or qualities include location, design, setting, materials, workmanship, feeling, and association. The Bryant #2 Pumping Plant retains integrity of location, design, materials, workmanship, feeling, and association. The integrity of the setting has been compromised due to the expansion of the facility over time.

Based on the results of the evaluation, the Bryant #2 Pumping Plant is eligible for listing in the California Register under Criterion 1 for its association with the initial development of EBMUD's Mokelumne River/Aqueduct Project and Criterion 3 as a good example of Art Deco architecture and, therefore, qualifies as a historical resource for the purposes of CEQA.

Native American Outreach

On January 3, 2022, EBMUD contacted the Native American Heritage Commission (NAHC) for a review of the Sacred Land Files and to generate a list of tribal contacts for additional outreach. A response was received from the NAHC on January 21, 2022, that provided a list of Contra Costa County Native American contacts. EBMUD contacted the 11 Native American representatives by letter on February 28, 2022 informing them of the Project. Follow-up letters to the Native American representatives were made on July 19, 2022 to clarify that the Sacred Lands File check was positive for the Project. Additional information can be found in *Section 3.14 Tribal Cultural Resources*.

3.4.2 Regulatory Framework

This section describes federal, state, and local policies and regulations related to cultural resources that may apply to the Project.

Federal Policies and Regulations

National Historic Preservation Act of 1966, as Amended

Cultural resources are considered through the National Historic Preservation Act (NHPA) of 1966, as amended (54 United States Code [U.S.C.] Section 307103), and its implementing regulation, Protection of Historic Properties (36 Code of Federal Regulations [CFR] Part 800), the Archaeological and Historic Preservation Act of 1974, and the Archaeological Resources Protection Act of 1979. Prior to implementing an "undertaking" (e.g., issuing a federal permit), Section 106 of the NHPA requires federal agencies to consider the effects of the undertaking on historic properties and to afford the Advisory Council on Historic Preservation and the State Historic Preservation Officer a reasonable opportunity to comment on any undertaking that would adversely affect properties eligible for listing in the National Register. As indicated in Section 101(d)(6)(A) of the NHPA, properties of traditional religious and cultural importance to a tribe are eligible for inclusion in the National Register. Under the NHPA, a resource is considered significant if it meets the National Register listing criteria (36 CFR Section 60.4).

National Register of Historic Places

The National Register was established by the NHPA as "an authoritative guide to be used by federal, state, and local governments, private groups and citizens to identify the Nation's historic resources and to indicate what properties should be considered for protection from destruction or impairment" (36 CFR Section 60.2). The National Register recognizes both historic-era and prehistoric archaeological properties that are significant at the national, state, or local levels.

To be eligible for listing in the National Register, a resource must be significant in American history, architecture, archaeology, engineering, or culture. Districts, sites, buildings, structures, and objects of potential significance must meet one or more of the following four established criteria (U.S. Department of the Interior, 1995):

A. Are associated with events that have made a significant contribution to the broad patterns of our history;

B. Are associated with the lives of persons significant in our past;

C. Embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. Have yielded, or may be likely to yield, information important in prehistory or history.

Unless the property possesses exceptional significance, it must be at least 50 years old to be eligible for National Register listing (U.S. Department of the Interior, 1995).

In addition to meeting the criteria of significance, a property must have integrity. Integrity is defined as "the ability of a property to convey its significance" (U.S. Department of the Interior, 1995). The National Register recognizes seven qualities that, in various combinations, define integrity: location, design, setting, materials, workmanship, feeling, and association. To retain historic integrity, a property must possess several, and usually most, of these seven aspects. The retention of the specific aspects of integrity is paramount for a property to convey its significance.

State Policies and Regulations

California Environmental Quality Act

Under CEQA (PRC Section 21084.1), a project would have a significant effect on the environment if it would cause a substantial adverse change in the significance of a historical resource. The CEQA Guidelines (14 California Code of Regulations [CCR] Section 15064.4) recognize that a historical resource includes: (1) a resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register; (2) a resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); and (3) any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the lead agency's determination is supported by substantial evidence in light of the whole record. The fact that a resource does not meet the three criteria outlined above does not preclude the lead agency from determining that the resource may be a historical resource as defined in PRC Section 5020.1(j) or 5024.1.

If a lead agency determines that an archaeological site is a historical resource, then the provisions of PRC Section 21084.1 and CEQA Guidelines Section 15064.4 apply. If a project may cause a substantial adverse change (defined as physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired) in the significance of a historical resource, then the lead agency must identify potentially feasible measures to mitigate these effects (14 CCR Section 15064.4[b][1], 15064.4[b][4]).

If an archaeological site does not meet the historical resource criteria contained in the CEQA Guidelines, then the site may be treated in accordance with the provisions of Section 21083, which is a unique archaeological resource. As defined in PRC Section 21083.2, a "unique" archaeological resource is an archaeological artifact, object, or site, for which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information;
- Has a special and particular quality such as being the oldest of its type or the best available example of its type; or
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

If an archaeological site meets the criteria for a unique archaeological resource as defined in PRC Section 21083.2, then the site is to be treated in accordance with the provisions of PRC Section 21083.2, which state that if the lead agency determines that a project would have a significant effect on unique archaeological resources, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place (PRC Section 21083.1[a]). If preservation in place is not feasible, mitigation measures shall be required.

If an archaeological resource is neither a unique archaeological nor a historical resource, then the effects of the project on those resources shall not be considered a significant effect on the environment (14 CCR Section 15064.4[c][4]).

California Register of Historical Resources

Created in 1992 and implemented in 1998, the California Register is "an authoritative guide in California to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change." Certain properties, including those listed in, or formally determined eligible for listing in, the National Register and California Historical Landmarks numbered 770 and higher, automatically are included in the California Register. Other properties recognized under the California Points of Historical Interest Program, identified as significant in historic resources surveys or designated by local landmarks programs, may be nominated for inclusion in the California Register. A resource, either an individual property or a contributor to a historic district, may be listed in the California Register if the State Historical Resources Commission determines that it meets one or more of the following criteria, which are modeled on National Register criteria:

1. 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 (Criterion 1).
2. Associated with the lives of persons important to local, California or national history (Criterion 2).
3. Embodies the distinctive characteristics of a type, period, region or method of construction or represents the work of a master or possesses high artistic values (Criterion 3).
4. Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California or the nation (Criterion 4).

Furthermore, under state law (PRC Section 5024.1; 14 CCR Section 4852[c]), a cultural resource must retain integrity to be considered eligible for the California Register. Specifically, it must retain sufficient character or appearance to be recognizable as a historical resource and convey reasons of significance. Integrity is evaluated with regard to retention of such factors as location, design, setting, materials, workmanship, feeling, and association.

Typically, an archaeological site in California is recommended eligible for listing in the California Register based on its potential to yield information important in prehistory or history (California Register of Historical Resources Designation Criterion 4). Important information includes chronological markers such as projectile point styles or obsidian artifacts that can be subjected to dating methods, or undisturbed deposits that retain their stratigraphic integrity. Sites such as these have the ability to address research questions. However, archaeological sites may also be recommended eligible under California Register Criteria 1, 2, and/or 3.

California Public Resources Code and Health and Safety Code

Native American Heritage Commission

PRC Section 5097.91 established the NAHC, the duties of which include inventorying places of religious or social significance to Native Americans and identifying known graves and cemeteries of Native Americans on private lands. PRC Section 5097.98 specifies a protocol to be followed when the NAHC is notified by a county coroner of a discovery of Native American human remains.

California Health and Safety Code Sections 7050 and 7052

California Health and Safety Code Section 7050.5 declares that, in the event of the discovery of human remains outside of a dedicated cemetery, all ground disturbance must cease, and the county coroner must be notified. California Health and Safety Code Section 7052 establishes a felony penalty for mutilating, disinterring, or otherwise disturbing human remains, except by relatives.

Local Policies and Regulations

Under Section 53091 of the California Government Code, EBMUD, as a local agency and utility district, is not subject to building and land use zoning ordinances for projects involving facilities for the production, generation, storage, treatment, or transmission of water. However, EBMUD's practice is to work with local jurisdictions and neighboring communities during project planning and to consider local environmental protection policies for guidance.

Walnut Creek General Plan

The City of Walnut Creek General Plan is a long-range policy document intended to guide physical, economic, and environmental growth in the City of Walnut Creek. The City of Walnut Creek General Plan contains citywide elements, including a Built Environment element, which contains goals and objectives to guide identification and preservation of cultural resources. The City of Walnut Creek General Plan was adopted in 2006 and has a timeframe that extends to the year 2025. Applicable goals and objectives from the Walnut Creek General Plan are listed below.

Goal 4-24. Protect and conserve archaeological and paleontological resources.

> **Policy 4-24.1.** Review the potential for the presence of archaeological and paleontological resources and remains in or near identified archaeological sites.

Goal 4-25. Maintain and enhance Walnut Creek's historic resources.

> **Policy 4-25.1.** Foster the preservation, restoration, and compatible reuse of historically significant structures and sites.

Lafayette General Plan

The City of Lafayette General Plan is a long-range policy document intended to guide physical, economic, and environmental growth in the City of Lafayette. The City of Lafayette General Plan contains citywide elements, including a Land Use Element, which contains goals and policies that call for the identification and preservation of archaeological and historic resources. The City of Lafayette General Plan, which was adopted in 2002 and most recently amended in 2020, has a timeframe that extends to the year 2040. Applicable goals and objectives from the Lafayette General Plan are listed below.

Goal LU-22. Preserve archaeological and historic resources.

> **Policy LU-22.1.** <u>Preserve Archaeological Resources:</u> Protect archaeological resources.
>
> **Policy LU-22.2.** <u>Historic Buildings, Sites and Districts:</u> Identify, recognize and protect sites, buildings, structures and districts with significant cultural, aesthetic and social characteristics which are part of Lafayette's heritage.

Lafayette Historic Landmarks Ordinance

The Lafayette City Council adopted Title 6.21 (Historic Landmarks) of the Lafayette Municipal Code as the city's landmarks preservation ordinance. The purpose of the ordinance is to safeguard the heritage of the city by preserving and perpetuating locations, areas, places, sites, buildings, structures, monuments, works of art, and other objects that reflect elements of the city's cultural, historical, archaeological, social, economic, political, agricultural, military, educational, or architectural history. The ordinance allows the Lafayette City Council to designate historical landmarks and to issue certificates of appropriateness for proposed alterations to designated landmarks.

EBMUD Standard Construction Specifications

EBMUD's Standard Construction Specifications and Procedures apply to all contractors completing work for EBMUD, and to work completed by EBMUD staff. The following EBMUD practices and procedures are applicable to cultural resources:

- **EBMUD Standard Construction Specification 01 35 45, Biological, Cultural, and Paleontological Resource Requirements, Section 3.3**

  EBMUD Standard Construction Specification 01 35 45 (Biological, Cultural, and Paleontological Resource Requirements), sets forth the contract requirements for environmental compliance to which construction crews must adhere. Section 3.3, Protection of Cultural and Paleontological Resources, defines provisions for protection of cultural resources during construction. The contractor would be required to comply with the following (EBMUD, 2023):

  - Conform to the requirements of statutes as they relate to the protection and preservation of cultural resources. Unauthorized collection of prehistoric or historic artifacts or fossils along the Work Area, or at Work facilities, is strictly prohibited.
  - Before beginning construction, all Contractor construction personnel involved in ground disturbing activities shall attend a cultural resources training course provided by the EBMUD of up to two-hours for site supervisors, foreman, project managers, and non-supervisory contractor personnel. The training program will be completed in person or by watching a video, at an EBMUD designated location, conducted by a qualified archaeologist provided by EBMUD or EBMUD staff. The program will discuss cultural resources awareness within the project work limits, including the responsibilities of Contractor's construction personnel, applicable mitigation measures, confidentiality, and notification requirements. The Contractor is responsible for ensuring that all workers requiring training are identified to EBMUD. Prior to accessing or performing construction work, all Contractor personnel involved in ground disturbing activities shall sign an attendance sheet by the Engineer verifying that they have attended the appropriate level of training; have read and understood the contents of the training; have read and understood the contents of the "Confidentiality of Information on Archaeological Resources" document; and shall comply with all project environmental requirements.
  - In the event that potential cultural resources are discovered at the site of construction, the following procedures shall be instituted:

- Discovery of prehistoric or historic-era archaeological resources requires that all construction activities shall immediately cease at the location of discovery and within 100 feet of the discovery.
  - The Contractor shall immediately allow EBMUD to evaluate the find. The Contractor is responsible for stopping work and notifying the Engineer and shall not recommence work until authorized to do so by the Engineer.
  - EBMUD will retain a qualified archaeologist to inspect the findings within 24 hours of discovery. If it is determined that the Project could damage a historical resource as defined by CEQA (or a historic property as defined by the National Historic Preservation Act of 1966, as amended), construction shall cease in an area determined by the archaeologist until a mitigation plan has been prepared, approved by EBMUD, and implemented to the satisfaction of the archaeologist (and Native American representative if the resource is prehistoric, who shall be identified by the Native American Heritage Commission [NAHC]). In consultation with EBMUD, the archaeologist (and Native American representative) will determine when construction can resume.
- Discovery of human remains requires that all construction activities immediately cease at the location of discovery, and within 100 feet of the discovery.
  - The Contractor shall immediately notify the Engineer who will engage qualified archaeologist provided by EBMUD to evaluate the find. The Contractor is responsible for stopping work and notifying the proper personnel and shall not recommence work until authorized to do so by the Engineer.
  - EBMUD will contact the County Coroner to determine whether the remains are Native American. If the remains are determined to be Native American, the Coroner will contact the Native American Heritage Commission (NAHC). The NAHC will then identify the person or persons it believes to be the most likely descendant from the deceased Native American, who in turn would make recommendations to EBMUD for the appropriate means of treating the human remains and any associated funerary objects.

o If EBMUD determines that the find requires further evaluation, at the direction of Engineer, Contractor shall suspend all construction activities at the location of the find and within a larger radius, as required.

3.4.3 Impact Analysis

Methodology for Analysis

Architectural Resources

Potential impacts on architectural resources are assessed by identifying whether Project implementation could affect resources that have been identified as historical resources for the purposes of CEQA. Individual properties and districts identified as historical resources under CEQA include those that are significant because of their association with important events, people, or architectural styles or master architects, or for their informational value (California Register Criteria 1, 2, 3, and 4) and that retain sufficient historic integrity to convey their significance. California Register Criterion 4, however, is typically applied to the evaluation of archaeological resources and not to architectural resources, as described below. Once a resource has been identified as significant, it must be determined whether the Project impacts would "cause a substantial adverse change in the significance" of the resource (CEQA Guidelines Section 15064.5[b]). A substantial adverse change in the significance of a historical resource means "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of [the] historical resource would be materially impaired" (CEQA Guidelines Section 15064.5[b][1]). A historical resource is materially impaired through the demolition or alteration of the resource's physical characteristics that convey its historical significance and that justify its inclusion in (or eligibility for inclusion in) the California Register or a qualified local register (CEQA Guidelines Section 15064.5[b][2]).

To evaluate the Project's potential effects on significant historic-age built cultural resources, a Cultural Resources Assessment Report for the Project site was completed in August 2022 (Kleinfelder, 2022). The assessment included a literature review, field survey to document historic-age architectural resources within the Project sites, and evaluation of resources for eligibility for listing in the California Register of Historical Resources and National Register of Historic Places.

Archaeological Resources

The significance of most prehistoric and historic-period archaeological sites is usually assessed under California Register Criterion 4. California Register Criterion 4 stresses the importance of the information potential contained within the site, rather than its significance as a surviving example of a type or its association with an important person or event. Archaeological resources may qualify as historical resources under the definition provided in CEQA Guidelines Section 15064.5[a], or they may also be assessed under CEQA as unique archaeological resources, defined as archaeological artifacts, objects, or sites that contain information needed to answer important scientific research questions (PRC Section 21083.2). A substantial adverse change in the significance of an archaeological resource is assessed similarly to other historical resources (i.e., whether the project would result in the destruction or adverse material alteration of those physical resource characteristics that convey its significance under the appropriate criteria (CEQA Guidelines Section 15064.5[b][2]).

Human Remains

Human remains, including those buried outside of formal cemeteries, are protected under several state laws, including PRC Section 5097.98 and California Health and Safety Code Section

7050.5. These laws are identified above under State Policies and Regulations. This CEQA analysis considers impacts including the intentional disturbance, mutilation, or removal of interred human remains.

Significance Criteria

Consistent with Appendix G of the *CEQA Guidelines,* an impact on cultural resources would be considered significant if the Project would:

1. Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5.
2. Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to §15064.5.
3. Disturb any human remains, including those interred outside of dedicated cemeteries.

Impacts and Mitigation Measures

Impact CUL-1: Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5. (Criterion 1)

Walnut Creek WTP Construction Phases 1 and 2

The following focuses on architectural resources. Archaeological resources, including those that are potentially historical resources according to CEQA Guidelines Section 15064.5, are addressed under Impact CUL-2, below.

No local, regional, state, or federal historically or architecturally significant structures, landmarks, or points of interest have been recorded or identified within the Walnut Creek WTP site. One previously recorded resource (1728 San Luis Road, P-07-004815) is located within 0.25 miles of the Walnut Creek WTP site; however, the resource is well outside the Project area and Phase 1 and Phase 2 construction activities would not cause an adverse change in the significance of the property.

The buildings and structures present within the Walnut Creek WTP site do not appear to be individually significant under California Register of Historical Resources Criteria 1, 2, 3, or 4 nor are they significant as a California Register of Historical Resources eligible historic district. The buildings do not have significant associations with themes or patterns of local history, they are not associated with persons of historic significance, and they are not distinguished or distinctive examples of either residential or industrial architecture.

Because the Walnut Creek WTP site is not considered a historical resource under CEQA, and because construction activities would not alter the 1728 San Luis Road property, the existing buildings and structures to be demolished and/or altered under Phase 1 and Phase 2 construction activities would not cause a substantial change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5, and the impact is considered to be a less than significant.

Lafayette WTP Construction

The Lafayette WTP as a whole is not considered a historical resource under CEQA; however, the Bryant #2 Pumping Plant which was constructed in 1927 at the Lafayette WTP site, is recommended as eligible for listing in the California Register of Historical Resources due to its age, its associations with the initial development of EBMUD's Mokelumne River/Aqueduct, and as an example of the Art Deco style of architecture as applied to an industrial building, and is considered a historical resource for the purposes of CEQA (Kleinfelder, 2022). The adjacent Lafayette Weir No. 1 was constructed in 1939 and, as a later addition to the facility, does not convey the same historical significance as the Bryant #2 Pumping Plant. Research has yielded no information to suggest that Lafayette Weir No. 1 represents a departure from standard weir design and operation from the period of its construction (Kleinfelder, 2022). Given the relatively recent dates of alterations to the other water treatment facilities at the Lafayette WTP, the remainder of the facility is not considered eligible for listing in the California Register, and therefore is not considered a cultural resource for CEQA purposes.

Construction at the Lafayette WTP would entail the demolition of the Lafayette Weir No. 1 structure. The demolition of the Lafayette Weir No. 1 structure at the Lafayette WTP would not alter the Bryant #2 Pumping Plant.

No other local, regional, state, or federal historically or architecturally significant structures, landmarks, or points of interest have been recorded or identified within the Lafayette WTP site. The historic Temple Isaiah of Contra Costa County (P-07-004503) is located within 0.25 miles of the Lafayette WTP Site; however, construction impacts would not cause an adverse change in the significance of the property.

Because Lafayette WTP as a whole is not considered a historical resource under CEQA, and the demolition of the Lafayette Weir No. 1 structure at the Lafayette WTP would not alter the Bryant #2 Pumping Plant or the historic Temple Isaiah of Contra Costa County, construction activities at the Lafayette WTP site would not cause a substantial change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5, and the impact is considered to be a less than significant.

Operation and Maintenance

Ongoing activities associated with Project operation and maintenance at the Walnut Creek WTP and Lafayette WTP would not involve the demolition or alternation of existing structures, nor would operation involve excavation or other ground disturbing activities.

Because operational activities would not entail demolition or alteration of existing structures, excavation, or ground disturbing activities, operational activities would not cause a substantial change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5, and the impact is considered to be a less than significant.

Significance Determination Before Mitigation

Less than significant.

Mitigation Measures

None required.

Impact CUL-2: Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to §15064.5. (Criterion 2)

Walnut Creek WTP Construction Phases 1 and 2, Lafayette WTP Construction

This section describes impacts to archaeological resources that are potentially historical resources according to CEQA Guidelines Section 15064.5, as well as unique archaeological resources, as defined in PRC Section 21083.2(g).

The Walnut Creek WTP and Lafayette WTP are highly disturbed sites that have been disturbed by previous construction activities. In addition, the results of archival research and field review indicate that there are no prehistoric or historic-era archaeological resources within the Project sites and that there is a low potential to uncover resources during Project implementation due to the existing disturbed nature of the Project area (Kleinfelder, 2022). However, excavation and ground disturbing activities throughout the sites could result in the inadvertent exposure of buried prehistoric or historic archaeological materials and could result in a potentially significant impact.

As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including EBMUD's Standard Construction Specification 01 35 45, Biological, Cultural, and Paleontological Resource Requirements, Section 3.3, Protection of Cultural and Paleontological Resources. This standard specification, which includes appropriate cultural resources management practices and complies with statutory requirements, outlines the following procedures:

- Preconstruction cultural resources training is required for all construction personnel involved in ground-disturbing activities.
- In the event that a cultural resource is identified during preconstruction activities or during excavation for construction activities, all work within 100 feet of the resource shall be halted until a qualified archaeologist can review, identify, and evaluate the resource for its significance. Should the archaeologist determine that an archaeological resource has the potential to be a tribal cultural resource, a Native American monitor shall be retained by EBMUD to monitor work in the area where the tribal cultural resource was discovered.

Because EBMUD's Standard Construction Specification 01 35 45, Section 3.3, Protection of Cultural and Paleontological Resources, requires implementation of cultural resources procedures that address the inadvertent discovery of cultural resources and ensures compliance with legal requirements regarding the protection of such resources, the Project's impacts related to archaeological resources would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (**Appendix E**) lists the applicable standard specifications language.

Operation and Maintenance

Ongoing activities associated with Project operation and maintenance at the Walnut Creek WTP and Lafayette WTP would not involve excavation or other ground disturbing activities. Because operational activities would not involve excavation or other ground disturbing activities, the Project is unlikely to cause a substantial adverse change in the significance of a unique archaeological resource, and no impact is anticipated.

Significance Determination Before Mitigation

Less than significant

Mitigation Measures

None required.

Impact CUL-3: Disturb any human remains, including those interred outside of dedicated cemeteries. (Criterion 3)

Walnut Creek WTP Construction Phases 1 and 2, Lafayette WTP Construction

There is no indication from the archival research or field review effort that any part of the Project sites has been used for human burial purposes in the recent or distant past. Therefore, it is unlikely that human remains would be encountered during implementation of the Project. However, ground disturbing activities at the Walnut Creek WTP and Lafayette WTP could result in the inadvertent exposure of buried prehistoric or protohistoric (ethnographic) Native American human remains, which would constitute a potentially significant impact.

As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including EBMUD's Standard Construction Specification 01 35 45, Biological, Cultural, and Paleontological Resource Requirements. Section 3.3, Protection of Cultural and Paleontological Resources, which includes appropriate cultural resources management practices and complies with statutory requirements, outlines procedures in regard to the discovery of human remains:

- Discovery of human remains requires that all construction activities shall immediately cease at the location of discovery and within 100 feet of the discovery. EBMUD shall contact the County Coroner to determine whether or not the remains are Native American. If the remains are determined to be Native American, the Coroner shall contact the NAHC. The NAHC shall then identify the person or persons it believes to be the most likely descendant from the deceased Native American, who in turn would make recommendations to EBMUD for the appropriate means of treating the human remains and any associated funerary objects.

Because EBMUD's Standard Construction Specification 01 35 45, Biological, Cultural, and Paleontological Resource Requirements, Section 3.3, Protection of Cultural and Paleontological Resources requires implementation of procedures that address the inadvertent discovery of human remains and follows statutory law, the Project's impact related to human remains are less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (**Appendix E**) lists the applicable standard specifications language.

Operation and Maintenance

Ongoing activities associated with Project operation and maintenance at the Walnut Creek WTP and Lafayette WTP would not involve excavation or other ground disturbing activities. Because operational activities would not involve ground disturbing activities, it is not anticipated that the Project would disturb any human remains, and no impact is anticipated.

Significance Determination Before Mitigation

Less than significant.

Mitigation Measures

None required.

Cumulative Impact Analysis

The Project would not contribute to significant cultural impacts. The geographic scope of analysis for cumulative impacts on historical resources, archaeological resources, and human remains encompasses areas where development would occur in the vicinity of the Project sites.

There are no known historic architectural resources that qualify as historical resources, archaeological resources, tribal cultural resources, or human remains at the Walnut Creek WTP or Lafayette WTP sites, with the exception of the Bryant #2 Pumping Plant at the Lafayette WTP, which is recommended as eligible for listing in the California Register of Historical Resources due to its age, its associations with the initial development of EBMUD's Mokelumne River/Aqueduct, and as an example of the Art Deco style of architecture as applied to an industrial building, and is considered a historical resource for the purposes of CEQA. Project activities, during construction and operation and maintenance, would not impact the Bryant #2 Pumping Plant; therefore, the Project would not contribute to a significant cumulative effect on cultural resources.

The cumulative impact analysis combines cultural resources into a single, non-renewable resource base and considers the additive effect of potential Project impacts on the following: architectural resources and archaeological resources that qualify as historical resources, as defined in CEQA Guidelines Section 15064.5, and human remains. A cumulatively significant impact could result if incremental effects of the Project, after implementation of EBMUD's Standard Construction Specifications, combined with the impacts of planned development or redevelopment, cause a substantial adverse effect on the same cultural resource.

Federal, state, and local laws can generally protect cultural resources in most instances. Future development at the Project sites would be required to comply with the same provisions of CEQA and implement measures similar to those identified above (EBMUD's Standard Construction Specification 01 35 45, Biological, Cultural, and Paleontological Resource Requirements, Section 3.3, Protection of Cultural and Paleontological Resources). The measures would require protocols for responding in the event of inadvertent discovery of archaeological resources or human remains.

Through compliance with applicable regulations and implementation of standard construction specifications, the Project would not have a considerable contribution to adverse effects on cultural resources of the region. This cumulative impact would be less than significant.

3.4.4 References

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3.5 Energy

This section describes the physical, environmental, and regulatory setting for energy resources, identifies the significance criteria for determining environmental impacts, and evaluates the potential impacts on energy resources that could result from implementation of the Project. The Project's impacts related to energy usage as it may affect climate change are discussed in *Section 3.7, Greenhouse Gas (GHG) Emissions*.

3.5.1 Environmental Setting

Electricity and Natural Gas

In 2020, the most recent year for which data are available, California generated approximately 273,000 gigawatt hours of electricity. About 37 percent was produced by natural gas, with other sources including solar (13 percent), hydroelectric (14 percent), wind (11 percent), nuclear (9 percent), and coal (less than 3 percent). The remaining energy was produced by other sources such as geothermal and biomass sources (California Energy Commission [CEC], 2022a).

Pacific Gas & Electric (PG&E) is the local electricity and natural gas supplier in Contra Costa County. PG&E provides natural gas and electric service to approximately 16 million people throughout a 70,000-square-mile service area in northern and central California (PG&E, 2022a). About 35 percent of PG&E's electrical generation in 2020 was from renewable resources, such as wind, geothermal, biomass, solar and small hydroelectric facilities (PG&E, 2021).

In a typical year, EBMUD produces more energy than required for its operations, through hydroelectric power, solar power, and biogas. EBMUD sells electricity to electric power providers when the water and wastewater systems generate excess energy. EBMUD generates on average 150,000 megawatt-hours of electricity annually at its two hydroelectric power plants in the Sierra Nevada foothills. EBMUD generates more electricity during wet years than dry years in the Mokelumne River watershed. EBMUD's current photovoltaic generation capacity is up to 3,200 megawatt-hours annually, but more projects are planned in the future. EBMUD's wastewater treatment plant biogas power generation station produces on average 50,000 megawatt-hours of electricity annually, which is more energy than is required to run processes at the wastewater treatment plant; EBMUD sells excess energy to the electric grid (EBMUD, 2021). EBMUD's sustainability practices minimize energy use and GHG emissions.

Petroleum

Petroleum used in California in 2021 came from California (29 percent), Alaska (15 percent) and foreign sources (56 percent) and is refined to produce gasoline and diesel fuel and a variety of other liquid petroleum products (CEC, 2022b). There are five oil refineries in the San Francisco Bay area.

Gasoline is the most used transportation fuel in California, with 97 percent of all gasoline consumed by light-duty cars, pickup trucks, and sport utility vehicles (CEC, 2022c). Diesel fuel is the second largest transportation fuel used in California, representing 17 percent of total fuel sales behind gasoline. Nearly all heavy-duty trucks, delivery vehicles, buses, trains, ships, boats and barges, farm, construction and heavy-duty military vehicles and equipment have diesel engines. Diesel is the fuel of choice because diesel has 12 percent more energy per gallon than gasoline and has fuel properties that prolong engine life, making diesel ideal for heavy-duty vehicle applications (CEC, 2022d). According to the State Board of Equalization, approximately 14 billion gallons of gasoline and approximately 3 billion gallons of diesel, including off-road diesel, were sold in California in 2021 (California State Board of Equalization, 2021a and 2021b). In Contra Costa County, it is estimated that 336 million gallons of gasoline and 23 million gallons of diesel were sold in 2020 (California Energy Commission, 2020).

Current EBMUD operation and maintenance involve consumption of petroleum fuels to operate its maintenance fleet and emergency generators. However, EBMUD is investing in more fuel-efficient vehicles. Every passenger vehicle in EBMUD's fleet is either a hybrid or plug-in electric vehicle. For its medium and heavy-duty fleet, EBMUD has transitioned to nearly 100 percent renewable diesel, which is manufactured using organic materials such as waste animal fat or used cooking oil (EBMUD, 2021).

3.5.2 Regulatory Framework

This section describes policies and regulations related to energy that may apply to the Project.

Federal Policies and Regulations

National Energy Conservation Policy Act

The National Energy Conservation Policy Act serves as the underlying authority for federal energy management goals and requirements. Signed into law in 1978, the act is regularly updated and amended by subsequent laws and regulations. The National Energy Conservation Policy Act is the foundation of most federal energy requirements.

Energy Policy Act and Corporate Average Fuel Economy Standards

The Energy Policy Act of 1975 was established in response to the oil crisis of 1973, which increased oil prices due to a shortage of reserves. The Energy Policy Act required that all vehicles sold in the United States meet certain fuel economy goals. The Energy Policy Act of 1975 established the Corporate Average Fuel Economy (CAFE) standard with the purpose of reducing energy consumption by increasing the fuel economy of cars and light trucks. CAFE standards require cars and light trucks to have a minimum fuel economy (i.e., miles per gallon). CAFE standards have steadily increased year after year (NHTSA, 2022). The first CAFE standards for heavy-duty vehicles (i.e., vehicles and trucks over 8,500 pounds gross vehicle weight) were finalized in 2011, covering vehicles beginning with model year 2014 (NHTSA, 2022). The Energy Policy Act of 1975 and CAFE standards indirectly apply to the Project due to their effects on vehicle fuel efficiencies for the vehicles to be used during Project implementation.

National Energy Policy Act of 2005

The National Energy Policy Act of 2005 set equipment energy efficiency standards to reduce reliance on nonrenewable energy resources and provided incentives to reduce current demand on energy resources. For example, under the National Energy Policy Act, consumers and businesses can attain federal tax credits for purchasing fuel-efficient appliances and products, including hybrid vehicles; constructing energy-efficient buildings; and improving the energy efficiency of commercial buildings. Additionally, tax credits are available for the installation of qualified fuel cells, stationary microturbine power plants, and solar power equipment. The Renewable Fuel Standard (RFS) program to reduce GHG emissions and expand the nation's renewable fuels sector while reducing reliance on imported oil was authorized under the Energy Policy Act of 2005.

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 strengthened key energy management goals for the federal government and set more challenging goals than the Energy Policy Act of 2005. For example, the Energy Independence and Security Act of 2007 increased the CAFE standards (US EPA, 2022a) and expanded the RFS (US EPA, 2022b). The energy reduction and environmental performance requirements of Executive Order (EO) 13693 (Planning for Federal Sustainability in the Next Decade), signed in March 2015, superseded the EO that led to the Energy Independence and Security Act of 2007 (EO 13423 signed in 2007) as well as Executive Order 13514 (Federal Leadership in Environmental, Energy, and Economic Performance) signed in 2009.

State Policies and Regulations

California Energy Action Plan II

The California Energy Action Plan II is the state's principal energy planning and policy document (California Public Utilities Commission and CEC, 2005). The plan describes a coordinated implementation plan for state energy policies and refines and strengthens California's original Energy Action Plan I published in 2003. California Energy Action Plan II identifies specific action areas to ensure that California's energy is adequate, affordable, technologically advanced, and environmentally sound. The plan adopts a loading order of preferred energy resources to meet the state's needs and reduce reliance on natural gas and other fossil fuels, also important for achieving GHG emission reductions from the electricity sector.

The California Energy Action Plan II considers energy efficiency and demand response the primary ways to meet the energy needs of California's growing population. The plan considers renewable energy and distributed generation the best ways to achieve energy efficiency on the supply side. To the extent that energy efficiency, demand response, renewable resources, and distributed generation are unable to satisfy increasing energy and capacity needs, the CEC supports clean and efficient fossil fuel-fired generation to meet California's energy needs.

Recognizing that California's energy policies were significantly influenced by the passage of Assembly Bill 32, the California Global Warming Solutions Act of 2006, and that the Energy Commission's 2007 Integrated Energy Policy Report advanced policies that would enable the state to meet its energy needs while restraining carbon emissions, the 2008 Energy Action Plan Update provides a status update to the 2005 California Energy Action Plan II and continues the goals of the original 2003 California Energy Action Plan, rather than produce a new action plan (California Public Utilities Commission and CEC, 2008). The 2008 Energy Action Plan Update focused on changes in the policy areas of energy efficiency, demand response, renewable energy, electricity reliability and infrastructure, electricity market structure, natural gas supply and infrastructure, research and development, and climate change.

State of California Integrated Energy Policy Report

Senate Bill 1389 was signed into law in 2002 and requires the CEC to "conduct assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices." The assessments and forecasts are used to develop recommendations for energy policies that conserve state resources, protect the environment, provide reliable energy, enhance the state's economy, and protect public health and safety. The CEC is required to issue a report every two years, and the most recent report is the 2021 Integrated Energy Policy Report, which provides the results of the CEC's assessments of a variety of energy issues facing California including building decarbonization, energy reliability, decarbonizing California's Gas System, California's energy demand forecast, and quantifying the benefits of the clean transportation program (CEC, 2021a).

State Alternative Fuels Plan

The State Alternative Fuels Plan (California Air Resources Board [CARB] and CEC, 2007) presents strategies and steps that California must take to increase the use of alternative fuels without adversely affecting air quality, water quality, or human health. The State Alternatives Fuels Plan recommends alternative-fuel targets of 9 percent in 2012, 11 percent in 2017, and 26 percent by 2022. The State Alternatives Fuels Plan also presents a 2050 Vision that extends the plan outcomes and presents a transportation future that greatly reduces the energy needed for transportation, provides energy through a diverse set of transportation fuels, eliminates over-dependency on oil, and achieves an 80 percent reduction in GHG emissions. With the State Alternatives Fuels Plan goals, more than 4 billion gasoline gallon equivalents (20 percent) would be displaced by alternative fuels in 2020. CEC estimates that by 2050, alternative fuels could provide more than half of the energy needed to power California's transportation system.

Senate Bill 350

Senate Bill 350 was signed into law in October 2015 and establishes a requirement for California to reduce the use of petroleum in cars by 50 percent, to generate half its electricity from renewable resources, and to increase energy efficiency by 50 percent at new and existing buildings, all by the year 2030.

Local Policies and Regulations

Under Section 53091 of the California Government Code, EBMUD, as a local agency and utility district, is not subject to building and land use zoning ordinances for projects involving facilities for the production, generation, storage, treatment, or transmission of water. However, EBMUD's practice is to work with local jurisdictions and neighboring communities during project planning and to consider local environmental protection policies for guidance.

Walnut Creek General Plan

The City of Walnut Creek General Plan is a long-range policy document intended to guide physical, economic, and environmental growth in the City of Walnut Creek. The City of Walnut Creek General Plan contains citywide elements, including the Built Environmental element, which addresses sustainability and conservation. The City of Walnut Creek General Plan was adopted in 2006 and has a timeframe that extends to the year 2025. Applicable goals and objectives from the General Plan are listed below.

Goal 27. Promote "green" development and redevelopment.

> **Policy 27.1.** Encourage resource-efficient building techniques, materials, and technologies in new construction and renovation.

Goal 28. Promote energy conservation.

Policy 28.2. Promote energy conservation throughout the city.

Lafayette General Plan

The City of Lafayette General Plan is a long-range policy document intended to guide physical, economic, and environmental growth in the City of Lafayette. The City of Lafayette General Plan contains citywide elements, including an Open Space and Conservation element, which has a section dedicated to energy conservation. The City of Lafayette General Plan, which was adopted in 2002 and most recently amended in 2020, has a timeframe that extends to the year 2040. Applicable goals and objectives from the General Plan are listed below.

Goal OS-11. Reduce the consumption of non-renewable energy resources.

Policy OS-11.1. Energy Conservation Measures in Buildings. Encourage energy conservation in new development and the retrofit of existing structures.

EBMUD Sustainability and Resilience Policy

EBMUD adopted a sustainability policy in 2008, most recently updated in 2020, that focuses on using resources (economic, environmental, and human) in a responsible manner that meets the needs of today without compromising the ability of future generations to meet the needs of tomorrow. The sustainability policy uses a holistic view and minimizes waste; conserves energy and natural resources; promotes long-term economic viability; supports safety and well-being for employees, communities, and customers; and is beneficial to society (EBMUD, 2020a).

EBMUD Strategic Plan

EBMUD's Strategic Plan outlines the goals, strategies, objectives, and key performance indicators that are used to carry out the mission of managing natural resources, providing reliable, high-quality water and wastewater services at fair and reasonable rates for the people of the East Bay, and preserving and protecting the environment for future generations. The water quality and environmental protection goal in the Strategic Plan includes strategies to address resource conservation, as listed below: (EBMUD, 2020b).

Water Quality and Environmental Protection, Strategy 4: Minimize impacts to the environment by reducing, recycling, reusing and reclaiming waste, and by conserving natural resources.

- **Objective:** Identify and implement energy efficient projects.

EBMUD Climate Change Monitoring and Response Plan

EBMUD's Climate Change Monitoring and Response Plan helps EBMUD understand the potential climate change threats, prepare adaptation strategies, and guide mitigation of GHG emissions, which contribute to climate change (EBMUD, 2014). The Climate Change Monitoring and Response Plan established objectives for EBMUD, including encouraging and promoting cost-effective use and the generation of renewable energy within its water and wastewater operations.

EBMUD Climate Action Plan

EBMUD's Climate Action Plan addresses the impacts, vulnerabilities, mitigation measures, and adaptation strategies throughout EBMUD operations (EBMUD, 2021). To address climate change impacts, EBMUD is preparing for more frequent and severe droughts and storms, reduced snowpack, warmer weather, longer wildfire seasons, increased water demand, and rising groundwater and sea levels. In addition, EBMUD is investing in renewable energy production, using alternative fuel vehicles, and setting aggressive goals for GHG reductions.

EBMUD Standard Construction Specifications

EBMUD's Standard Construction Specifications and Procedures apply to all contractors completing work for EBMUD, and to work completed by EBMUD staff. The following EBMUD practices and procedures are applicable to energy:

- **EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, Section 3.5**

  EBMUD Standard Construction Specification 01 35 44 (Environmental Requirements), Section 3.5 requires implementation of the following measures that are aimed at reductions of air pollution emissions, but also ensure energy-efficient use of equipment (EBMUD, 2023):

  - Contractor shall implement standard air emissions controls such as:
    - Minimize the use of diesel generators where possible.
    - 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 (ATCM) Title 13, Section 2485 of California Code of Regulations. Clear signage shall be provided for construction workers at all access points.
    - Follow applicable regulations for fuel, fuel additives, and emission standards for stationary, diesel-fueled engines.
    - Perform regular-low-emission tune-ups on all construction equipment, particularly haul trucks and earthwork equipment.
  - Contractor shall implement the following measures to reduce greenhouse gas emissions from fuel combustion:
    - On road and off-road vehicle tire pressures shall be maintained to manufacturer specifications. Tires shall be checked and re-inflated at regular intervals.
    - Construction equipment engines shall be maintained to manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
    - Demolition debris shall be recycled for reuse to the extent feasible.

3.5.3 Impact Analysis

Methodology for Analysis

Consistent with Public Resources Code 21100(b)(3), this impact analysis evaluates the potential for the Project to result in a substantial increase in energy demand and/or wasteful use of fuel or energy during Project construction and operation and maintenance.

The analysis of potential energy impacts uses a qualitative and quantitative approach to discuss energy demand and describes conservation measures that would minimize the use of fuel and energy and ensure that they are not used in a wasteful manner. Energy consumption as it relates to GHG emissions is evaluated in *Section 3.7, Greenhouse Gas Emissions*.

Significance Criteria

Consistent with Appendix G of the *CEQA Guidelines* an impact on energy would be considered significant if the Project would:

1. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.
2. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Criteria Requiring No Further Evaluation

Criteria listed above that are not applicable to actions associated with the Project are identified below along with a supporting rationale as to why further consideration is unnecessary and a no-impact determination is appropriate.

- ***Conflict with or obstruct a state or local plan for renewable energy or energy efficiency (Criterion 2). –*** The Project would comply with federal standards for vehicle fuel efficiency because all vehicles and machinery that are sold within the United States are required to meet those standards. EBMUD has long been committed to renewable energy generation and conservative energy use, and generates energy through hydroelectric power, solar power, and biogas production at its wastewater treatment plant; although, the Project would neither affect the generation nor use of renewable energy. The Project would comply with other applicable energy efficiency policies or standards, including EBMUD standard practices and procedures that require a variety of measures to reduce the inefficient use of fuels (e.g., engine maintenance, limits on idling time and use of generators, recycling). Therefore, there would be no impact associated with conflicts with energy plans and policies related to renewable energy or energy efficiency.

Impacts and Mitigation Measures

Impact EN-1: Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation. (Criterion 1)

Walnut Creek WTP Phase 1 and Lafayette WTP Construction

Construction of the Project would require the use of various fuels (primarily gasoline, diesel, and motor oil) for a variety of construction activities, including excavation, grading, and vehicle travel. During construction, most of the energy demand would be associated with fuel required for construction worker commute trips, material hauling trips to and from the site, and off-road construction equipment. Construction would also indirectly use energy for the production of construction materials.

As detailed in the *Project Description*, the improvements at the Lafayette WTP would take place at the same time as the Phase 1 improvements at the Walnut Creek WTP. Daily worker and truck trips are summarized in **Table 2-5** and the daily construction vehicle fleet is summarized in *Section 2.6.6.* The Phase 1 improvements at the Walnut Creek WTP and the Lafayette WTP improvements would take approximately 3 ¼ years to 5 years, with construction typically involving 8-hour workdays, Monday through Friday, beginning in mid-2027. Given the potential range in construction duration, the shorter construction duration for Phase 1 is used in the impact analysis to capture a worst-case scenario where construction activities are most intense. In the most intense year of construction, 2029, average daily worker trips would be 21 trips per day while average daily truck trips would be 15 trips per day. Based on the California Emissions Estimator Model (CalEEMod) air pollution emissions model version 2022, the worker trip length would be approximately 13 miles one-way and the hauling trip length would be 20 miles one-way. Worker and haul trip lengths are based on measured home-work trips lengths estimated by the 2015 California Statewide Travel Demand Model. Worker vehicles average 20.8 miles per gallon, and hauling trucks average 6.2 miles per gallon, according to the 2022 Oak Ridge National Laboratory Transportation Energy Data Book.

As summarized in the *Project Description, Section 2.6.6,* and detailed in the constructability technical memorandum (Brown and Caldwell, 2022) prepared for each phase of Project construction, construction of the Walnut Creek WTP Phase 1 and Lafayette WTP would involve the use of approximately 20 pieces of equipment per day. Based on estimates in CalEEMod (**Appendix K**), a daily construction equipment fleet of this size would emit approximately 450 metric tons of carbon dioxide per year ($MTCO_2$/year). Based on The Climate Registry's average 10.21 kilograms of carbon dioxide per gallon of diesel fuel, the energy requirements for use of the typical construction equipment fleet described in the Project Description, would be approximately 43,300 gallons of diesel fuel per year during the most intensive year of construction. Fuel use is summarized in **Table 3.5-1**.

Table 3.5-1: Construction Fuel Use, Walnut Creek WTP Phase 1 and Lafayette WTP (construction year 2029)

	Annual Total	Fuel Factor	Gallons per Year
Worker Vehicles	136,500 miles[1]	20.8 mpg[2]	6,600 gallons gasoline
Hauling Vehicles	150,000 miles[1]	6.2 mpg[2]	24,200 gallons diesel
On-site Construction Equipment	450 $MTCO_2$	10.21 kg CO2/gallon [3]	43,300 gallons diesel

Sources:
[1] California Emissions Estimator Model (CalEEMod) version 2022. CalEEMod includes worker trip lengths by Transportation Analysis Zone (TAZ) from the 2015 Statewide Travel Demand Model (CSTDM). The trip lengths are based on the statewide TAZ data aggregated to Contra Costa County.
[2] Oak Ridge National Laboratory, Transportation Energy Data Book: Edition 40 – Updated June 2022; Table Summary Statistics for Class 7-8 Combination Trucks, 1970–2020 and Quick Facts.
[3] The Climate Registry, default emission factors, Table 2.1 U.S. Default Factors for Calculating CO_2 Emissions from Combustion of Transport Fuels.

While the precise amount of construction energy consumption is uncertain, use of fuels would be consistent with typical construction and manufacturing practices and would not be wasteful or unnecessary because doing so would not be economically sustainable for contractors. Construction vehicles and equipment would comply with federal standards for vehicle fuel efficiency because all vehicles and machinery that are sold in the United States must meet those standards. Construction activities have been designed to minimize energy use as much as possible; as detailed in the Project Description, EBMUD would store as much excavated soil on site as possible and reuse the soils as backfill, so as to minimize fuel consumption associated with haul trucks for soil disposal.

As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including Standard Construction Specification 01 35 44, Environmental Requirements. Section 3.5, Air Quality Control, of Standard Construction Specification 01 35 44 requires a variety of measures that would reduce the inefficient use of fuels, including limiting idling, keeping engines properly tuned, maintaining appropriate tire pressure, requiring the use of alternative-fueled construction equipment, and recycling or reusing construction waste or demolition materials to the extent feasible

Because Section 3.5, Air Quality Control, of Standard Construction Specification 01 35 44 has been incorporated into the project and includes measures to reduce the inefficient use of fuels (e.g., engine maintenance, limits on idling time and use of generators, recycling), and because construction vehicles and equipment would comply with federal standards for fuel efficiency, construction would not result in wasteful, inefficient, or unnecessary consumption of energy resources resulting in a less than significant impact. The EBMUD Practices and Procedures Monitoring and Reporting Plan (**Appendix E**) lists the applicable standard specifications language.

Walnut Creek WTP Construction Phase 2

The Phase 2 improvements at the Walnut Creek WTP are estimated to take approximately 2 years or longer, with construction typically involving 8-hour workdays, Monday through Friday. The shorter 2-year construction duration for Phase 2 is used in the impact analysis to capture a worst-case scenario where construction activities are most intense. Phase 2 construction has not been determined and depends on future untreated water quality and water demand but is assumed to occur immediately after Phase 1 at the end of 2030 for the analysis. In the most intense year of construction, 2031, average daily worker trips would be 18 trips per day while average daily truck trips would be 15 trips per day. Based on the CalEEMod air pollution emissions model version 2022, the worker trip length would be approximately 13 miles one-way and the hauling trip length would be 20 miles one-way. Trip lengths are based on measured home-work trips lengths estimated by the 2015 California Statewide Travel Demand Model. Worker vehicles average 20.8 miles per gallon, and hauling trucks average 6.2 miles per gallon, according to the 2022 Oak Ridge National Laboratory Transportation Energy Data Book.

As summarized in the *Project Description, Section 2.6.6* and detailed in the constructability technical memorandum (Brown and Caldwell, 2022) prepared for each phase of Project construction, the daily construction vehicle fleet required for the Walnut Creek WTP Phase 2 would involve the use of approximately 18 pieces of equipment per day. Based on estimates in CalEEMod (**Appendix K**), the daily construction vehicle fleet would emit approximately 350 $MTCO_2$/year. The energy requirements for use of the typical construction equipment fleet described in the Project Description, would be approximately 33,600 gallons of diesel fuel per year during the most intensive year of construction, assuming an emission factor of 10.21 kilograms CO_2 per gallon of diesel fuel (The Climate Registry, 2021). Fuel use is summarized in **Table 3.5-2.**

Table 3.5-2: Construction Fuel Use, Walnut Creek WTP Phase 2 (construction year 2031)

	Annual Total	Fuel Factor	Gallons per Year
Worker Vehicles	117,000 miles[1]	20.8 mpg[2]	5,600 gallons gasoline
Hauling Vehicles	150,000 miles[1]	6.2 mpg[2]	24,200 gallons diesel
On-site Construction Equipment	350 $MTCO_2$	10.21 kg CO_2/gallon [3]	33,600 gallons diesel

Sources:
[1] California Emissions Estimator Model (CalEEMod) version 2022. CalEEMod includes worker trip lengths by Transportation Analysis Zone (TAZ) from the 2015 Statewide Travel Demand Model (CSTDM). The trip lengths are based on the statewide TAZ data aggregated to Contra Costa County.
[2] Oak Ridge National Laboratory, Transportation Energy Data Book: Edition 40 – Updated June 2022; Table Summary Statistics for Class 7-8 Combination Trucks, 1970–2020 and Quick Facts.
[3] The Climate Registry, default emission factors, Table 2.1 U.S. Default Factors for Calculating CO_2 Emissions from Combustion of Transport Fuels.

While the precise amount of construction energy consumption is uncertain, use of fuels would be consistent with typical construction and manufacturing practices and would not be wasteful or unnecessary because doing so would not be economically sustainable for contractors. Construction vehicles and equipment would comply with federal standards for vehicle fuel efficiency because all vehicles and machinery that are sold in the United States must meet those standards. Construction activities have been designed to minimize energy use as much as possible; as detailed in the Project Description, EBMUD would store as much excavated soil on site as possible and reuse the soils as backfill, so as to minimize fuel consumption associated with haul trucks for soil disposal.

As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the project, including Standard Construction Specification 01 35 44, Environmental Requirements. Section 3.5, Air Quality Control, of Standard Construction Specification 01 35 44 requires a variety of measures that would reduce the inefficient use of fuels, including limiting idling, keeping engines properly tuned, maintaining appropriate tire pressure, requiring the use of alternative-fueled construction equipment, and recycling or reusing construction waste or demolition materials to the extent feasible

Because Section 3.5, Air Quality Control, of Standard Construction Specification 01 35 44 has been incorporated into the project and includes measures to reduce the inefficient use of fuels (e.g., engine maintenance, limits on idling time and use of generators, recycling), and because construction vehicles and equipment would comply with federal standards for fuel efficiency, construction would not result in wasteful, inefficient, or unnecessary consumption of energy resources resulting in a less than significant impact. The EBMUD Practices and Procedures Monitoring and Reporting Plan (**Appendix E**) lists the applicable standard specifications language.

Operation and Maintenance

The Project would involve increased energy consumption for operation and maintenance. As detailed in the Project Description, operation of the Walnut Creek WTP would increase the number of hauling truck trips from approximately 2 daily trips to approximately 3 daily trips due to increased solids production after Project completion. Solids production and truck haul trips would increase during periods of lower water quality or high turbidity and could temporarily get as high as 21 truck trips per day during peak turbidity; however, such events are expected to be a rare occurrence, resulting in minimal additional average daily trips for solids removal. Walnut Creek WTP would require new deliveries of various chemicals (alum, polymer, microsand, hydrogen peroxide, and liquid oxygen) to treat the range of water quality entering the Walnut Creek WTP. As a result, the chemical delivery truck trips would increase from approximately 2 weekly trips (existing) to approximately 4 weekly trips. In addition, the new Walnut Creek WTP pretreatment facilities may require up to two additional operators and up to two additional maintenance staff. There would be no staffing changes or additional truck trips at the Lafayette WTP. Using the same conversion factors as the construction hauling trips presented above (i.e., 20-mile hauling trip distance [CalEEMod], 6.2 mpg [Oak Ridge National Laboratory, 2022]), the maximum haul rate would equate to an additional 40 to 760 miles travelled per day, and 6.5 to 123 gallons of diesel fuel per day.

The existing Walnut Creek WTP uses approximately 2,000 MWh of electricity each year for water treatment, pumping treated water, and site operations. The Project would require an increase in electrical power at the Walnut Creek WTP of approximately 2,000 to 5,000 MWh each year depending on untreated water quality for lighting in the new buildings and for operation of the ballasted flocculation, ozone generation, and mechanical dewatering equipment and would be met by the local utility, PG&E. The existing photovoltaic system at the Walnut Creek WTP supplies approximately 700 MWh each year, which is approximately 30 percent of the power needed for current operations.

The new water treatment processes and facilities at the Walnut Creek WTP would require one to two additional operators to treat the new range of water quality entering the facility, and one to two additional maintenance staff to maintain the new treatment facilities. Using the same conversion factors as the construction hauling trips presented above (i.e., 13-mile worker trip distance [CalEEMod], and 20.8 mpg [Oak Ridge National Laboratory, 2022]), work trips would result in an additional 104 miles travelled per day, and 5 gallons of gasoline fuel per day.

The Project would adhere to all applicable energy conservation measures, including Advanced Clean Cars and the In-Use Off-Road Diesel Vehicles regulations, and applicable measures adopted under the EBMUD sustainability and resilience policy and Climate Action Plan, including considering economic, environmental, and social objectives in decision-making; using alternative fuel vehicles; and providing staff with training to implement energy savings. Vehicles used for operations and maintenance trips would comply with CAFE fuel economy standards, which would result in more efficient use of transportation fuels and thus lower consumption. Because of the high cost of fuels, EBMUD and their contractors have a built-in incentive to minimize energy use and use fuel efficient equipment. The Project would purchase electricity from PG&E, which is committed to transitioning to renewable sources of energy (PG&E, 2022b). As PG&E transitions to electricity sources that are less energy intensive, the indirect energy use from the Project would also decline. Therefore, the Project would have a less than significant impact due to inefficient energy use.

The Project is needed to maintain treatment capacity, increase flexibility and reliability, and continue to meet drinking water demands under future droughts, wildfire events, high rainfall runoff, algae blooms, and emerging contaminants. Although the Project would consume electricity, gasoline, and diesel fuel, the Project would have a less than significant impact on unnecessary or wasteful energy use.

Significance Determination Before Mitigation

Less than significant.

Mitigation Measures

None required.

Cumulative Impact Analysis

As discussed above, the Project's energy impacts would be associated with the construction and operations phases. The construction cumulative analysis below focuses on other projects that could be constructed in the cities of Walnut Creek and Lafayette within the vicinity of the Project sites at the same time. Based on information of current and pending projects from various agencies, 16 projects within a 1-mile distance of the Project sites were identified, most of which are projects proposed by EBMUD (see **Table 3.0-1** in *Section 3.0*). Three EBMUD projects entail construction that could occur during the same time frame as the Project.

Construction of projects identified in the cumulative analysis would result in the consumption of fuels in construction equipment as well as vehicles used for worker commute and material hauling. However, as with the Project, use of fuels would be consistent with standard construction and manufacturing practices and would not be considered wasteful or unnecessary. Additionally, all construction vehicles and equipment would be required to comply with federal standards for vehicle fuel efficiency. Therefore, although the use of energy for construction would constitute an irreversible use of a finite resource, given that construction activities are short term and given that construction practices and equipment used would be consistent with applicable standards and regulations, energy use would not be considered a cumulatively significant impact. The Project's contribution to this less-than-significant cumulative impact would be further reduced by the implementation of a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, including Standard Construction Specification 01 35 44, Environmental Requirements.

Because the Project would be served by PG&E, the geographic scope of the operational cumulative impacts on energy resources encompasses the PG&E service area. The Project would result in a significant impact on PG&E energy supplies if it would require additional capacity or would exceed PG&E's ability to meet peak demand.

Overall electric supply is adequate; however, temporary shortfalls could occur in PG&E's service area (and other portions of the statewide grid) during temporary periods of high peak demand. Peak electricity demands occur in PG&E's service area during hot weather events when demand for indoor air conditioning rises. In the future, electrification of buildings and increased use of electricity for transportation would add to PG&E's peak demand.

With an increasing number of hot-weather days and the move toward electrification of buildings and vehicles, meeting demand during peak periods is an important planning consideration (CEC, 2021b). PG&E (PG&E, 2022c) is taking steps for a reliable and safe electricidal grid by flattening peak demands, encouraging and deploying energy efficiency and conservation measures, and investing in robust distribution infrastructure within its service area. Through a combination of increases in efficiency and deployment of power management strategies, including demand response, and power imports during peak periods, PG&E expects to maintain sufficient capacity to provide power to its service area, including the Project. Therefore, the Project's incremental contribution to the cumulative impact on electrical supply would not be cumulatively considerable.

The Project would not contribute considerably to any cumulative impact related to energy usage.

3.5.4 References

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3.6 Geology, Soils, and Seismicity

This section describes the physical, environmental, and regulatory setting for geologic, soil, and seismic resources at the Project site and vicinity; identifies the significance criteria for determining environmental impacts; and evaluates the potential impacts on geology, soils, and seismic resources that could result from implementation of the Project. A Geotechnical Interpretive Report was prepared for the Walnut Creek WTP site (Ninyo & Moore, 2022) and can be found in **Appendix H**.

3.6.1 Environmental Setting

Site Geology

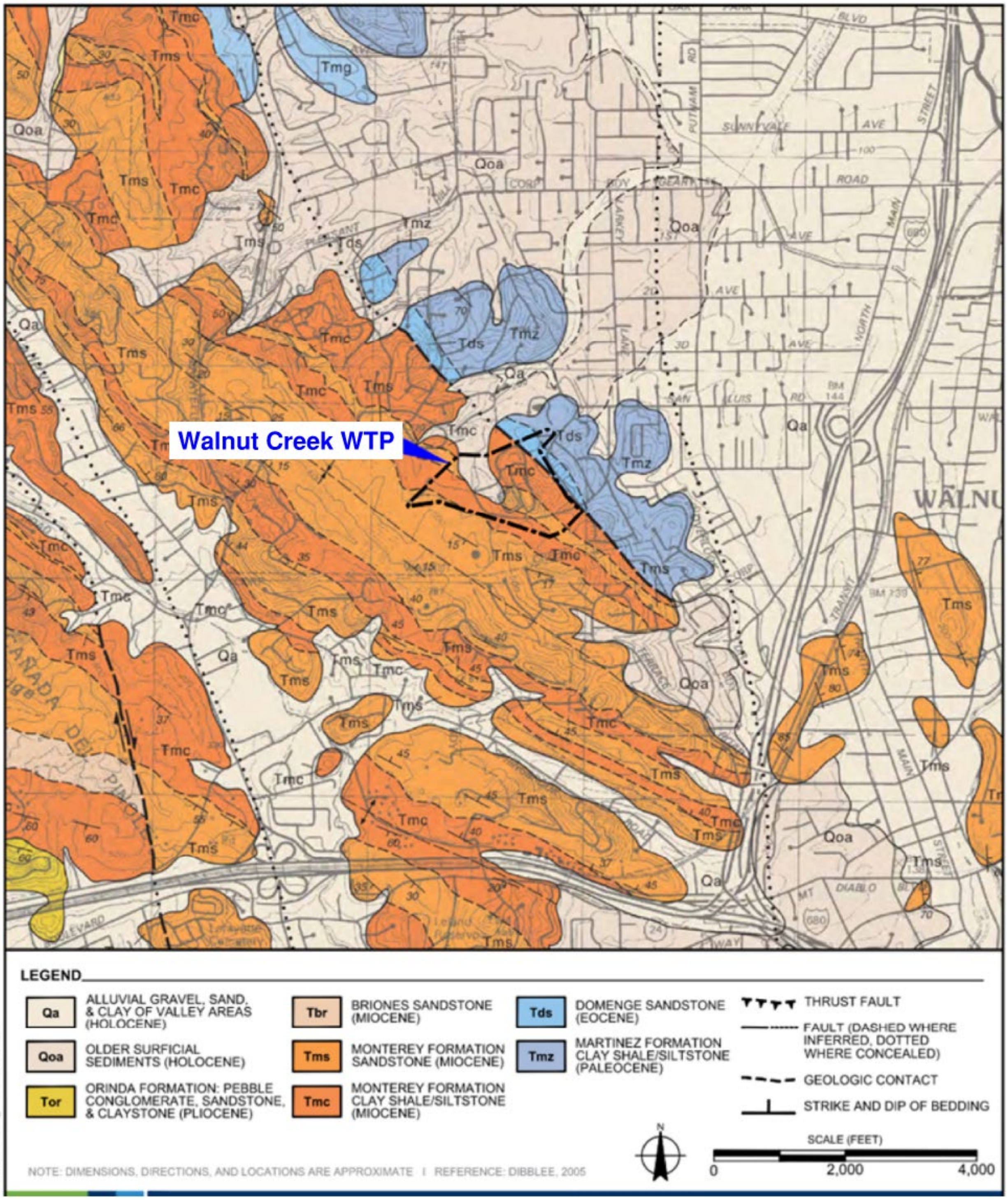
The Project is regionally located within the geologically complex Coast Ranges geomorphic province which lies between the Pacific Ocean and the Great Valley province (Sacramento and San Joaquin Valleys) and stretches from the Oregon border to the Santa Ynez Mountains near Santa Barbara. Much of the Coast Ranges geomorphic province is composed of marine sedimentary deposits and volcanic rocks that form northwest-trending mountain ridges and valleys, running roughly parallel to the San Andreas Fault Zone. Most of the Coast Ranges province contains marine sedimentary and volcanic rocks that form the Franciscan Complex.

Locally the Project is located within the East Bay Hills, a northwest-trending series of ridges characterized by highly folded and deformed sedimentary rocks and alluvial-filled stream valleys. Several regional geologic maps that cover the East Bay area have been prepared by the United States Geological Survey (USGS) and the geologic information provided on the maps does vary slightly; however, in general, the maps indicate the larger region is underlain by Miocene age marine sedimentary rocks consisting of sandstone, siltstone, and shale. Quaternary age alluvial sediments, colluvial soils, and shallow landslide deposits are also present in the drainage channels and slopes (Ninyo & Moore, 2022). A regional geologic map showing areas surrounding the Walnut Creek WTP site is provided in **Figure 3.6-1** (Ninyo & Moore, 2022).

The Walnut Creek WTP site is underlain by sedimentary bedrock consisting of sandstone and siltstone with interbeds of shale and claystone described as Miocene age Neroly, Briones, and Hambre formations and the Eocene age Meganos Formation. Surficial deposits present at the Walnut Creek WTP site include alluvial and colluvial soils, and artificial fills placed during previous construction projects. A geologic map for the Walnut Creek WTP site is provided in **Figure 3.6-2** (Ninyo & Moore, 2022). Naturally occurring asbestos can be found in or adjacent to outcrops of sepentinite and ultramafic rocks. Based on the geologic mapping and subsurface exploration performed in the current geologic investigation report and past investigations, there are no serpentinite and ultramafic rocks present at the Walnut Creek WTP site (Ninyo & Moore, 2022). Further, analytical testing on soil and rock samples confirmed that significant concentrations of naturally occurring asbestos are not present at the Walnut Creek WTP site (Ninyo & Moore, 2022).

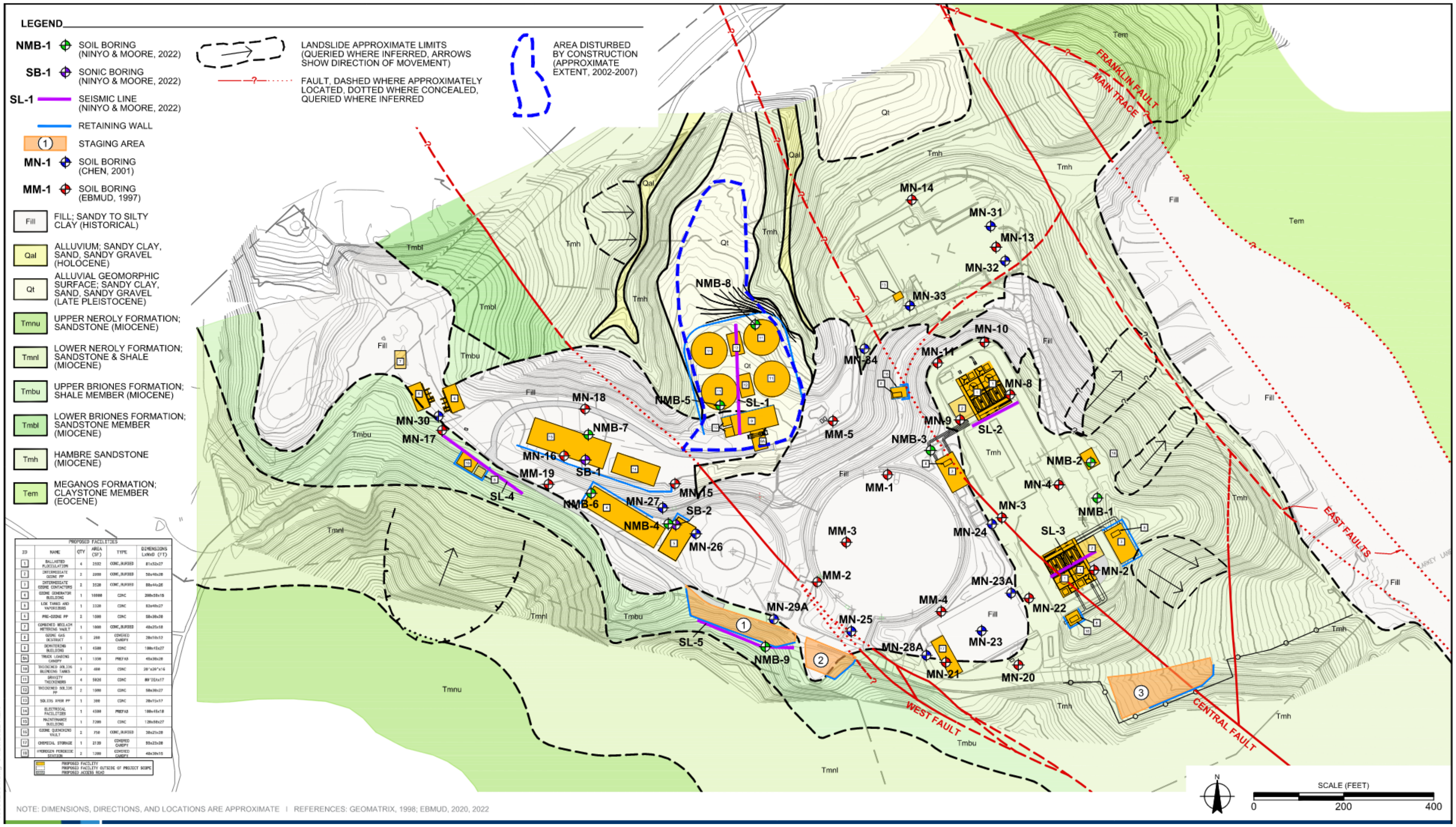
The Lafayette WTP site is underlain by unnamed Miocene to Pliocene age sedimentary bedrock consisting of siltstone, sandstone, and gravelly sandstone which is more soil-like than rock-like and is generally soft and friable, although the sandstone is locally weakly cemented (AGS, 2009). A regional geologic map showing areas surrounding the Lafayette WTP site is provided in **Figure 3.6-3**.

Figure 3.6-1: Walnut Creek WTP Regional Geologic Map



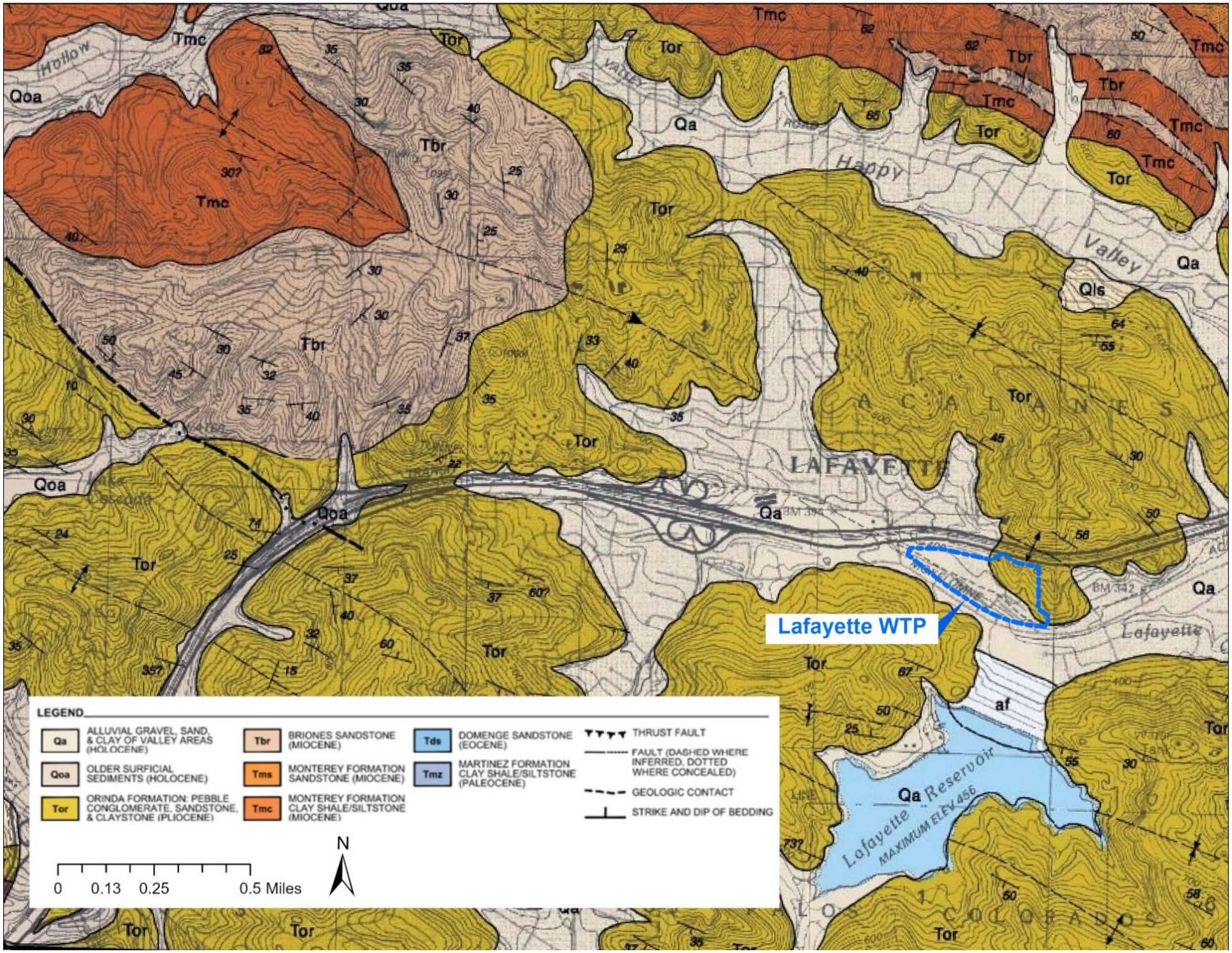
Source: Ninyo & Moore, 2022.
Note: The Walnut Creek WTP site is identified on the map.

Figure 3.6-2: Walnut Creek WTP Site Geology



Source: Ninyo & Moore, 2022.

Figure 3.6-3: Lafayette WTP Regional Geologic Map



Faults and Seismicity

The San Francisco Bay Area is a region of high seismic activity with numerous active and potentially active faults. Major earthquakes have affected the region in the past and are expected to occur in the near future on one of the principal active faults in the San Andreas Fault System. **Figure 3.6-4** presents the location of the Walnut Creek WTP site and Lafayette WTP site relative to these faults and the epicenters of major historic earthquakes.

Several smaller faults have been mapped in the vicinity of the Project. As shown in **Figure 3.6-4**, the Walnut Creek WTP site is transected by secondary fault traces associated with the Franklin Fault. The California Geological Survey (CGS) does not consider the Franklin Fault and secondary fault traces to be active, and therefore the site is not zoned within Earthquake Fault Zones under the Alquist-Priolo Earthquake Fault Zoning Act[1] (Ninyo & Moore, 2022). The Lafayette WTP Site is also not located within an Alquist-Priolo Earthquake Fault Zone.

The Working Group on California Earthquake Probabilities (WGCEP) uses USGS, Southern California Earthquake Center (SCEC), and CGS data to develop statewide, time-dependent earthquake rupture forecasts. WGCEP's most recent earthquake rupture forecast model (2015) shows that in the San Francisco Bay Area overall, the chance of an earthquake with a magnitude of 6.7 or greater within the next 30 years is 72 percent (WGCEP, 2015). Earthquake probability for particular fault zones is summarized in the following sections.

Hayward Fault Zone

The Hayward Fault Zone is an active, right-lateral, strike-slip fault that is designated as an Alquist-Priolo Earthquake Fault Zone. The Hayward Fault Zone has an estimated 14 percent chance of having an earthquake with a magnitude of 6.7 or greater within the next 30 years (WGCEP, 2015). The Hayward Fault Zone has produced large historic earthquakes.

Calaveras Fault Zone

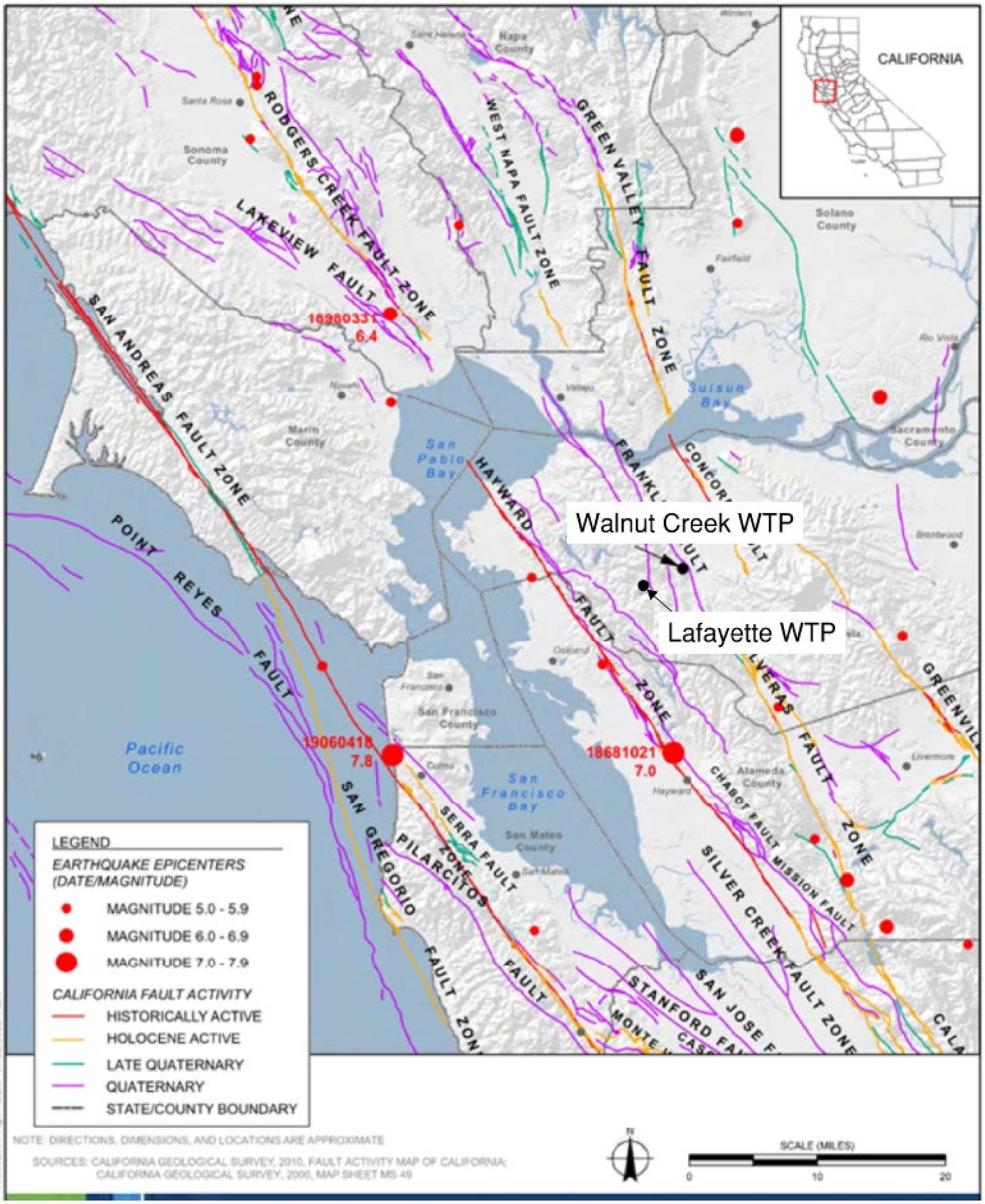
The Calaveras Fault Zone is a major right-lateral, strike-slip fault that is designated as an Alquist-Priolo Earthquake Fault Zone (CDMG, 1981 and CGS, 2016). The Calaveras Fault Zone has an estimated 7 percent probability of having an earthquake with a magnitude of 6.7 or greater within the next 30 years (WGCEP, 2015).

San Andreas Fault Zone

The San Andreas Fault Zone is a major northwest-trending, right-lateral, strike-slip fault zone, which extends for approximately 600 miles from Cape Mendocino to the Gulf of Mexico. Instead of being a single fault trace, the San Andreas Fault Zone is rather a system of active faults that diverge from the main fault south of San Jose. The San Andreas Fault Zone has produced multiple large earthquakes including the 1906 San Francisco earthquake. There is an estimated 6 percent probability of an earthquake within the next 30 years from the San Andreas Fault Zone in the San Francisco Bay Area region (WGCEP, 2015).

[1] The Alquist-Priolo Earthquake Fault Zoning Act (formerly the Alquist-Priolo Special Studies Zone Act), signed into law in December 1972, requires the delineation of zones along active faults in California. The CGS defines an active fault as a fault that has had surface displacement within approximately the last 11,000 years.

Figure 3.6-4: Fault Locations and Earthquake Epicenters near Walnut Creek and Lafayette WTPs



Source: Ninyo & Moore, 2022.

Concord-Green Valley Fault Zone

The Concord-Green Valley Fault Zone is a mostly a right-lateral strike-slip fault zone that is designated as an Alquist-Priolo Earthquake Fault Zones (CGS, 2016) and is characterized by up to approximately 4 millimeters (0.16 inches) per year of creep. The Concord-Green Valley Fault Zone is comprised of the Concord Fault and Green Valley Fault. The Green Valley Fault lies to the north of the Concord Fault and is a direct continuation of the Concord Fault north of Carquinez Straight. At present, there is little information on the date of the last surface-rupturing event on the Concord-Green Valley Fault. The current best estimate is that the last large earthquake on the Concord-Green Valley Fault occurred between 200 to 500 years ago. The 2003 Working Group for California Earthquake Probability assigned a 4 percent probability that the Concord-Green Valley Fault system would produce a magnitude 6.7 or larger earthquake in the next 30 years (USGS, 2022).

Groundshaking

The frequency and intensity of groundshaking from an earthquake is dependent on the magnitude of the earthquake, the distance from the rupturing fault, the type of fault (e.g., strike-slip), and the response of the geologic materials in the location. Groundshaking is defined by the acceleration, velocity, and displacement of the ground, all of which increase with greater earthquake magnitudes and closer proximities to the fault rupture. The groundshaking hazard estimated at the Walnut Creek WTP site, calculated in accordance with the American Society of Civil Engineers standards and the 2019 California Building Code (CBC), is a peak ground acceleration (PGA) of 0.78g, which would result in significant ground shaking (Ninyo & Moore, 2022). Prior seismic evaluations at the Lafayette WTP site indicate a PGA ranging from 0.28g to 0.46g (EBMUD, 2006).

Liquefaction and Lateral Spreading Potential

Liquefaction occurs when strong vibratory motions generated by earthquakes trigger a rapid loss of shear strength experienced in saturated, predominantly loose granular soils of low plasticity associated with an increase in pore water pressure. Liquefaction is generally not a concern at depths greater than 50 feet below ground surface. Liquefaction-induced lateral spreading occurs with the finite, lateral displacement of gently sloping ground due to pore-pressure buildup or liquefaction in shallow underlying deposits during an earthquake. Liquefaction-induced lateral spreading is dependent on complex factors such as the duration and intensity of groundshaking, density of soil, and particle-size distribution.

The Walnut Creek WTP site is in an area characterized by very low susceptibility to liquefaction based on regional studies, and soil susceptible to liquefaction was not encountered during subsurface exploration or previous investigations (Ninyo & Moore, 2022).

The Lafayette WTP site is located in an area with varying liquefaction susceptibility (MTC/ABAG, 2021). The Lafayette WTP site is underlain by sedimentary rock not susceptible to liquefaction that would be confirmed with a future geotechnical investigation at the site. Construction activities would be in the areas underlain by fill over bedrock. Alluvial soils susceptible to liquefaction are primarily located on the western side of the site, where no construction would occur for this Project.

Slope Stability

Ninyo & Moore (2022) performed an analysis to evaluate the impact of the proposed construction on existing slopes at the Walnut Creek WTP site. The results of the analysis indicate that the stability of the analyzed slopes, as modified by the proposed construction, is adequate under static and seismic conditions (Ninyo & Moore, 2022).

The Lafayette WTP Site is relatively flat, largely due to grading completed with prior development (EBMUD, 2006). However, the replacement weir and new pipelines are planned to be constructed on a slope facing towards Mt. Diablo Boulevard. As part of the Project, a geotechnical investigation would be conducted at the Lafayette WTP to gather subgrade information and address seismic-related impacts including slope stability.

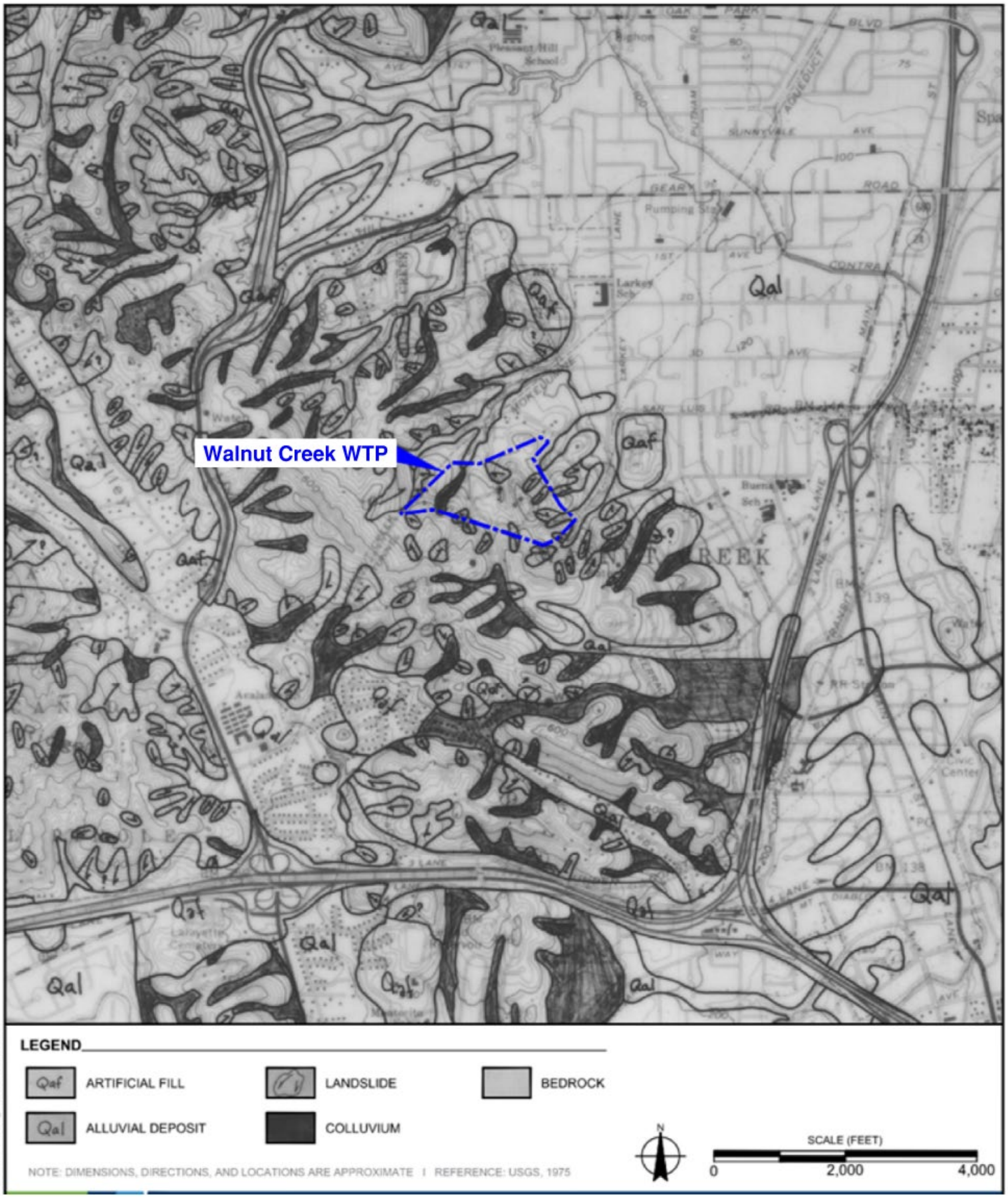
Landslides

Landslides are slope failures triggered by static or dynamic forces, such as gravity or earthquakes, which create downslope displacement and movement of materials. Slope stability plays a role in the occurrence of landslides and is dependent on many complex variables such as geology, structure, amount of groundwater present, climate, slope geometry, topography, and human activity. The intensity of the landslide is affected by the slope angle, water saturation, rock strength, type and extent of vegetation, and mass and thickness of deposits. Slopes that are steeper than 15 percent present potential risks.

Regional landslide maps show several landslides on the slopes along the easterly, western, and northern portions of the Walnut Creek WTP site (**Figure 3.6-5**). (Ninyo & Moore, 2022).

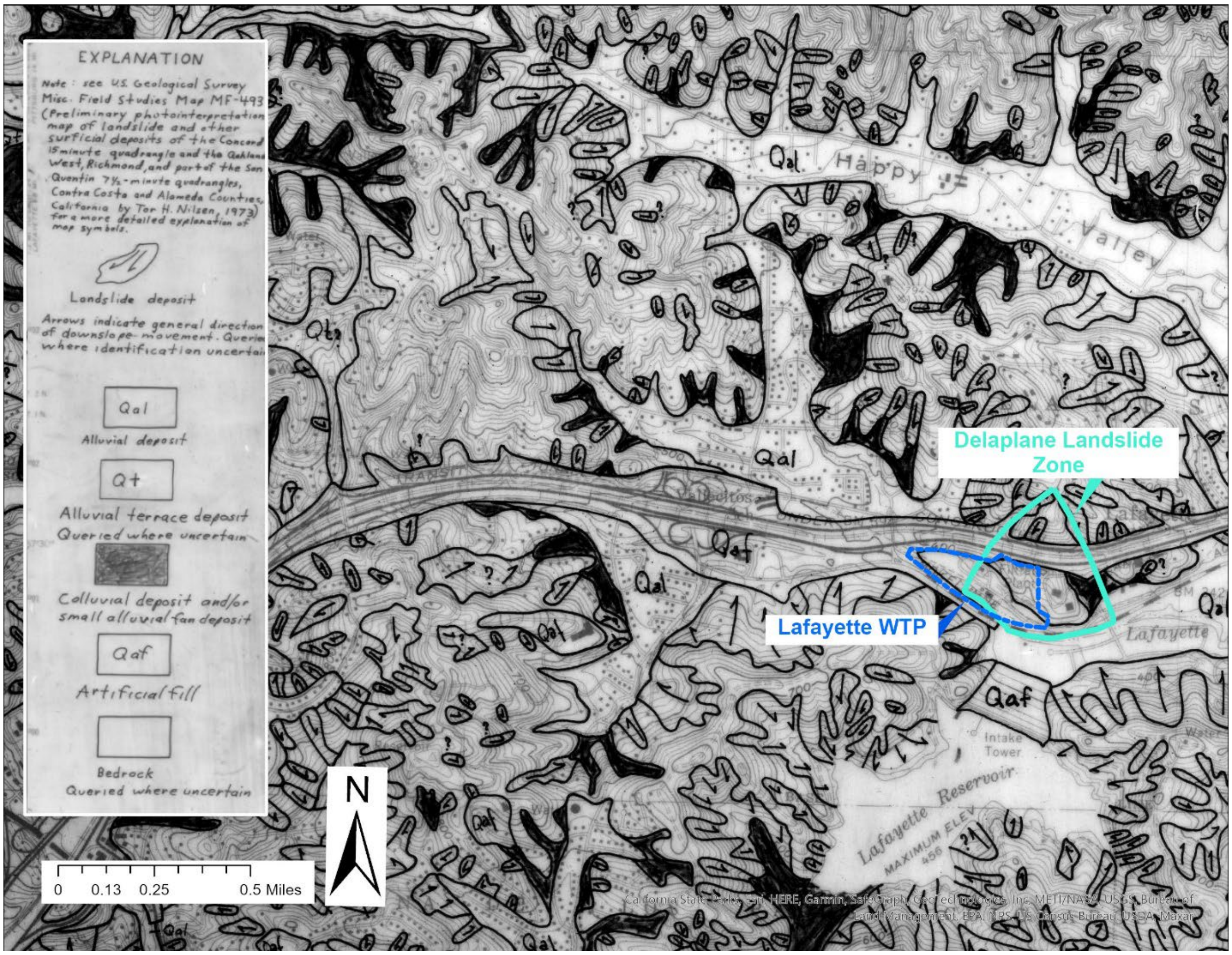
At the Lafayette WTP site, there is the 24-acre Delaplane landslide located along Highway 24 to the east of the El Nido Ranch Road overpass (**Figure 3.6-6**). The Delaplane landslide is actively moving with an overall direction to the south across Highway 24, and potentially to the eastern part of the Lafayette WTP site. The landslide toe appears to be constrained to north of Mt. Diablo Boulevard (Lettis Consultants International, 2021).

Figure 3.6-5: Walnut Creek WTP Regional Landslide Map



Source: Ninyo & Moore, 2022.
Note: The Walnut Creek WTP site is identified on the map.

Figure 3.6-6: Lafayette WTP Regional Landslide Map



Expansive Soils

Expansive soils are typically fine-grained clay sediments that have a “shrink-swell” characteristic by which the sediment has a cyclic change in volume as the soil expands and contracts as it is alternately wetted and dried out. There are many reasons for changes in soil moisture such as irrigation and rainfall. Structural damage may occur to buildings, roads, and other structures over time as the soil expands and contracts.

Soil testing at the Walnut Creek WTP site indicates that the expansion potential of soils at the site ranges from very low to very high (Ninyo & Moore, 2022).

The NRCS Web Soil Survey provides soil data and maps for the United States and was used to evaluate soil expansion hazards at the Lafayette WTP site. The linear extensibility rating percent available through the Web Soil Survey describes the moisture content and shrink-swell change within the soil. The soils at Lafayette WTP site have a linear extensibility rating of 6.9, which is considered a high shrink-swell class (NRCS, 2021 and UC Davis, n.d.). The Clear Lake Clay soil on the southern side of the Lafayette WTP site has a linear extensibility rating of 8.3 percent, which is also considered a high shrink-swell class (NRCS, 2021 and UC Davis, n.d.). Moderate to very high shrink-swell class potentials may cause damage to buildings, roads, and other structures (UC Davis, n.d.). In addition, soils with high to very high shrink-swell class potentials can damage plant roots (UC Davis, n.d.).

Regional Subsidence

Regional subsidence is a gradual lowering of the ground surface that may be caused by consolidation of underlying materials. Consolidation occurs when water or other liquid in the soil’s pore spaces is removed (e.g., through groundwater pumping), causing the soil to weaken. The Project does not include any extraction of groundwater or other liquid, and so it would not cause regional subsidence.

Paleontological Setting

Paleontological resources are fossilized evidence of past life found in the geologic record. Despite the prodigious volume of sedimentary rock deposits preserved worldwide and the enormous number of organisms that have lived through time, preservation of plant or animal remains as fossils is an extremely rare occurrence. Because of the infrequency of fossil preservation, fossils (particularly vertebrate fossils) are considered to be nonrenewable resources. Fossils are also highly significant records of ancient life that can provide significant scientific insights. Paleontological resource localities are sites where the fossilized remains of extinct animals and/or plants have been preserved.

Paleontological resources have the potential to occur in the sedimentary rock formations at the Walnut Creek WTP and Lafayette WTP (EBMUD, 2006).

3.6.2 Regulatory Framework

This section describes policies and regulations related to geology, soils, and seismicity that may apply to the Project.

Federal Policies and Regulations

No federal policies or regulations are applicable to the Project's geology, soils, or seismicity component.

State Policies and Regulations

Alquist-Priolo Earthquake Fault Zoning Act

The State of California passed the Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act) in 1972 after the destructive 1971 San Fernando earthquake to mitigate the hazard of surface faulting to structures for human occupancy. The Alquist-Priolo Act defines an active fault as a fault that has ruptured in the last 11,000 years and requires the State Geologist to determine earthquake fault zones for surface traces of active faults. The Alquist-Priolo Act prohibits construction of buildings for human occupancy across the surface trace of active faults. Each earthquake fault zone extends approximately 200- to 500-feet on either side of the mapped fault trace because many active faults are complex and consist of more than one branch that may experience ground surface rupture. California Code of Regulations (CCR) Title 14, Section 3601(e) defines buildings intended for human occupancy as those that would be inhabited for more than 2,000 hours per year. The Walnut Creek WTP and Lafayette WTP sites are not located within Alquist-Priolo Earthquake Fault Zones.

Seismic Hazards Mapping Act

The State of California passed the Seismic Hazards Mapping Act in 1990 following the 1989 Loma Prieta earthquake to protect public health and safety and minimize property damage from non-surface fault rupture earthquake hazards such as liquefaction and seismically induced landslides. The Seismic Hazards Mapping Act also directs the California Geological Survey to identify and map areas susceptible to earthquake-induced landslides, liquefaction, and ground shaking. For projects that would locate structures for human occupancy within designated Zones of Required Investigation, the Seismic Hazards Mapping Act requires project applicants to perform a site-specific geotechnical investigation to identify the potential site-specific seismic hazards and corrective measures, as appropriate, prior to receiving building permits. The *CGS Guidelines for Evaluating and Mitigating Seismic Hazards* (Special Publication 117A) provides guidance for evaluating and mitigating seismic hazards (CGS, 2008). The CGS is in the process of producing official maps based on USGS topographic quadrangles, as required by the Act. The Project sites lie within the Briones Valley and Walnut Creek Quadrangles, but the CGS has not developed official maps for these quadrangles to date.

General Permit for Discharges of Storm Water Associated with Construction Activity

Control of erosion and sedimentation in stormwater discharges from construction sites is regulated by the State Water Resources Control Board (SWRCB) in their *General Permit for Discharges of Storm Water Associated with Construction Activity,* NPDES Order No. CAS000002, Order No. 2009-0009-DWQ (Construction General Permit). Effective July 1, 2010, the amended Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP) and monitoring program for construction projects that result in one or more acres of land disturbance. The SWPPP must include Best Management Practices (BMPs) that would be implemented during construction to control pollutants in stormwater discharges from the construction site; a visual monitoring program; a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs; and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment.

California Building Code

The CBC has been codified in the CCR as Title 24, Part 2, which is a portion of the California Building Standards Code. The California Building Standards Commission is responsible for coordinating building standards under Title 24. Under state law, all building standards must be centralized in Title 24 or they are not enforceable. The purpose of the CBC is to provide minimum standards to safeguard property and public welfare by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of building and structures within its jurisdiction.

The 2019 CBC was adopted by the California Building Standards Commission on January 1, 2020. The structural loading sections are based on the 2018 International Building Code with the addition of more extensive structural seismic provisions. The CBC is included in Title 24 of the CCR, California Building Standards Code, and is a compilation of three types of building standards from three different origins:

- Building standards that have been adopted by state agencies without change from building standards contained in national model codes;
- Building standards that have been adopted and adapted from the national model code standards to meet California conditions; and
- Building standards authorized by the California legislature that constitute extensive additions not covered by the model codes that have been adopted to address particular California concerns

Seismic sources and the procedures used to calculate seismic forces on structures are defined in Section 1613 of the 2019 CBC. The 2019 CBC requires that all structures, and permanently attached nonstructural components, be designed and built to resist the effects of earthquakes. The CBC also addresses grading and other geotechnical issues, building specifications, and non-building structures.

Local Policies and Regulations

Walnut Creek General Plan

The City of Walnut Creek General Plan is a long-range policy document intended to guide physical, economic, and environmental growth in the City of Walnut Creek. The City of Walnut Creek General Plan contains citywide elements, including a Safety and Noise element and an Archaeological Resources element, which contains goals and objectives to manage seismic and other geologic hazards. The City of Walnut Creek General Plan was adopted in 2006 and has a timeframe that extends to the year 2025. Applicable goals and objectives from the general plan are listed below.

Goal 4-24. Review and conserve archaeological and paleontological resources.

> **Policy 4-24.1.** Review the potential for the presence of archaeological and paleontological resources and remains in or near identified archaeological sites.

Goal 6-1. Protect life and property from geologic hazards.

Policy 6-1.1. Reduce the potential effects of seismic and other geologic hazards, including slope instability.

Policy 6-1.2. "Limit development within high-risk geologic areas to a maximum density of one dwelling unit per 20 acres."[2]

Lafayette General Plan

The City of Lafayette General Plan is a long-range policy document intended to guide physical, economic, and environmental growth in the City of Lafayette. The City of Lafayette General Plan contains citywide elements, including a Safety element and an Open Space element. The City of Lafayette General Plan, which was adopted in 2002 and most recently amended in 2020, has a timeframe that extends to the year 2040. Applicable goals and objectives from the general plan are listed below.

Goal S-1. Minimize risks to Lafayette residents and property from landslides and other geologic hazards.

Policy S-1.1.: Slope and Soil Stability. Consider slope and soil stability when reviewing future projects. Development proposals in areas with landslide hazards shall be reviewed by an engineering geologist to determine whether the proposed development is feasible, and to define the required construction standards and mitigation measures.

Policy S-1.2: Density and Location of Buildings. Limit building in areas with significant risk potential. Intensity of development shall be minimal in areas of high risk. Consider potential seismic or geologic hazards when determining building density and in siting dwellings.

Policy S-1.3: Roadways and Roadway Improvements. Prohibit new roadways or roadway modifications that would create unstable geological conditions. (An example would be cuts and fills in areas with unstable soils.)

Policy S-1.4: Creekbank Protection. Prohibit structures of any kind that might be impacted by creekbank slippage and erosion.

Goal S-2. Minimize risks to Lafayette residents and property from earthquakes.

Policy S-2.1: Seismic Hazards. New development, including subdivisions, new construction, and remodels or expansions of existing structures, shall minimize exposure to seismic hazards through site planning and building design.

Policy S-2.2: Areas of Significant Risk Potential. Locate construction of high density residential and other critical, high-occupancy or essential services buildings outside high risk zones.

Goal OS-7. Protect and preserve soil as a natural resource.

Policy OS-7.1: Control Soil Erosion. Control soil erosion to prevent flooding and landslides, maintain water quality, and reduce public costs of flood control and watercourse maintenance.

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[2]Policy 1.2 addressed the requirements of Measure P, Ord. 1781, 11/5/91, Sections 3g and 3h.

EBMUD Standard Practices

Structures

EBMUD designs all new structures in accordance with the latest edition of the CBC as described above. In addition, EBMUD follows its own Engineering Standard Practice 550.1, Seismic Design Requirements to address seismic and geologic hazards on site, as well as seismic loads on buried vaults.

Pipelines

EBMUD uses two primary Engineering Standard Practices for the design of water pipelines in its distribution system to address geologic hazards. Engineering Standard Practice 512.1, Water Main and Services Design Criteria, establishes basic criteria for the design of water pipelines and establishes minimum requirements for pipeline construction materials. Engineering Standard Practice 550.1, Seismic Design Requirements addresses seismic design of the pipelines to withstand seismic hazards including ground shaking and requires that EBMUD establish project specific seismic design criteria for pipelines with a diameter of greater than 12-inches.

Practices and procedures to avoid seismic hazards include selecting appropriate routing to avoid seismic hazards, use of appropriate materials to withstand seismic hazards, and providing flexibility at locations where the pipeline crosses from one soil condition to another. Engineering Standard Practice 550.1 also requires use of steel pipe with restrained joints or the equivalent to address seismic hazards.

Engineering Standard Practice 550.1 is based on Guidelines for the Seismic Design of Oil and Gas Pipeline Systems prepared by the American Society of Civil Engineers Committee on Gas and Liquid Fuel Lifelines (1984). In addition to the practices and procedures listed above, EBMUD follows the recommendations of the American Water Works Association (AWWA) for the design and installation of steel pipe, including design for the appropriate wall thickness, external loadings, pipeline supports, pipe joints, fittings and appurtenances, corrosion control, and protective coatings and linings

EBMUD Standard Construction Specifications

EBMUD's Standard Construction Specifications and Procedures apply to all contractors completing work for EBMUD, and to work completed by EBMUD staff. The following EBMUD practices and procedures are applicable to geology and soils:

- **EBMUD Standard Construction Specification 01 35 44, Environmental Requirements**

  EBMUD Standard Construction Specification 01 35 44 (Environmental Requirements) sets forth the contract requirements for environmental compliance to which construction crews must adhere, including provisions for protection of water quality during construction (EBMUD, 2023a).

  The General Requirements of EBMUD Standard Construction Specification 01 35 44 stipulate that the construction crew shall be responsible for maintaining compliance with applicable federal, state, and local requirements. The requirements include preparation of plans that outline procedures to be followed to ensure effective stormwater/non-stormwater management and documentation of compliance. EBMUD reviews submittals for conformance with the requirements of the contract document and specified laws and regulations. Specific planning documents and procedures related to protection of water quality that are required by EBMUD for construction are described below.

- **Controls on Site Activities.** EBMUD Standard Construction Specification 01 35 44 Section 1.1(B), Site Activities, requires that activities on the construction site are controlled to prevent discharge of contaminated stormwater. Applicable requirements include:
  - Protect storm drains and surface waters from impacts of project activity.
  - Store materials and wastes such as demolition material, soil, sand, asphalt, rubbish, paint, cement, concrete or washings thereof, oil or petroleum products, or earthen materials in a manner to prevent it from being washed by rainfall or runoff outside the construction limits.
  - Reuse or dispose of excess material consistent with all applicable legal requirements and disposal facility permits.
  - Clean up all spills and immediately notify the Engineer in the event of a spill.
  - Equip stationary equipment such as motors, pumps, and generators with drip pans.
  - Divert or otherwise control surface water and waters flowing from existing projects, structures, or surrounding areas from coming onto the work and staging areas. The method of diversions or control shall be adequate to ensure the safety of stored materials and of personnel using these areas.
  - Following completion of Work, remove ditches, dikes, or other ground alterations made by the Contractor. The ground surfaces shall be returned to their former condition, or as near as practicable, in the Engineer's opinion.
  - Prevent visible dust emissions from leaving the work areas.
  - Maintain construction equipment in good operating condition to reduce emissions.
  - Handle, store, apply, and dispose of any chemical or hazardous material used in the performance of the Work in a manner consistent with all applicable federal, state, and local laws and regulations.
- **Storm Water Management.** EBMUD Standard Construction Specification 01 35 44 Section 1.4(A), Storm Water Management, requires submittal of a Stormwater Pollution Prevention Plan (SWPPP) that describes measures that shall be implemented to prevent the discharge of contaminated storm water runoff from the jobsite. Contaminants to be addressed include, but are not limited to, soil, sediment, concrete residue, pH less than 6.5 or greater than 8.5, and chlorine residual and all other contaminants known to exist at the jobsite location as described in Document 00 31 24 – Materials Assessment Information. In addition to the State’s General Construction Stormwater Permit, the Contractor shall obtain and comply with regulatory requirements of local storm water permits, such as Contra Costa County’s County Watershed Program to enable the inspection of C.6 construction stormwater BMPs.

- **EBMUD Standard Construction Specification 01 35 45, Biological, Cultural, and Paleontological Resource Requirements, Section 3.3, Protection of Cultural and Paleontological Resources**

  EBMUD Standard Construction Specification 01 35 45 (Biological, Cultural, and Paleontological Resource Requirements), sets forth the contract requirements for environmental compliance to which construction crews must adhere. Section 3.3, Protection of Cultural and Paleontological Resources, defines provisions for protection of cultural resources during construction. The contractor would be required to comply with the following (EBMUD, 2023b):

  - Contractors conform to the requirements of statutes as they relate to the protection and preservation of cultural and paleontological resources.
  - Before beginning construction, all Contractor construction personnel involved in ground disturbing activities shall attend a cultural and paleontological resources training course.
    - All Contractor construction personnel involved in ground disturbing activities must sign an attendance sheet provided by the Engineer to verify that they have attended the appropriate level of training and will comply with all project environmental requirements.
  - In the event that potential paleontological resources are discovered at the site of construction, the following procedures shall be instituted:
    - Discovery of paleontological resources requires that all construction activities immediately cease at, and within 100 feet of the location of discovery.
    - The Contractor shall immediately notify the Engineer who will engage a qualified paleontologist provided by EBMUD to evaluate the find. The Contractor is responsible for stopping work and notifying the Engineer, and shall not recommence work until authorized to do so by the Engineer.
    - EBMUD will retain a qualified paleontologist to inspect the findings within 24 hours of discovery. The qualified paleontologist, in accordance with Society of Vertebrate Paleontology guidelines (Society of Vertebrate Paleontology 2010), will assess the nature and importance of the find and recommend appropriate salvage, treatment, and future monitoring and management. If it is determined that construction activities could damage a paleontological resource as defined by the Society of Vertebrate Paleontology guidelines (Society of Vertebrate Paleontology 2010), construction shall cease in an area determined by the paleontologist until a salvage, treatment, and future monitoring and management plan has been prepared, approved by EBMUD, and implemented to the satisfaction of the paleontologist. In consultation with the paleontologist, EBMUD will determine when construction can resume.
    - If EBMUD determines that the find requires further evaluation, at the direction of Engineer, the Contractor shall suspend all construction activities at the location of the find and within a larger radius, as required.

- **EBMUD Standard Construction Specification 01 35 24, Project Safety Requirements, Section 1.3 (L), Excavation Safety Plan**

  EBMUD Standard Construction Specification 01 35 24, Project Safety Requirements, Section 1.3(L), Excavation Safety Plan, includes practices and procedures for minimizing safety hazards during excavation. Section 6705 of the Labor Code requires that the excavation of any trench 5 feet or more in depth shall not begin until the Contractor has received from the Engineer notification of the Engineer's acceptance of the Contractor's detailed plan for worker protection from the hazards of caving ground during the excavation of such trench. The plan shall show the details of the design of shoring, bracing, sloping or other provisions to be made for worker protection during such excavation. The plan also shall meet the requirements of the Construction Safety Orders, Title 8, CCR. In addition, the contractor shall obtain an excavation permit per Cal/OSHA Title 8, CCR section 341(a)(1). California Government Code section 4216 describes the requirements and procedures for excavation notifications and utility excavation.

- **EBMUD Standard Construction Specification 01 81 02, Seismic Design Criteria**

  EBMUD Standard Construction Specification 01 81 02, Seismic Design Criteria, sets forth architectural design requirements comply with seismic requirements contained in the CBC and ASCE 7, Minimum Design Loads for Buildings and Other Structures.

  - **Design Requirements.** EBMUD Standard Construction Specification 01 81 02 Section 1.2(A), Design Requirements, requires that architectural elements, mechanical and electrical components, equipment housings and their attachments, supporting structures, and anchorages comply with the requirements of ASCE 7. For example, seismic forces should be resisted through direct bearing on anchors and fasteners; friction should not be used to resist seismic forces. Anchoring and fastening to concrete and masonry should be installed appropriately and cast-in whenever possible.
  - **Seismic Qualification and Certification.** EBMUD Standard Construction Specification 01 81 02 Section 1.3, Seismic Qualification and Certification, requires that the equipment and all components listed in this specification shall not undergo loss of their intended function after application of the Code prescribed seismic forces as specified in Section 01 43 11.
  - **Submittals.** EBMUD Standard Construction Specification 01 81 02 Section 1.4, Submittals, requires that Seismic Qualification and Certification shall be verified by an approved calculation that demonstrates the adequacy of the system for seismic forces. This calculation may be based on principles of structural analysis and engineering mechanics, or based on similarity to approved shake table tests as specified in Section 01 43 11. The Contractor shall submit for review and approval test data or calculations signed and sealed by a Civil or Structural Engineer registered in the State of California to show compliance with the above requirements.

3.6.3 Impact Analysis

Methodology for Analysis

Geological impacts are assessed based on the Project's level of physical impacts on geology, soils, and seismicity in the Project's vicinity.

Information for the assessment of impacts on geology, soils, and seismicity is based on the 2022 Geotechnical Interpretive Report prepared for the Walnut Creek WTP site, in addition to a review of literature (geologic, seismic, and soils reports and maps), information from geologic and seismic databases, the City of Walnut Creek General Plan, and the City of Lafayette General Plan. The information was used to identify potential impacts on workers, the public, or the environment.

Significance Criteria

Consistent with Appendix G of the *CEQA Guidelines* an impact on geology, soils and seismicity would be considered significant if the Project would:

1. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
    a. 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.
    b. Strong seismic ground shaking.
    c. Seismic-related ground failure, including liquefaction.
    d. Landslides.
2. Result in substantial soil erosion or the loss of topsoil.
3. 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.
4. 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.
5. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.
6. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Criteria Requiring No Further Evaluation

Criteria listed above that are not applicable to actions associated with the Project are identified below, along with a supporting rationale as to why further consideration is unnecessary and a no-impact determination is appropriate.

- ***Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater (Criterion 5)***. The Project would not include the installation of septic tanks or alternative wastewater disposal systems. Therefore, there would be no impacts related to suitability of soils for septic tanks or alternative wastewater disposal systems.

Impacts and Mitigation Measures

Impact GEO-1: Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: rupture of a known earthquake fault; strong seismic groundshaking; seismic-related ground failure (liquefaction, lateral spreading); or landslides. (Criterion 1(a) (b) (c) (d))

Walnut Creek WTP Construction Phase 1 and 2

Rupture of a Known Earthquake Fault. The Walnut Creek WTP is not located within an Alquist-Priolo Earthquake Fault Zone established by the CGS, as designated through the Alquist-Priolo Earthquake Fault Zoning Act (Ninyo & Moore, 2022). Because none of the Walnut Creek WTP Project elements are within an Alquist-Priolo Earthquake Fault Zone and no mapped active faults are known to pass through the immediate Project region, the risk of ground rupture is low, and the impact is considered less than significant.

Strong Seismic Groundshaking. Seismic-related groundshaking presents a serious risk to humans and structures. As described above, there is an estimated 72 percent probability of having an earthquake with a magnitude of 6.7 or greater in the San Francisco Bay Area within the next 30 years, which would produce severe to violent groundshaking in the vicinity of the rupturing fault. The effects of a rupture from a major fault such as the San Andreas Fault or Hayward Fault could result in potentially significant seismic groundshaking impacts throughout the Bay Area. Based on historic seismicity, the Walnut Creek WTP could experience significant ground shaking during a large, local earthquake.

A geotechnical analysis has been conducted to address seismic-related impacts including groundshaking in the final design and, if necessary, during construction. Site-specific design-level geotechnical evaluations have been performed, which included subsurface drilling, soil testing, and analysis of site seismic response. Additionally, a geotechnical engineer has developed the seismic design parameters for new facilities to ensure that facilities are designed per applicable CBC requirements. Recommendations resulting from findings of the geotechnical study are presented in the Geotechnical Interpretive Report (**Appendix H**) and would be incorporated into the design and construction of proposed facilities.

To withstand strong seismic groundshaking, all new structures and foundations would be designed to meet or exceed applicable seismic design criteria within the latest version of the CBC, per the recommendations in the Geotechnical Interpretive Report. Pipelines and buried vaults would be designed per EBMUD Engineering Standard Practice 512.1, which establishes basic criteria for the design of water pipelines and establishes minimum requirements for pipeline construction materials, and Engineering Standard Practice 550.1, Seismic Design Requirements. In addition, non-structural project elements would be designed per EBMUD Standard Construction Specification 01 81 02, Seismic Design Criteria, which each require that project elements are designed, constructed, and installed in conformance with the seismic requirements contained in the CBC and ASCE 7, Minimum Design Loads for Buildings and Other Structures, in order to resist seismic forces.

Because all new facilities would be designed and constructed in accordance with applicable seismic design criteria, and because facilities at the Walnut Creek WTP would also be designed per applicable recommendations presented in the Geotechnical Interpretive Report (**Appendix H**), all new structures would be built to withstand seismic shaking and the risk of loss, injury, or death involving strong seismic groundshaking is low, and impacts are considered less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (**Appendix E**) lists the applicable standard specifications language.

Seismic-Related Ground Failure. Throughout the Walnut Creek WTP site, soils susceptible to liquefaction were not encountered during subsurface exploration or previous investigations, indicating that the Project is not at risk for liquefaction and related hazards (Ninyo & Moore, 2022). Because soil susceptible to liquefaction was not encountered during prior investigations at the Walnut Creek WTP site, the risk of loss, injury, or death from seismic-related ground failure (such as liquefaction or lateral spreading) is low, and impacts are considered less than significant.

Landslides. Groundshaking during earthquakes could trigger landslides at the Walnut Creek WTP site. While several landslides exist on the slopes along the easterly, western, and northern portions of the Walnut Creek WTP (shown previously in Figure **3.6-5**), with the exception of the southern Intermediate Ozone Contactor, the mapped landslides do not overlap with the proposed facilities. The southern Intermediate Ozone Contactor overlaps with a mapped landslide extending down the adjacent slope to the southeast but with the estimated pad grade for the tank at 20 to 27 feet below the existing grade and on formational material, below the colluvium prone to sliding (Ninyo & Moore, 2022).

The slope stability analysis performed by Ninyo & Moore (2022) to evaluate the impact of the proposed construction on existing slopes at the Walnut Creek WTP indicated that slope stability, as modified by the proposed construction, is adequate under static and seismic conditions (Ninyo & Moore, 2022). Because the modified slopes are anticipated to be stable with the proposed improvements, the risk of loss, injury, or death involving landslides is low, and impacts are considered less than significant.

Lafayette WTP Construction

Rupture of a Known Earthquake Fault. The Lafayette WTP is not located within an Alquist-Priolo Earthquake Fault Zone established by the CGS, as designated through the Alquist-Priolo Earthquake Fault Zoning Act (CGS, 2016). Because none of the Lafayette WTP Project elements are within an Alquist-Priolo Earthquake Fault Zone and no mapped active faults are known to pass through the immediate Project region, the risk of ground rupture is low, and the impact is considered less than significant.

Strong Seismic Groundshaking. As described above, there is an estimated 72 percent probability of having an earthquake with a magnitude of 6.7 or greater in the San Francisco Bay Area within the next 30 years, which would produce severe to violent groundshaking in the vicinity of the rupturing fault. The effects of a rupture from a major fault such as the San Andreas Fault or Hayward Fault could result in potentially significant seismic groundshaking impacts throughout the Bay Area. Based on historic seismicity, the Lafayette WTP could experience significant ground shaking during a large, local earthquake.

A geotechnical investigation would be conducted at the Lafayette WTP to gather subgrade information and address seismic-related impacts including groundshaking in the final design. Site-specific design-level geotechnical evaluations would be performed, including subsurface drilling, soil testing, and analysis of site seismic response. A geotechnical engineer would develop the seismic design parameters for new facilities to ensure that facilities are designed per applicable CBC requirements. Recommendations resulting from findings of the geotechnical study would be incorporated into the design and construction of proposed facilities.

To withstand strong seismic groundshaking, all new structures and foundations would be designed to meet or exceed applicable seismic design criteria within the latest version of the CBC, per the geotechnical recommendations. Pipelines and buried vaults would be designed per EBMUD Engineering Standard Practice 512.1 which establishes basic criteria for the design of water pipelines and establishes minimum requirements for pipeline construction materials, and Engineering Standard Practice 550.1, Seismic Design Requirements. In addition, non-structural project elements would be designed per EBMUD Standard Construction Specification 01 81 02, Seismic Design Criteria, which each require that project elements are designed, constructed, and installed in conformance with the seismic requirements contained in the CBC and ASCE 7, Minimum Design Loads for Buildings and Other Structures, in order to resist seismic forces. Because all new facilities would be designed and constructed in accordance with applicable seismic design criteria, and because facilities at the Lafayette WTP would also be designed per applicable recommendations presented in the geotechnical report, all new structures would be built to withstand seismic shaking and the risk of loss, injury, or death involving strong seismic groundshaking is low, and impacts are considered less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (**Appendix E**) lists the applicable standard specifications language.

Seismic-Related Ground Failure. The Project area at the Lafayette WTP site is underlain by unnamed Miocene to Pliocene age sedimentary bedrock consisting of siltstone, sandstone, and gravelly sandstone which is not susceptible to seismic-related ground failure such as liquefaction or lateral spreading. However, a geotechnical investigation would be conducted at the Lafayette WTP to gather subgrade information and address seismic-related impacts including liquefaction in the final design. Site-specific design-level geotechnical evaluations would be performed, including subsurface drilling, soil testing, and analysis of site seismic response. A geotechnical engineer would develop the seismic design parameters for new facilities to ensure that facilities are designed per applicable CBC requirements. Recommendations resulting from findings of the geotechnical study would be incorporated into the design and construction of proposed facilities.

Because all new facilities would be designed and constructed in accordance with applicable seismic design criteria, and because facilities at the Lafayette WTP would also be designed per applicable recommendations presented in the geotechnical report, all new structures would be built such that the risk of loss, injury, or death involving seismic-related ground failure is low, and the impacts are considered less than significant.

Landslides. Groundshaking during earthquakes could trigger landslides at the Lafayette WTP. The Delaplane landslide is a large, active landslide beneath the Lafayette WTP that has the potential to create a hazard risk (Lettis Consultants International, 2021). A geotechnical investigation would be conducted at the Lafayette WTP to gather subgrade information and address seismic-related impacts including landslides in the final design. Site-specific design-level geotechnical evaluations would be performed, including subsurface drilling, soil testing, and analysis of site seismic response. A geotechnical engineer would develop the seismic design parameters for new facilities to ensure that facilities are designed per applicable CBC requirements. Recommendations resulting from findings of the geotechnical study would be incorporated into the design and construction of proposed facilities.

Because all new facilities would be designed and constructed in accordance with applicable seismic design criteria, and because facilities at the Lafayette WTP would also be designed per applicable recommendations presented in the geotechnical report, all new structures would be built such that the risk of loss, injury, or death involving landslides is low, and the impacts are considered less than significant.

Operation and Maintenance

Operation and maintenance of water treatment facilities does not entail high seismic or landslide risk. The Project would be designed and managed for seismic prevention (including following applicable design criteria and planting of trees), and seismic and landslide risk at the site would be comparable to the existing operations at the Walnut Creek WTP.

Improvements at the Lafayette WTP include raising one existing weir, replacing one existing weir, and building new pipelines. Operational changes at the Lafayette WTP site would be minimal and include the ability to raise and lower the new weirs. The Project would be designed and managed for seismic prevention (including following applicable design criteria and planting of trees), and seismic and landslide risk at the site would be comparable to the existing operations at the Lafayette WTP.

Because the Project would be designed and managed for seismic prevention, and seismic and landslide risk would be comparable to existing operation and maintenance at both the Walnut Creek WTP and Lafayette WTP, operational impacts related to seismic and landslide hazards are considered to be less than significant.

Significance Determination Before Mitigation

Less than significant.

Mitigation Measures

None required.

Impact GEO-2: Result in substantial soil erosion or the loss of topsoil. (Criterion 2)

Walnut Creek WTP Construction Phase 1 and 2

During construction, wet weather conditions may temporarily increase the potential for soil erosion or loss of topsoil in areas with steeper slopes at the Walnut Creek WTP site. Because the Project would disturb more than one acre, coverage under the National Pollutant Discharge Elimination System (NPDES) Construction General Permit would be required and one or more SWPPPs would be developed and implemented for the various stages of the Project over time. At the Walnut Creek WTP, site preparation work would be completed prior to the start of construction. Site preparation would include installation of stabilized internal access road and erosion controls.

As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including Section 1.1(B), Site Activities, which includes provisions for preventing soil erosion and loss during construction, including the diversion of surface waters and maintenance of the construction site to minimize erosion and loss of soil. EBMUD's Standard Construction Specification 01 35 44, Section 1.4(A), Storm Water Management, also requires erosion control measures such as installation of proper drainage to minimize the impact of soil erosion during storm weather (e.g., rain, wind) and other wet conditions, and implementation of BMPs for erosion and sediment controls through a SWPPP. In addition, exposed soils at the Walnut Creek WTP would be hydroseeded with EBMUD's standard hydroseed mix upon the completion of construction to prevent erosion of topsoil.

Because EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, Section 1.1(B) and EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, Section 1.4(A) have been incorporated into the Project and include practices and regulations to reduce erosion and control sediment, construction would not cause substantial soil erosion or the loss of topsoil, and the impact would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (**Appendix E**) lists the applicable standard specifications language.

Lafayette WTP Construction

During construction, wet weather conditions may temporarily increase the potential for soil erosion or loss of topsoil. Improvements at the Lafayette WTP would involve excavation into an existing slope to construct the replacement weir and new pipelines. During construction, wet weather conditions may temporarily increase the potential for soil erosion or loss of topsoil in areas with steeper slopes at the Lafayette WTP site.

At the Lafayette WTP, site preparation work would be completed prior to the start of construction. Site preparation would include installation of stabilized internal access road and erosion controls.

As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, Section 1.1(B), Site Activities, which includes provisions for preventing soil erosion and loss during construction, including the diversion of surface waters and maintenance of the construction site to minimize erosion and loss of soil. EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements, Section 1.4(A), Storm Water Management, also requires erosion control measures such as installation of proper drainage to minimize the impact of soil erosion during storm weather (e.g., rain, wind) and other wet conditions, and implementation of BMPs for erosion and sediment controls through a SWPPP. In addition, exposed soils at the Lafayette WTP would be hydroseeded with EBMUD's standard hydroseed mix upon the completion of construction to prevent erosion of topsoil.

Because EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, Section 1.1(B), EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, Section 1.4(A), and EBMUD Standard Construction Specification 01 35 34, Project Safety Requirements, Section 1.3(L) have been incorporated into the Project and includes practices and regulations to reduce erosion and control sediment and the development of an

Excavation Safety Plan, construction would not cause substantial soil erosion or the loss of topsoil making the Project's potential for impact less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (**Appendix E**) lists the applicable standard specifications language.

Operation and Maintenance

Following construction, potential for substantial soil erosion or loss of topsoil at the Walnut Creek WTP site is minimized as revegetation for erosion control/site stabilization would be established. Erosion control measures implemented during construction would reduce the potential for short- or long-term structural damage to fills, foundations, and other engineered structures. Because site stabilization would be established, impacts on substantial soil erosion or loss of topsoil would be less than significant.

Improvements at the Lafayette WTP include raising one existing weir, replacing one existing weir, and new pipelines. Following construction, potential for substantial soil erosion or loss of topsoil at the Lafayette WTP site is minimized as revegetation for erosion control/site stabilization would be established. Erosion control measures implemented during construction would reduce the potential for short- or long-term structural damage to fills, foundations, and other engineered structures. Because site stabilization would be established, impacts on substantial soil erosion or loss of topsoil would be less than significant.

Significance Determination Before Mitigation

Less than significant.

Mitigation Measures

None required.

Impact GEO-3: 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. (Criterion 3)

Walnut Creek WTP Construction Phase 1 and 2

Landslides: Groundshaking during earthquakes could trigger landslides at the Walnut Creek WTP. While several landslides exist on the slopes along the easterly, western, and northern portions of the Walnut Creek WTP (shown previously in Figure **3.6-5**), with the exception of the southern Intermediate Ozone Contactor, the mapped landslides do not overlap with the proposed facilities. The southern Intermediate Ozone Contactor overlaps with a mapped landslide extending down the adjacent slope to the southeast but with the estimated pad grade for the tank at 20 to 27 feet below the existing grade and on formational material, below the colluvium prone to sliding (Ninyo & Moore, 2022).

The slope stability analysis performed by Ninyo & Moore (2022) to evaluate the impact of the proposed construction on existing slopes at the Walnut Creek WTP indicated that slope stability, as modified by the proposed construction, is adequate under static and seismic conditions (Ninyo & Moore, 2022).

A geotechnical analysis has been conducted to address seismic-related impacts including landslides in the final design. Site-specific design-level geotechnical evaluations have been performed, which included subsurface drilling, soil testing, and analysis of site seismic response. Additionally, a geotechnical engineer has developed the seismic design parameters for new facilities to ensure that facilities are designed per applicable CBC requirements. Recommendations resulting from findings of the geotechnical study are presented in the Geotechnical Interpretive Report (**Appendix H**) and would be incorporated into the design and construction of proposed facilities.

Because the modified slopes are anticipated to be stable with the proposed improvements, and the southern Intermediate Ozone Contractor would be sited on formational material below the soils prone to sliding, the risk of landslides as a result of the Project is low, and impacts are considered less than significant.

Liquefaction and Lateral Spreading: Throughout the Walnut Creek WTP site, soils susceptible to liquefaction were not encountered during subsurface exploration or previous investigations, indicating that the Project is not at risk for liquefaction and related hazards (Ninyo & Moore, 2022).

A geotechnical analysis has been conducted to address seismic-related impacts including liquefaction and lateral spreading in the final design. Site-specific design-level geotechnical evaluations have been performed, which included subsurface drilling, soil testing, and analysis of site seismic response. Additionally, a geotechnical engineer has developed the seismic design parameters for new facilities to ensure that facilities are designed per applicable CBC requirements. Recommendations resulting from findings of the geotechnical study are presented in the Geotechnical Interpretive Report (**Appendix H**) and would be incorporated into the design and construction of proposed facilities. Because soil susceptible to liquefaction was not encountered during prior investigations at the Walnut Creek WTP site, the risk of liquefaction and lateral spreading as a result of the Project is considered low, and impacts are considered less than significant.

Subsidence and Soil Collapse: Soils susceptible to subsidence or collapse are typically associated with projects that inject or extract groundwater and/or oil. The Project would not inject or extract groundwater and/or oil or impact groundwater levels. Unsupported excavations into soft or loose soils can also cause soil collapse. The Project would require excavation for pipeline installation and to construct below grade structures.

As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including EBMUD Standard Construction Specification 01 35 24, Project Safety Requirements, Section 1.3(L), Excavation Safety Plan, which includes practices and procedures for minimizing safety hazards during excavation, including provisions for worker protections in the design of shoring, bracing, and sloping. Because the Project would not inject or extract groundwater and/or oil, and EBMUD Standard Construction Specification 01 35 24, Project Safety Requirements, Section 1.3(L), Excavation Safety Plan, has been incorporated into the Project and includes measures to prevent subsidence and soil collapse during pipeline installation, the Project is not anticipated to result in subsidence or soil collapse, and impacts from unstable soils would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (**Appendix E**) lists the applicable standard specifications language.

Lafayette WTP Construction

Landslides: Groundshaking during earthquakes could trigger landslides at the Lafayette WTP. The Delaplane landslide is a large, active landslide beneath the Lafayette WTP that has the potential to create a hazard risk (Lettis Consultants International, 2021). A geotechnical investigation would be conducted at the Lafayette WTP to gather subgrade information and address seismic-related impacts including landslides in the final design. Site-specific design-level geotechnical evaluations would be performed, including subsurface drilling, soil testing, and analysis of site seismic response. A geotechnical engineer would develop the seismic design parameters for new facilities to ensure that facilities are designed per applicable CBC requirements. Recommendations resulting from findings of the geotechnical study would be incorporated into the design and construction of proposed facilities.

Because all new facilities would be designed and constructed in accordance with applicable seismic design criteria, and because facilities at the Lafayette WTP would also be designed per applicable recommendations presented in the geotechnical study, all new structures would be built such that the risk of landslide as a result of the Project is low, and the impacts are considered less than significant.

Liquefaction and Lateral Spreading: The Project area at the Lafayette WTP site is underlain by unnamed Miocene to Pliocene age sedimentary bedrock consisting of siltstone, sandstone, and gravelly sandstone which, is not susceptible to seismic-related ground failure such as liquefaction or lateral spreading. However, a geotechnical investigation would be conducted at the Lafayette WTP to gather subgrade information and address seismic-related impacts including landslides in the final design. Site-specific design-level geotechnical evaluations would be performed, including subsurface drilling, soil testing, and analysis of site seismic response. A geotechnical engineer would develop the seismic design parameters for new facilities to ensure that facilities are designed per applicable CBC requirements. Recommendations resulting from findings of the geotechnical study would be incorporated into the design and construction of proposed facilities.

Because all new facilities would be designed and constructed in accordance with applicable seismic design criteria, and because facilities at the Lafayette WTP would also be designed per applicable recommendations presented in the geotechnical study, all new structures would be built such that the risk of liquefaction and lateral spreading as a result of the Project is low, and the impacts are considered less than significant.

Subsidence and Soil Collapse: Soils that are susceptible to subsidence or collapse are typically associated with projects that inject or extract groundwater and/or oil. The Project would not inject or extract groundwater and/or oil or impact groundwater levels. Unsupported excavations into soft or loose soils can also cause soil collapse. The Project would require excavation for construction of the replacement weir structure.

As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including EBMUD Standard Construction Specification 01 35 24, Project Safety Requirements, Section 1.3(L), Excavation Safety Plan, includes practices and procedures for minimizing safety hazards during excavation, including provisions for worker protections in the design of shoring, bracing, and sloping.

Because the Project would not inject or extract groundwater and/or oil, and EBMUD Standard Construction Specification 01 35 24, Project Safety Requirements, Section 1.3(L), Excavation Safety Plan, has been incorporated into the Project and includes measures to prevent subsidence and soil collapse during pipeline installation, the Project is not anticipated to result in subsidence or soil collapse, and impacts from unstable soils would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (**Appendix E**) lists the applicable standard specifications language.

Operation and Maintenance

Landslides: Project operation and maintenance at the Walnut Creek WTP would not involve soil excavation or other land disturbing activities. Improvements at the Lafayette WTP includes raising an existing weir, replacing an existing weir, and installing new pipelines. Because Project operation and maintenance would not involve soil excavation or land disturbing activities, the potential impact of operational activities with regard to landslides is considered less than significant.

Liquefaction and Lateral Spreading: The Walnut Creek WTP site is in an area characterized by very low susceptibility to liquefaction based on regional studies, and soil susceptible to liquefaction was not encountered during subsurface exploration or previous investigations (Ninyo & Moore, 2022).The Lafayette WTP site is underlain by sedimentary rock not susceptible to liquefaction that would be confirmed with a future geotechnical investigation at the site. Because Project operation and maintenance would not involve ground disturbing activities or injections that could trigger localized earthquakes and/or liquefaction and lateral spreading, the impact is considered less than significant.

Subsidence and Soil Collapse: Project operation and maintenance would not involve the injection or extraction of groundwater and/or oil or impact groundwater levels, or require excavation into soft or loose soils, and therefore is unlikely to result in subsidence or soil collapse. Because the Project would not involve injection of groundwater and/or oil, or involve ground disturbing activities, impacts from unstable soils would be less than significant.

<u>Significance Determination Before Mitigation</u>

Less than significant.

<u>Mitigation Measures</u>

None required.

Impact GEO-4: 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. (Criterion 4)

Walnut Creek WTP Construction Phase 1 and Phase 2

Soils at the Walnut Creek WTP site range from having very low to very high expansion potential (Ninyo & Moore, 2022). Project elements located in areas with moderate to high expansion characteristics are expected to have these soils excavated and replaced with appropriate fill. On-site materials would be used at structures located within a few feet of finish grade. Because excavation of expansive soils and replacement with additional fill would be used in subgrade locations with moderate to high expansion characteristics, impacts related to construction at the Walnut Creek WTP would not create a risk to life or property and would therefore be less than significant.

Lafayette WTP Construction

Improvements at the Lafayette WTP include raising an existing weir, replacing an exhibit weir, and installing new pipelines. The Lafayette WTP site is underlain by sedimentary rock not susceptible to liquefaction that would be confirmed with a future geotechnical investigation at the site which would include recommendations on how to address expansive soils if encountered. Because excavation of expansive soil and replacement with additional fill would be used in subgrade locations with moderate to high expansion characteristics, impacts related to construction at the Lafayette WTP would not create a risk to life or property and would therefore be less than significant.

Operation and Maintenance

As stated above, Project elements located in subgrade areas with moderate to high expansion characteristics are expected to have the expansive soils removed and replaced with additional fill. Because additional fill would be used in locations with moderate to high expansion characteristics, impacts related to operation and maintenance at the Walnut Creek WTP would not create a risk to life or property and would therefore be less than significant.

Improvements at the Lafayette WTP include raising an existing weir, replacing an existing weir, and installing new pipelines. Because additional fill would be used in locations with moderate to high expansion characteristics, impacts related to operation and maintenance at the Lafayette WTP would not create a risk to life or property and would therefore be less than significant.

Significance Determination Before Mitigation

Less than significant.

Mitigation Measures

None required.

Impact GEO-5: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. (Criterion 6)

Walnut Creek WTP Construction Phase 1 and Phase 2

Paleontological resources have the potential to occur in the sedimentary rock formations at the Walnut Creek WTP (EBMUD, 2006). As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including EBMUD Standard Construction Specification 01 35 45, Biological, Cultural, and Paleontological Resource Requirements Section 3.3, Protection of Cultural and Paleontological Resources, which outlines paleontological resource protection measures such as requiring construction personnel to undergo a paleontological resources training and immediately stop work if paleontological resources are discovered on site.

Because EBMUD Standard Construction Specification 01 35 45, Biological, Cultural, and Paleontological Resource Requirements, Section 3.3, Protection of Cultural and Paleontological

Resources, has been incorporated into the Project and includes practices and regulations to prevent the direct or indirect destruction of unique paleontological resources or unique geological features, the impact of the Project is considered less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (**Appendix E**) lists the applicable standard specifications language.

Lafayette WTP Construction

Paleontological resources have the potential to occur in the sedimentary rock formations at the Lafayette WTP (EBMUD, 2006). As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including EBMUD Standard Construction Specification 01 35 45, Biological, Cultural, and Paleontological Resource Requirements Section 3.3, Protection of Cultural and Paleontological Resources, , which outlines paleontological resource protection measures such as requiring construction personnel to undergo a paleontological resources training and immediately stop work if paleontological resources are discovered on site.

Because EBMUD Standard Construction Specification 01 35 45, Biological, Cultural, and Paleontological Resource Requirements, Section 3.3, Protection of Cultural and Paleontological Resources, has been incorporated into the Project and includes practices and regulations to prevent the direct or indirect destruction of unique paleontological resources or unique geological features, the impact is considered less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (**Appendix E**) lists the applicable standard specifications language.

Operation and Maintenance

Ongoing activities associated with Project operation and maintenance at the Walnut Creek WTP and Lafayette WTP would not involve excavation or other ground disturbing activities. Because operational activities would not involve ground disturbing activities, no operational impacts related to paleontological resources are anticipated.

<u>Significance Determination Before Mitigation</u>

Less than significant.

<u>Mitigation Measures</u>

None required.

Cumulative Impact Analysis

Impacts on geology and soils are generally localized and do not result in regionally cumulative impacts. The geographic scope for the cumulative impact analysis includes areas in and immediately adjacent to the Walnut Creek WTP and Lafayette WTP sites. For example, the effect of erosion would tend to be limited to the localized area of a project and would only be cumulative if erosion occurred as the result of two or more adjacent projects that spatially overlapped. The Project combined with existing and remaining planned development and/or redevelopment in the City of Walnut Creek and the City of Lafayette would not be anticipated to increase risk of injury, loss, or death due to seismic-related conditions nor increase risk of erosion or soil instability because any future projects in the localized area would be required to comply with state and local building codes, and other seismic safety requirements as well as other state regulations and permits that reduce seismic risk and control erosion and slope stability.

Exposed soil at the Walnut Creek WTP and Lafayette WTP sites would be hydroseeded with EBMUD’s standard hydroseed mix of native grasses, which would reduce the risk of soil erosion and soil loss. The Project does not include development of housing and therefore, would not increase any seismic risks or risks from expansive soils to residents.

Because the Project and future planned development and redevelopment would be required to comply with state and local building codes and other seismic safety requirements, and surrounding areas would be developed or designated open space or park land, the Project would not result in a cumulatively considerable contribution to increased risk of injury, loss, or death due to seismic-related conditions nor increase risk of erosion, soil instability or expansive soils, and thus, would not contribute to cumulative impacts related to geology, soils, and seismicity.

Improvements at the Lafayette WTP includes raising an existing weir, replacing an existing weir, and installing new pipelines. There would not be any changes in operation at the Lafayette WTP site, and therefore no cumulative impacts are anticipated.

3.6.4 References

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3.7 Greenhouse Gas Emissions

This section describes the physical, environmental, and regulatory setting for greenhouse gas (GHG) emissions, identifies the significance criteria for determining environmental impacts, and evaluates the potential GHG impacts that could result from implementation of the Project. This section includes an overview of GHGs and their relation to climate change and provides the regulatory framework for evaluating and managing GHGs, at the federal, state, and local levels. This section includes GHG emissions modeling (see **Appendix K**) to estimate the Project emissions associated with the construction of each Project phase, within the context of local conditions.

3.7.1 Environmental Setting

Concepts and Terminology

The discussion below defines the terms used in the GHG evaluation and describes existing sources of GHGs.

Greenhouse Gasses and Climate Change

Gases that trap heat in the atmosphere are called greenhouse gases because they allow sunlight to enter earth’s atmosphere, but trap its heat, similar to the way a greenhouse raises its internal temperature. According to the United States Environmental Protection Agency ([U.S. EPA] U.S. EPA, 2022a), emissions of GHGs build up in the atmosphere and contribute to increases in global average temperatures. Higher global average temperatures are causing changing temperature and precipitation patterns; increases in ocean temperatures, sea level, and acidity; melting of glaciers and sea ice; changes in the frequency, intensity, and duration of extreme weather events; and shifting ecosystem characteristics, like the length of the growing season, timing of flower blooms, and migration of birds. When alterations such as these last over an extended period of time, the changes are referred to as “climate change.”

There is scientific consensus that climate change is occurring, and that human activity contributes to that change. The documented effects of climate change in California include a recorded increase in annual average temperatures; increases in daily minimum and maximum temperatures; increases in the occurrence of extreme events, including droughts, wildfire and heat waves; reductions in spring runoff volumes as a result of declining snowpack; decreases in winter chill hours, which are necessary for the production of high-value fruit and nut crops; and changes in the timing and location of species sightings, including migration upslope of flora and fauna, and earlier appearance of Central Valley butterflies (California Air Resources Board [CARB], 2017).

GHG emissions accumulate in the atmosphere at a planet-wide level. Therefore, GHG emissions, existing or future, are not a localized phenomenon and there are no localized geographical constraints within a project area relative to GHG emissions. Higher concentrations of GHGs persist in the atmosphere for hundreds or thousands of years, meaning that the earth will continue to warm in the coming decades. The warmer the earth gets, the greater the risk for more severe changes to the climate and the earth's system. Although it is difficult to predict the exact impacts of climate change, it is certain that historical climate patterns are no longer a reliable guide for what to expect in the future (U.S. EPA, 2022a).

Greenhouse Gas Emissions

GHG emissions from human activities primarily include Carbon Dioxide (CO_2), with much smaller amounts of nitrous oxide (N_2O), methane (CH_4, often from unburned natural gas), sulfur hexafluoride (SF_6) from high-voltage power equipment, and hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs) from refrigeration/chiller equipment. Because GHGs have different warming potentials (i.e., the amount of heat trapped in the atmosphere by a certain mass of the gas), and CO_2 is the most common reference gas for climate change, GHG emissions are often quantified and reported as CO_2-equivalent (CO_2e) emissions. For example, while SF_6 represents a small fraction of the total annual GHGs emitted worldwide, this gas is very potent, with 22,800 times the global warming potential of CO_2. Therefore, an emission of 1 metric ton of SF_6 would be reported as 23,500 metric tons CO_2e (MT CO_2e). The global warming potentials of CH_4 and N_2O are 28 times and 265 times that of CO_2, respectively (Intergovernmental Panel on Climate Change [IPCC], 2014). The principal GHGs from human activity that enter and accumulate in the atmosphere are described below.

Carbon Dioxide (CO_2)

CO_2 is a naturally occurring gas that enters the atmosphere through natural as well as anthropogenic (human) sources. Key anthropogenic sources include the burning of fossil fuels (e.g., oil, natural gas, and coal), solid waste, trees, wood products, and other biomass, as well as industrial chemical reactions such as those associated with manufacturing cement. Plants remove CO_2 from the atmosphere as part of the biological carbon cycle.

Methane (CH_4)

Like CO_2, CH_4 is emitted from both natural and anthropogenic sources. Key anthropogenic sources of CH_4 include gaseous emissions from landfills, releases associated with the mining and materials extraction industries (in particular coal mining), and fugitive releases from the extraction and transport of natural gas and crude oil. Livestock and agricultural practices also emit CH_4. Small quantities of CH_4 are released during fossil fuel combustion.

Nitrous Oxide (N_2O)

N_2O is emitted from both natural and anthropogenic sources. Important anthropogenic sources include industrial activities, agricultural activities (primarily the application of nitrogen fertilizer), the use of explosives, combustion of fossil fuels, and decay of solid waste.

Fluorinated Gases (HFCs, PFCs, and SF_6)

HFCs, PFCs, and SF_6 are synthetic gases emitted from a variety of industrial processes and contribute substantially more to the greenhouse effect on a pound-for-pound basis than the previously described GHGs. Fluorinated gases are often used as substitutes for ozone-depleting substances (i.e., chlorofluorocarbons, HFCs, and halons). The gases are typically emitted in small quantities, but because of their potency fluorinated gases are sometimes referred to as "high global warming potential gases."

Greenhouse Gas Sources

Human activities are responsible for almost all of the increase in GHGs in the atmosphere over the last 150 years. The largest sources of GHG emissions from human activities in the United

States are from burning coal and natural gas to produce energy and burning gasoline and diesel to fuel cars, trucks, ships, trains, and planes (U.S. EPA, 2022b).

The primary sources of GHG emissions in the U.S. in 2020, the most recent year data are available, are: transportation (27 percent), electricity production (25 percent), industry (24 percent), commercial and residential (13 percent), and agriculture (11 percent). Land use and forestry offset 13 percent of the total emissions by acting as a sink that absorbs CO_2 from the atmosphere. In the U.S., since 1990, managed forests and other lands have absorbed more CO_2 from the atmosphere than is emitted (U.S. EPA, 2022b).

In 2019, the most recent year data are available, California emitted approximately 418 million MT CO_2e emissions, which was almost 13 million MT CO_2e below its target of 431 million MT CO_2e for 2020. Direct emissions from transportation (passenger vehicles, heavy-duty vehicles, planes, ships, and rail) were the source of 40 percent of the state's GHG emissions, followed by industrial at 21 percent, electricity generation at 14 percent, and commercial and residential sources at 11 percent. Recycling and waste, high global warming potential gases, and agricultural sources represent the remaining 14 percent (CARB, 2021).

For the nine-county San Francisco Bay Area, in 2015, which is the most recent year data are available, total GHG emissions were 85 million MT CO_2e. The sources by category were transportation (41 percent), stationary industrial sources (26 percent), energy generation (14 percent), and building energy use (10 percent). The remaining 9 percent of emissions is comprised of fluorinated gas emissions and emissions from solid waste and agriculture. Of the total transportation emissions in 2015, passenger cars and trucks accounted for 72 percent, while heavy-duty trucks accounted for 16 percent. Planes were responsible for 6 percent, and the remaining transportation emissions came from ships and boats, industrial equipment, rail, and buses/motorhomes/motorcycles (Bay Area Air Quality Management District [BAAQMD], 2017a). Using a consumption-based approach to inventorying GHG emissions, which estimates GHG emissions from the production of goods and services from all over the world that are consumed by San Francisco Bay Area residents, GHG emissions from the transportation sector represent the largest source GHG emissions at 33 percent followed by food (19 percent), goods (18 percent), services (18 percent), heating fuels (5 percent), home construction (3 percent), electricity (2 percent), and waste (1 percent) (Jones, 2015).

EBMUD inventoried its GHG emissions from direct emissions, sources within the organizational boundary that EBMUD owns or controls, and indirect emissions, sources occurring outside EBMUD from the production of electricity that is used by EBMUD. In 2013, EBMUD's GHG emissions totaled 31,244 MT CO_2e, nearly identical to the 2012 emissions inventory (31,106 MT CO_2e). When breaking down emissions into sectors associated with different EBMUD activities, water treatment and distribution accounted for 51 percent, EBMUD's fleet of vehicles and mobile equipment was responsible for 22 percent, operation of buildings accounted for 13 percent, wastewater collection and treatment 10 percent, and the remaining 4 percent was attributed to raw water intake and transport (EBMUD, 2014). In 2019 and 2020, EBMUD conducted GHG emissions inventories (EBMUD, 2021) using the Water Energy Nexus 1.0 protocol developed by The Climate Registry. EBMUD's GHG emissions totaled 30,051 MT CO_2e in 2019 and 27,249 MT CO_2e in 2020, which was lower than EBMUD's GHG emissions goal for 2020 of 36,727 MT CO_2e. The Water Energy Nexus 1.0 protocol groups emissions according to direct and indirect sources, and according to sources from water and wastewater operations. Direct emissions resulted from the combustion of fuel, the treatment and discharge of wastewater, and refrigerant usage. Indirect emissions resulted from the use of electricity. Water systems operations accounted for 49 percent of emissions in 2020 and wastewater systems operations accounted for 51 percent. The 2020 GHG inventory (EBMUD, 2021) found that EBMUD's GHG emissions had dropped 5 to 15 percent each year over the previous 5 years.

3.7.2 Regulatory Framework

This section describes policies and regulations related to GHG emissions that may apply to the Project.

Federal Policies and Regulations

Clean Air Act

In response to a lawsuit filed by California, other states, cities, and environmental organizations on April 2, 2007, the U.S. Supreme Court found that GHGs are air pollutants covered by the Clean Air Act. The Court held that the U.S. EPA must determine whether GHG emissions from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. In making such decisions, the U S. EPA is required to follow the language of Section 202(a) of the Clean Air Act, which mandates establishment (and periodic revisions) of standards applicable to the emission of any air pollutant from any class or classes of new motor vehicles or new motor vehicle engines. The U.S. Supreme Court decision resulted from a petition for rulemaking under Section 202(a) filed by more than a dozen environmental, renewable energy, and other organizations.

On December 7, 2009, the U S. EPA Administrator signed two findings regarding GHGs under Section 202(a) of the federal Clean Air Act:

- Endangerment Finding: The current and projected concentrations of six key GHGs—CO2, CH4, N2O, HFCs, PFCs, and SF6—in the atmosphere threaten the public health and welfare of current and future generations.
- Cause or Contribute Finding: The combined emissions of the six key GHGs from new motor vehicles and new motor vehicle engines contribute to GHG pollution that threatens public health and welfare.

40 Code of Federal Regulations (CFR) – Protection of the Environment

Pursuant to 40 CFR Part 52, Proposed Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule, the U.S. EPA has mandated that Prevention of Significant Deterioration (PSD) and Title V requirements apply to facilities whose stationary source CO_2e emissions exceed 100,000 tons per year (U.S. EPA, 2010). The Project would not trigger PSD or Title V permitting under this regulation because the Project would not construct a new stationary source subject to PSD or Title V permitting, nor would it generate more than 100,000 tons of CO_2e emissions per year.

State Policies and Regulations

The California Air Resources Board (CARB) is the agency responsible for coordination and oversight of state and local air pollution control programs in California. There are currently no state regulations in California that establish ambient air quality standards for GHGs. However, California has passed laws directing CARB to develop actions to reduce GHG emissions, and several state legislative actions related to climate change and GHG emissions have come into play in the past decade.

Senate Bill 97

Senate Bill (SB) 97, signed in August 2007, acknowledges that climate change is a prominent environmental issue requiring analysis under the California Environmental Quality Act (CEQA). SB 97 directed the Governor's Office of Planning and Research (OPR) to prepare, develop, and transmit guidelines to the California Natural Resources Agency for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA, no later than July 1, 2009. The California Natural Resources Agency was required to certify or adopt those guidelines by January 1, 2010. On December 30, 2009, the Natural Resources Agency adopted the state CEQA Guidelines amendments, as required by SB 97. The state CEQA Guidelines amendments provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in draft CEQA documents. The amendments became effective March 18, 2010.

CEQA Guidelines

CEQA Guidelines, Section 15064.4 addresses the significance of GHG emissions. Section 15064.4 calls for a lead agency to make a "good-faith effort" to "describe, calculate or estimate" GHG emissions in CEQA environmental documents. Section 15064.4 further states that the analysis of GHG impacts should include consideration of: (1) the extent to which a project may increase or reduce GHG emissions, (2) whether project emissions would exceed a locally applicable threshold of significance, and (3) the extent to which a project would comply with "regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (see, e.g., section 15183.5(b))." The CEQA Guidelines also state that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project would comply with the requirements in a previously approved plan or mitigation program (including plans or regulations for the reduction of GHG emissions) that provides specific requirements that would avoid or substantially lessen the cumulative problem within the geographic area in which the project is located (CEQA Guidelines Section 15064(h)(3)). The CEQA Guidelines revisions do not, however, set a numerical threshold of significance for GHG emissions.

CEQA Guidelines, Section 15183.5(b) describes the elements of plans for the reduction of greenhouse gas emissions that can be used for tiering later project-specific environmental analysis to determine whether a project's incremental contribution is cumulatively considerable. A previously approved plan or mitigation program for the reduction of greenhouse gas emission should:

> Quantify greenhouse gas emissions, both existing and projected over a specified time period, resulting from activities within a defined geographic area;
>
> Establish a level, based on substantial evidence, below which the contribution to greenhouse gas emissions from activities covered by the plan would not be cumulatively considerable;
>
> Identify and analyze the greenhouse gas emissions resulting from specific actions or categories of actions anticipated within the geographic area;

> Specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level;
>
> Establish a mechanism to monitor the plan's progress toward achieving the level and to require amendment if the plan is not achieving specified levels;
>
> Be adopted in a public process following environmental review.
>
> (CEQA Guidelines Section 15183.5(b)(1)(A-F).)

The CEQA Guidelines also include the following guidance on measures to mitigate GHG emissions, when such emissions are found to be significant:

> Consistent with Section 15126.4(a), lead agencies shall consider feasible means, supported by substantial evidence and subject to monitoring or reporting, of mitigating the significant effects of greenhouse gas emissions. Measures to mitigate the significant effects of greenhouse gas emissions may include, among others:
>
> (1) Measures in an existing plan or mitigation program for the reduction of emissions that are required as part of the lead agency's decision;
>
> (2) Reductions in emissions resulting from a project through implementation of project features, project design, or other measures;
>
> (3) Off-site measures, including offsets that are not otherwise required, to mitigate a project's emissions;
>
> (4) Measures that sequester greenhouse gases; and
>
> (5) In the case of the adoption of a plan, such as a general plan, long range development plan, or plans for the reduction of greenhouse gas emissions, mitigation may include the identification of specific measures that may be implemented on a project-by-project basis. Mitigation may also include the incorporation of specific measures or policies found in an adopted ordinance or regulation that reduces the cumulative effect of emissions.
>
> (CEQA Guidelines Section 15126.4(a).)

Executive Order S-3-05

In 2005, in recognition of California's vulnerability to the effects of climate change, Governor Arnold Schwarzenegger established Executive Order S-3-05, which established a series of target dates by which statewide emissions of GHGs would be progressively reduced, as follows:

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

As discussed below, the 2020 reduction target was codified in 2006 as Assembly Bill (AB) 32. However, the 2050 reduction target has not been codified and the California Supreme Court has ruled that CEQA lead agencies are not required to use the 2050 target as a significance threshold (Cleveland National Forest Foundation v. San Diego Association of Governments (2017) 3 Cal.5th 497).

Assembly Bill 32 and the California Climate Change Scoping Plan

In 2006, the California legislature passed AB 32 (Health and Safety Code §38500 et seq., or AB 32), also known as the Global Warming Solutions Act. AB 32 requires CARB to design and implement feasible and cost-effective emission limits, regulations, and other measures, such that statewide GHG emissions are reduced to 1990 levels by 2020 (representing a 25 percent reduction in emissions). AB 32 anticipates that the GHG reduction goals will be met, in part, through local government actions. CARB identified a GHG reduction target of 15 percent from current levels for local governments and noted that successful implementation relies on local governments' land use planning and urban growth decisions.

Pursuant to AB 32, CARB adopted a Scoping Plan in December 2008 (CARB, 2009), which was re-approved by CARB on August 24, 2011, that outlines measures to meet the 2020 GHG reduction goals by reducing the state's GHG emissions by 30 percent below projected 2020 business-as-usual emissions levels or about 15 percent from 2008 levels. The Scoping Plan recommended measures for further study and possible state implementation, such as new fuel regulations. Estimates predict that a reduction of 174 million MT CO_2e (about 191 million U.S. tons) from the transportation, energy, agriculture, and forestry sectors and other sources could be achieved should the state implement all of the measures in the Scoping Plan.

The Scoping Plan is required by AB 32 to be updated at least every 5 years. The first update to the AB 32 Scoping Plan was approved on May 22, 2014, by CARB. The 2017 Scoping Plan Update was adopted on December 14, 2017. The Scoping Plan Update addresses the 2030 target established by SB 32, discussed below, and establishes a proposed framework of action for California to meet a 40 percent reduction in GHG emissions by 2030 compared to 1990 levels. Continuing the efforts made since 2006 under AB 32, the Scoping Plan focuses on programs including Cap-and-Trade Regulation; Low Carbon Fuel Standard; cleaner cars, trucks, and freight movement; renewable energy; and reducing methane emissions from agriculture and waste (CARB, 2017).

Executive Order S-1-07

Executive Order S-1-07, signed by Governor Schwarzenegger in 2007, identified the transportation sector as the main source of GHG emissions in California, generating more than 40 percent of statewide emissions. Executive Order S-1-07 established a goal to reduce the carbon intensity of transportation fuels sold in California by at least 10 percent by 2020 and also directed CARB to determine whether this Low Carbon Fuel Standard (LCFS) could be adopted as a discrete early-action measure as part of the effort to meet the mandates in AB 32.

On April 23, 2009, CARB approved the proposed regulation to implement the LCFS. The goal of the LCFS was to reduce GHG emissions from the transportation sector in California by about 16 million metric tons in 2020.

Executive Order B-30-15 and Senate Bill 32

California Executive Order B-30-15 (April 29, 2015) set an "interim" statewide emission target to reduce GHG emissions to 40 percent below 1990 levels by 2030 and directed state agencies with jurisdiction over GHG emissions to implement measures pursuant to statutory authority to achieve this 2030 target. Specifically, the executive order directed CARB to update the Scoping Plan to express this 2030 target in metric tons. On September 8, 2016, Governor Jerry Brown signed SB 32, which codified the 2030 reduction target called for in Executive Order B-30-15. CARB's 2017 Scoping Plan update addresses the 2030 target, as discussed above (CARB, 2017).

Senate Bill 605

On September 21, 2014, Governor Jerry Brown signed SB 605, which required CARB to develop a comprehensive strategy to reduce emissions of short-lived climate pollutants in the state no later than January 1, 2016. As defined in SB 605, short-lived climate pollutant means "an agent that has a relatively short lifetime in the atmosphere, from a few days to a few decades, and a warming influence on the climate that is more potent than that of carbon dioxide." SB 605, however, does not prescribe specific compounds as short-lived climate pollutants or add to the list of GHGs regulated under AB 32. In developing the strategy, the CARB completed an inventory of sources and emissions of short-lived climate pollutants in the state based on available data, identified research needs to address data gaps, identified existing and potential new control measures to reduce emissions, and prioritized the development of new measures for short-lived climate pollutants that offer co-benefits by improving water quality or reducing other air pollutants that impact community health and benefit disadvantaged communities.

Local Policies and Regulations

Under Section 53091 of the California Government Code, EBMUD, as a local agency and utility district, is not subject to building and land use zoning ordinances for projects involving facilities for the production, generation, storage, treatment, or transmission of water. However, EBMUD's practice is to work with local jurisdictions and neighboring communities during project planning to consider local environmental protection policies for guidance.

BAAQMD CEQA Guidelines

The Bay Area Air Quality Management District (BAAQMD) CEQA Air Quality Guidelines (Guidelines) advise lead agencies on how to evaluate potential air quality impacts during the environmental review process consistent with CEQA requirements, including establishing quantitative and qualitative thresholds of significance (BAAQMD, 2017b). Updated thresholds for evaluating the significance of climate impacts from typical residential and commercial land use projects and plans were adopted April 20, 2022 (BAAQMD, 2022a).

The BAAQMD considers GHG emissions and global climate change to represent cumulative impacts. GHG emissions contribute, on a cumulative basis, to the significant adverse environmental impacts of global climate change. No single project could generate enough GHG emissions to noticeably change the global average temperature. The combination of GHG emissions from past, present, and future projects contribute substantially to global climate change and its associated environmental impacts. BAAQMD's approach to developing a Threshold of Significance for GHG emissions is to identify the emissions level for which a project would not be expected to substantially conflict with existing California legislation adopted to reduce statewide GHG emissions. If a project would generate GHG emissions above the threshold level, the project would be considered to contribute substantially to a cumulative impact and would be considered significant. The 2017 BAAQMD Guidelines include operational thresholds of 10,000 MT CO_2e per year for stationary sources and 1,100 MT CO_2e per year for land use development projects not including stationary sources and does not include any GHG thresholds for construction emissions.

On April 20, 2022, BAAQMD adopted the proposed CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Projects and Plans. To have a less than significant impact under the April 2022 thresholds, a proposed project must comply with one of two options, referred to as option A or B:

A) Include, at a minimum, the following project design elements:

1. Buildings
    a. Not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development).
    b. Not result in any 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 Vehicle Miles Traveled (VMT) reductions consistent with state targets:
        i. Residential projects: 15 percent below the existing VMT per capita
        ii. Office projects: 15 percent below the existing VMT per employee, where statewide current VMT per capita for all vehicle types is 24.61 miles per day.
        iii. Retail projects: no net increase in existing VMT
    b. Achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2, including:
        i. Of the total number of new parking spaces, designate 50 percent for any combination of zero-emitting, fuel-efficient and carpool/van pool vehicles (CALGreen Section A5.106.5.1.2).
        ii. Paint the designated stalls with "CLEAN AIR/VANPOOL/ EV" marking (CALGreen Section A5.106.5.1.3).
        iii. Provide parking spaces capable of providing electric vehicle charging. For example, a project that would provide 25-50 new parking spaces must provide 17 electric vehicle capable spaces (i.e., spaces with an electric panel space and load capacity to support electric vehicle charging) and 6 of those 17 spaces must have electric vehicle supply equipment (i.e., the connectors, plugs, and all other fittings necessary for transferring energy from the premises to the electric vehicle); a project that would provide 10-25 new parking spaces must provide 8 electric vehicle capable spaces and 3 of those must have electric vehicle supply equipment (CALGreen Section A5.106.5.3.2).

Or

B) Be consistent with a local GHG reduction strategy, such as a Climate Action Plan, that meets the criteria under State CEQA Guidelines Section 15183.5(b)

The 2022 BAAQMD Guidelines do not yet include operational thresholds for stationary sources, although BAAQMD staff are investigating appropriate approaches. In addition, the 2022 Guidelines do not include GHG thresholds for construction emissions (BAAQMD, 2022b).

2017 Clean Air Plan

The 2017 Clean Air Plan, Spare the Air, Cool the Climate (2017 Plan) was adopted by the BAAQMD on April 19, 2017. The 2017 Plan focuses on two closely related goals: protecting public health and protecting the climate. Consistent with the GHG reduction targets adopted by the state of California, the 2017 Plan lays the groundwork for a long-term effort to reduce Bay Area GHG emissions by 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050 (BAAQMD, 2017a). The 2017 Plan includes a range of proposed control measures, which consist of actions to reduce combustion-related activities, decrease fossil fuel combustion, improve energy efficiency, and decrease emissions of potent GHGs. The 2017 Plan updates the Bay Area 2010 Clean Air Plan and complies with state air quality planning requirements as codified in the California Health and Safety Code. The 2017 Plan includes 85 measures to address the reduction of several pollutants, including GHGs.

Walnut Creek General Plan

The City of Walnut Creek General Plan is a long-range policy document intended to guide physical, economic, and environmental growth in the City of Walnut Creek. The City of Walnut Creek General Plan contains citywide elements, including a Built Environment element, which contains goals and objectives related to air quality and climate change. The City of Walnut Creek General Plan, which was adopted in 2006 and most recently amended in 2020, has a timeframe that extends to the year 2025. Applicable goals and objectives from the general plan are listed below.

Goal 4-31. Strive to meet State and federal air-quality standards for the region.

> **Policy 4-31.1.** Work with the Bay Area Air Quality Management District (BAAQMD) and the County in promoting better air quality.
>
> **Policy 4-31.2.** Consider additional land use and development criteria, standards, and decisions that have positive impacts on air quality and quality of life in general.

Walnut Creek Climate Action Plan

The City of Walnut Creek Climate Action Plan, adopted April 17, 2012, addressed state legal requirements for GHG reductions from the City. The 2012 Climate Action Plan set a goal of reducing GHG emissions 15 percent below 2005 levels by 2020 from the community sectors of energy use, transportation, land use, and solid waste. It also set a goal of reducing GHG emissions from City municipal operations by 39 percent below 2005 levels by 2020. Applicable goals and objectives from the Climate Action Plan are listed below.

Goal EU (energy use and efficiency) 1: Increase Energy Efficiency and Conservation Efforts.

> **Goal EU 1.3: Public Outreach**. Work with partners, including EBMUD, to educate and inform the community about ways to improve energy efficiency, including behavioral changes, appliance purchases and rebates, maintenance practices, and more.

Goal EU (energy use and efficiency) 4: Reduce energy use through increased water conservation.

> **Goal EU 4.1: Water Conservation**. Work with EBMUD and CCWD to ensure that the Walnut Creek community achieves regional and statewide water reduction targets, including a 20% reduction as established by the State's 20X2020 plan.

Walnut Creek measured GHG emissions reduction progress in 2017, the most recent year with complete data, and found it had reduced emissions 27 percent below 2005 levels, exceeding the 2020 goal. The City is preparing a new Sustainability Action Plan based on the 2012 Climate Action Plan, which will address reducing GHG emissions in both the short-term (through 2030) and long-term (through 2045).

Lafayette General Plan

The City of Lafayette General Plan is a long-range policy document intended to guide physical, economic, and environmental growth in the City of Lafayette. The City of Lafayette General Plan contains citywide elements, including an Open Space Conservation, Land Use, and Circulation element. The City of Lafayette General Plan, which was adopted in 2002 and most recently amended in 2020, has a timeframe that extends to the year 2040. Applicable goals and objectives from the general plan are listed below.

Goal OS-10. Improve air quality.

> **Policy OS-10.1.** Regional Planning: Work with the Bay Area Air Quality Management District (BAAQMD) to implement the *Regional Clean Air Plan*.
>
> **Policy OS-10.2.** Air Quality Standards: Seek to comply with State and Federal standards for air quality.
>
> **Policy OS-10.3.** Vehicle Emissions: Improve air quality by reducing the use of single-occupant automobiles.

EBMUD Climate Change Monitoring and Response Plan

In 2008, EBMUD adopted a climate change objective in EBMUD's Strategic Plan, focusing on using resources (economic, environmental, and human) in a responsible manner that meets current needs without compromising the ability to meet future needs. In response to the climate change objective, EBMUD prepared the EBMUD 2014 Climate Change Monitoring and Response Plan. EBMUD also prepared an Action Plan that provides guidance to inform EBMUD of decisions regarding water supply, water quality, and infrastructure planning. The 2014 EBMUD Climate Change Monitoring and Response Plan acknowledged the GHG reduction goals set forth in the Energy Policy adopted by EBMUD's Board of Directors in November 2013 to be carbon free for indirect emissions and to reduce direct GHG emissions by 50 percent by 2040 (as compared to baseline GHG emissions in year 2000). The GHG reduction goals cited in the 2104 Climate Mitigation Action Plan were superseded in 2018 with updated Energy Policy goals, as explained below.

EBMUD GHG Inventory

In 2020, GHG emissions generated by EBMUD were 27,249 MT CO_2e, which was lower than EBMUD's 2020 target of 36,727 MT CO_2e (EBMUD, 2021b) and 49 percent lower than baseline GHG emissions in year 2000 of 52,957 MT CO_2e. EBMUD 2020 GHG inventory was based on the Water Energy Nexus (WEN) 1.0 protocol developed by The Climate Registry, and the 2021 inventory will be conducted under the updated WEN protocol, WEN 2.0, published in September 2021.

EBMUD Sustainability and Resilience Policy 7.05

EBMUD adopted Policy 7.05, Sustainability and Resilience, effective June 23, 2020, to manage long-term environmental benefits by incorporating sustainable and resilient planning, design, construction, operations, maintenance, rehabilitation, and disposal activities into its services. Objectives of the Sustainability and Resilience Policy that support GHG emissions reduction include:

- Comply with environmental laws and regulations;
- Promote and implement purchasing and using recycled and recyclable products;
- Move towards zero waste and seek ways to recycle materials; and
- Identify and implement projects and plans that mitigate climate change impacts and reduce greenhouse gas emissions.

EBMUD Energy Policy 7.07

EBMUD adopted Energy Policy 7.07, effective September 22, 2020, to encourage and promote energy efficient practices within its water and wastewater system operations, service area, and watersheds, minimize reliance on fossil fuels, diversify energy sources, reduce energy costs, and support EBMUD's goal to be carbon free for indirect and direct emissions (EBMUD, 2020b). Objectives of the Energy Policy that support energy conservation and GHG reduction include:

- Implement the following GHG reduction goals:
    - Water system: eliminate GHG emissions for indirect and direct emissions by 2030.
    - Wastewater system: eliminate GHG emissions for indirect emissions and reduce direct GHG emissions by 50 percent compared to 2000 levels by 2040.
- Efficiently use all forms of energy including electricity, petroleum-based fuels, and natural gas to reduce costs and energy consumption, conserve natural resources, and minimize impacts on the environment;
- Increase use and generation of renewable energy to preserve natural resources, reduce environmental pollution and GHG emissions, and support EBMUD's mission to protect and preserve the environment for future generations; and
- Support the state's and other regulatory renewable energy goals.

EBMUD Climate Action Plan Sustainability & Resilience

EBMUD's Climate Action Plan (EBMUD, 2021a) describes EBMUD's commitment to reducing GHG emissions and collaborating with local, state, and national partners to mitigate climate change impacts. In the Climate Action Plan, EBMUD acknowledges the GHG reduction goals set forth in Energy Policy 7.07 to eliminate direct and indirect GHG emissions from the water system by 2030, eliminate indirect GHG emissions from the wastewater system by 2040, and reduce direct GHG emissions from the wastewater system by 50 percent over 2000 levels by 2040. Emissions from the water system include those from stationary sources; vehicles and equipment; fugitive emissions; indirect GHG emissions associated with the generation of electricity, heat or steam purchased by EBMUD; production of water treatment chemicals; emissions from trucked-in materials; and employees' commutes and business air travel. According to the Climate Action Plan, EBMUD will continue to look for new renewable energy sources, invest in fuel-efficient fleet vehicles, and encourage customers to conserve water in order to reduce GHG emissions.

EBMUD Standard Construction Specifications

EBMUD's Standard Construction Specifications and Procedures apply to all contractors completing work for EBMUD, and to work completed by EBMUD staff. The following EBMUD practices and procedures are applicable to GHG emissions:

- **EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, Section 3.5**

  EBMUD Standard Construction Specification 01 35 44, Section 3.5 requires implementation of the following practices and procedures for minimizing GHG emissions from fuel combustion as described below (EBMUD, 2023):

  - The Contractor shall ensure that line power is used instead of diesel generators at all construction sites where line power is available.
  - The Contractor shall ensure that for operation of any stationary, compression- ignition engines as part of construction, comply with Section 93115, Title 17, California Code of Regulations, Airborne Toxic Control Measure for Stationary Compression Ignition Engines, which specifies fuel and fuel additive requirements as well as emission standards.
  - Fixed temporary sources of air emissions (such as portable pumps, compressors, generators, etc.) shall be electrically powered unless the Contractor submits documentation and receives approval from the Engineer that the use of such equipment is not practical, feasible, or available. All portable engines and equipment units used as part of construction shall be properly registered with the California Air Resources Board or otherwise permitted by the appropriate local air district, as required.
  - Contractor shall implement standard air emissions controls such as:
    - Minimize the use of diesel generators where possible.
    - 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 (ATCM) Title 13, Section 2485 of California Code of Regulations. Clear signage shall be provided for construction workers at all access points.
    - Follow applicable regulations for fuel, fuel additives, and emission standards for stationary, diesel-fueled engines.
    - Locate generators at least 100 feet away from adjacent homes.
    - Perform regular low-emission tune-ups on all construction equipment, particularly haul trucks and earthwork equipment.

- Contractor shall implement the following measures to reduce greenhouse gas emissions from fuel combustion:
  - On road and off-road vehicle tire pressures shall be maintained to manufacturer specifications. Tires shall be checked and re-inflated at regular intervals.
  - Construction equipment engines shall be maintained to manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
  - All construction equipment, diesel trucks, and generators shall be equipped with Best Available Control Technology for emission reductions of Nitrogen Oxides (NO_X) and Particulate Matter (PM).
  - Demolition debris shall be recycled for reuse to the extent feasible.

3.7.3 Impact Analysis

Methodology for Analysis

For quantifying a project's GHG emissions, BAAQMD recommends that all GHG emissions from a project be estimated, including a project's direct and indirect GHG emissions from operations. Direct emissions refer to emissions produced from the onsite combustion of energy, such as propane gas used in generators and fuel combustion from mobile sources. Indirect emissions come from offsite energy production, waste disposal, and water conveyance associated with a project's energy use, waste generation, and water consumption. BAAQMD has provided guidance on methods for modeling GHG emissions (BAAQMD, 2017a).

On April 20, 2022, BAAQMD adopted the proposed CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Projects and Plans (see **BAAQMD CEQA Guidelines**, above), which provide two options for demonstrating that GHG emissions are less than significant. A proposed project must comply with one of two options, referred to as option A or B. As noted in the Justification Report accompanying the 2022 thresholds (BAAQMD, 2022a), the thresholds of significance are based on typical residential and commercial land use projects and may not be appropriate for unique projects that do not fit the mold of a typical residential or commercial project. Regarding threshold option "B," EBMUD prepared its Climate Change Monitoring and Response Plan (EBMUD, 2014) and its Climate Action Plan Sustainability & Resilience (EBMUD, 2021a). However, the Climate Change Monitoring and Response Plan and Climate Action Plan do not have the elements under State CEQA Guidelines Section 15183.5(b) for a qualified GHG reduction strategy for use in later project-specific tiering. Regarding threshold option "A," the Project is not a typical residential or commercial land use development project. Many of the building and transportation design elements could be applied to components of the Project, such as the consolidated maintenance building and parking spaces. However, this analysis does not rely on the 2022 thresholds because, consistent with the accompanying justification report, it would be inappropriate to apply the 2022 thresholds to unique projects that do not fit the mold of a typical residential or commercial project.

Because the Project is not a typical residential or commercial land use development project, the GHG analysis relies on thresholds established in the 2017 BAAQMD CEQA Guidelines (BAAQMD, 2017a). The analysis presented below compares the Project's direct and indirection emissions to the BAAQMD operational thresholds for land use projects, 1,100 MT CO_2e per year. According to the BAAQMD Guidelines, land use projects include residential, commercial, industrial, and public land uses and facilities. In other words, the operational thresholds apply to more than just typical residential and commercial developments. Note that BAAQMD's Guidelines do not include significance thresholds for construction related GHG emissions because, according to BAAQMD, emissions from construction represent a very small portion of a project's lifetime GHG emissions. However, BAAQMD recommends that construction related GHG emissions be quantified and disclosed, and that feasible best management practices be adopted to reduce them.

The California Emissions Estimator Model (CalEEMod) (CAPCOA, 2022) was used to estimate GHG emissions from construction activities including off-road equipment emissions, and on-road construction worker, haul, and vendor truck emissions. Model outputs are provided in **Appendix K**. Model inputs rely on information in Chapter 2, Project Description, and a series of constructability technical memoranda (Brown and Caldwell, 2020 and 2022a-d) that were prepared for Project construction activities.

Project GHG emissions are analyzed in the context of the GHG reduction goals of AB 32, SB 32, the 2017 Scoping Plan Update, the BAAQMD's 2017 Clean Air Plan, and the EBMUD Climate Change Monitoring and Response Plan to determine whether the Project would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions.

As noted in the BAAQMD Guidelines, if annual emissions of GHG exceed the thresholds of significance, then a proposed project would result in a cumulatively considerable contribution of GHG emissions and a cumulatively significant impact on global climate change. Analysis of GHG emissions is thus inherently cumulative. Therefore, the evaluation of GHG impacts against the BAAQMD thresholds evaluates whether the Project would make a considerable contribution to cumulative climate change effects.

Significance Criteria

Consistent with Appendix G of the *CEQA Guidelines* a GHG emissions impact would be considered significant if the Project would:

1. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.
2. Conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

Impacts and Mitigation Measures

Impact GHG-1: Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. (Criterion 1)

Construction

<u>Walnut Creek WTP Construction Phase 1</u>

As described in Chapter 2, Project Description and the constructability technical memoranda (Brown and Caldwell, 2020 and 2022a-d) that were prepared for Project construction activities, construction of the Walnut Creek WTP Phase 1 would involve site preparation, clearing and grubbing the site, tree removal, excavating and grading building pads and staging areas, installing pipelines and electrical lines throughout the site, constructing the Phase 1 buildings and structures, demolishing existing process and maintenance facilities, off haul of excavation and demolition materials, paving roadways and parking areas, lighting, landscaping, and final inspections and testing. Construction activities would involve the use of electricity and heavy construction equipment at the Walnut Creek WTP site, trucks to haul material to and from the site, vendor trips to deliver materials to the site, and worker trips. Such activities would produce GHG emissions as a result of the combustion of fuel from on-road and off-road vehicles, and electricity use.

Construction of Walnut Creek WTP Phase 1 would occur over a period of approximately 3 ¼ to 5 years. Given the potential range in construction duration, the shorter construction duration for Phase 1 is used in the impact analysis to capture a worst-case scenario where construction activities are most intense. As described above, CalEEMod was used to estimate GHG emissions (see CalEEMod outputs in **Appendix K**). Emissions in **Table 3.7-1** are presented in annual terms in order to capture total emissions from simultaneous construction activities in each year.

Table 3.7-1: GHG Emissions – Walnut Creek WTP Construction Phase 1

Year	Total Annual Emissions ($MTCO_2e/yr$)
2027	276
2028	1,181
2029	1,784
2030	1,260
Total Emissions ($MTCO_2e$) (all years)	4,501

<u>Walnut Creek WTP Construction Phase 2</u>

Similar to Phase 1, construction of Walnut Creek WTP Phase 2 would involve the use electricity and heavy construction equipment at the site, trucks to haul material to and from the site, vendor trips to deliver materials to the site and worker trips. Activities would produce direct GHG emissions as a result of the combustion of fuel from on-road and off-road vehicles and indirect GHG emissions as a result of electricity use.

Construction of the Walnut Creek WTP Phase 2 would occur after Phase 1 over the course of approximately two years or longer. As noted above, the shorter construction duration is used in the impact analysis to capture a worst-case scenario where construction activities are most intense. As described above, CalEEMod was used to estimate GHG emissions (see CalEEMod outputs in **Appendix K)**. Emissions in **Table 3.7-2** are presented in annual terms in order to represent total emissions from simultaneous construction activities in each year.

Table 3.7-2: GHG Emissions – Walnut Creek WTP Construction Phase 2

Year	Total Annual Emissions ($MTCO_2e/yr$)
2031	902
2032	595
Total Emissions ($MTCO_2e$) (all years)	1,497

Lafayette WTP Construction

As described in Chapter 2, Project Description, construction at the Lafayette WTP would involve site preparation, clearing and tree removal, excavating and installing new pipelines, constructing the new Lafayette Weir No. 1 and modifying existing Lafayette Weir No. 2, demolishing existing Lafayette Weir No. 1, off haul of excavation and demolition materials, lighting, final paving and landscaping, and final inspections and testing. Construction activities would involve the use of electricity and heavy construction equipment at the Lafayette WTP site, trucks to haul material to and from the site, vendor trips to deliver materials to the site, and worker trips. Such activities would directly produce GHG emissions as a result of the combustion of fuel from on-road and off-road vehicles, and indirectly produce GHG emissions as a result of electricity used at the site.

Construction of the Lafayette WTP would occur at the same time as Walnut Creek WTP Phase 1. As described above, CalEEMod was used to estimate GHG emissions (see CalEEMod outputs in **Appendix K**). Construction at the Lafayette WTP (e.g., site grading, site preparation, building retaining walls, revegetation) would occur continuously throughout a 3-year construction period from 2027 to 2030. Emissions in **Table 3.7-3** are presented in annual terms in order to represent total emissions from simultaneous construction activities in each year.

Table 3.7-3: GHG Emissions – Lafayette WTP Construction

Year	Total Annual Emissions ($MTCO_2e/yr$)
2027	56
2028	218
2029	202
2030	63
Total Emissions ($MTCO_2e$) (all years)	539

Annual emissions from construction of both Phase 1 and Phase 2 of the Walnut Creek WTP and Lafayette WTP are disclosed together in **Table 3.7-4**. Emissions in **Table 3.7-4** are presented in annual terms in order to represent total emissions from simultaneous construction activities.

Table 3.7-4: Total Construction GHG Emissions

Year	WCWTP Phase 1	WCWTP Phase 2	Lafayette WTP	Total Annual Emissions ($MTCO_2e/yr$)
2027	276	--	56	332
2028	1,181	--	218	1,399
2029	1,784	--	202	1,986
2030	1,260	--	63	1,323
2031	--	902	--	902
2032	--	595	--	595
Total Emissions ($MTCO_2e$) (all years)				6,537

As explained under Methodology for Analysis, neither the State nor the BAAQMD has adopted a quantitative GHG emissions threshold to evaluate the significance of an individual project's construction-related contribution to GHG emissions. Although the BAAQMD CEQA Guidelines do not specify thresholds of significance for construction related GHG emissions, BAAQMD recommends quantifying emissions and disclosing that GHG emissions would occur during construction. In accordance with BAAQMD guidance, annual construction related GHG emissions have been quantified and disclosed.

Additionally, BAAQMD encourages incorporation of best management practices (BMPs) to reduce GHG emissions during construction, where feasible and applicable. The GHG emissions during construction would be minimized through implementation of BAAQMD's BMPs. The BMPs may include using alternative fueled (e.g., biodiesel, electric) construction vehicles/equipment for at least 15 percent of the fleet; using local building materials for at least 10 percent of the Project's buildings; and recycling or re-using at least 50 percent of construction waste or demolition materials. As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including Standard Construction Specification 01 35 44, Environmental Requirements, Section 3.5, Air Quality Control. Section 3.5 would minimize GHG emissions by ensuring that line electricity is used instead of diesel generators whenever possible, idling time for trucks and construction equipment is minimized, applicable regulations for fuel and fuel additives are followed for all vehicles and equipment, equipment is regularly tuned up to maintain fuel efficiency, proper tire pressure is maintained for all vehicles and equipment, and demolition debris is recycled to the extent feasible.

Because EBMUD Standard Construction Specification 01 35 44, Section 3.5, Air Quality Control has been incorporated into the Project and includes measures to conserve energy, recycle materials, maintain equipment, use clean fuels, and reduce emissions from equipment, Project construction would not generate GHG emissions that would have a significant impact on the environment, and the impact would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (**Appendix E**) lists the applicable standard specifications language.

Operation and Maintenance

As described in Chapter 2, Project Description, operation and maintenance of the Walnut Creek WTP would increase electricity usage by 2,000 to 5,000 MWh/year depending on untreated water quality. In addition, operation and maintenance of the Walnut Creek WTP would involve one net additional daily trip to remove dewatered solids during periods of low turbidity, and up to 21 truck trips per day during peak turbidity. However peak turbidity events are expected to be infrequent (on the order of once every decade). High purity compressed liquid oxygen (LOX) would be trucked on-site approximately once per day. In addition, the new Walnut Creek WTP pretreatment facilities may require approximately two additional operators and approximately two additional maintenance staff. There would be no staffing changes or truck trips at the Lafayette WTP. Operation and maintenance activities would involve the use of trucks to haul dewatered solids from the site, truck trips to deliver LOX to the site, and worker trips. There would be no staffing changes or truck trips at the Lafayette WTP. To estimate average daily air pollutant emissions, this Air Quality analysis assumed Project operation and maintenance would result in an average of approximately six new trips per day (i.e., 1 trip for dewatered solids removal, 1 for chemical delivery, and 4 for operations and maintenance staff). It was assumed one diesel generator would be added at the Walnut Creek WTP for backup emergency energy supply purposes.[1] The kitchenette and bathroom in the consolidated maintenance building at the Walnut Creek WTP would require water supplies. These activities would produce direct GHG emissions as a result of the combustion of fuel from on-road and off-road vehicles, and indirect GHG emissions from production of electricity by Pacific Gas & Electric.[2] Approximately 86 trees would be removed and 18 planted at the Walnut Creek WTP and approximately 28 trees would be removed and 7 planted at the Lafayette WTP. On balance, this would result in the loss of a carbon sink over the Project lifetime. As described above, CalEEMod was used to estimate GHG emissions, as presented in **Table 3.7-5** (see CalEEMod outputs in **Appendix K**). Emissions in **Table 3.7-5** are presented in terms of annual emissions in order to compare them to the operational threshold established in the 2017 BAAQMD CEQA Guidelines (BAAQMD, 2017a), which is in terms of $MTCO_2e$ per year.

Table 3.7-5: GHG Emissions – Walnut Creek WTP and Lafayette WTP Operation

Source	Total Maximum Annual Emissions ($MTCO_2e$/yr)
Mobile	23
Energy	467
Annual sequestration loss from trees removed during construction	24
Other (emergency generator, water use)	93
Total Operational Emissions (MTCO2e)	607
Threshold	1,100
Exceed threshold?	No

As shown, annual operational emissions would be below the 2017 BAAQMD CEQA significance threshold. In addition, EBMUD produces more electricity annually through renewable sources than it requires for its operation and maintenance (EBMUD, 2021a). EBMUD currently produces renewable energy through hydropower, combusting biogas, and through solar photovoltaic projects. EBMUD plans to construct the Duffel PV Renewable Energy Project in the near future. Therefore, GHG emissions from the Project associated with indirect electricity use would be largely offset by EBMUD's renewable energy supplies.

Operation and maintenance would not generate GHG emissions that would have a significant impact on the environment, and the impact would be less than significant.

Significance Determination Before Mitigation

Less than significant.

[1] For modeling purposes, it was assumed one 6,000-hp diesel emergency generator would operate 40 hours per year at the Walnut Creek WTP. Default CalEEMod clean engine adoption timelines were relied on for modeling purposes (i.e., in CalEEMod, the generator was assumed to become operational in 2030 but the model was not forced to assume the generator would have a Tier 4 engine). See Appendix K.
[2] For modeling purposes, it was assumed the consolidated maintenance building at the Walnut Creek WTP would generate 12,000 gallons per year of indoor water use, which would produce about 1 $MTCO_2e$/year. See Appendix K.

Mitigation Measures

None required.

Impact GHG-2: Conflict with a plan, policy, or regulation adopted for the purpose of reducing GHG emissions. (Criterion 2)

Project GHG emissions are analyzed in the context of the GHG reduction goals of AB 32, SB 32, the 2017 Scoping Plan Update, BAAQMD's 2017 Clean Air Plan, EBMUD's Climate Change Monitoring and Response Plan, and EBMUD's Climate Action Plan to determine whether the Project would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions.

Construction

During construction, operation of diesel-fueled off-road construction equipment and on-road vehicles associated with worker commute, material delivery, and hauling would directly generate GHG emissions. Actions in the 2017 Scoping Plan Update pertinent to Project vehicle emissions relate to emission controls imposed in the future, including: future implementation of California "Phase 2" controls to reduce GHG emissions in new heavy-duty vehicles beyond 2018 and continued implementation of diesel controls to reduce black carbon emissions from heavy-duty on-road engines as well as off-road engines. Actions would be implemented by CARB as new standards and policies and the BAAQMD through the implementation of its 2017 Clean Air Plan. Heavy-duty vehicles used during Project operations would comply with all applicable emission standards.

In addition, the 2017 Clean Air Plan identifies goals requiring adoption of ordinances to promote community-wide zero waste goals and recycling of construction and demolition materials in commercial and public construction projects. Consistent with the goals of the 2017 Clean Air Plan, the Project would reuse or recycle demolition materials on site to the extent feasible, including concrete demolition materials and excavated earth and therefore be consistent with the goals in the 2017 Clean Air Plan. Therefore, the Project's GHG emissions would not conflict with any plans, policies, or regulations adopted for the purpose of reducing GHG emissions (i.e., 2017 Scoping Plan Update actions and the 2017 Clean Air Plan).

Additionally, as detailed in Chapter 2, Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including Standard Construction Specification 01 35 44 Section 3.5, Air Quality Control, which requires that construction crews use alternative-fueled construction equipment and recycle or reuse construction waste or demolition materials to the extent feasible. Implementation of EBMUD Standard Construction Specification 01 35 44, Section 3.5 would ensure that diesel trucks and off-road equipment would comply with the latest vehicle emission standards established by CARB pursuant to the 2017 Scoping Plan Update resulting in a less than significant impact.

Operation and Maintenance

Operation and maintenance of the Project would involve an increase in electricity use, which would indirectly produce GHG emissions, and a small increase in vehicle trips (approximately six new trips per day (i.e., 1 trip for dewatered solids removal, 1 for chemical delivery, and 4 for operations and maintenance staff), which would result in direct GHG emissions.

EBMUD's Climate Change Monitoring and Response Plan includes actions EBMUD is taking to reduce its emissions, particularly from its fleet operations, which accounted for approximately 15 percent of EBMUD's total GHG emissions in 2020 (EBMUD, 2021b). Actions pertinent to the Project include procuring alternative fueled (e.g., liquefied natural gas [LNG], compressed natural gas [CNG], biodiesel) engines, hybrid electric vehicles, plug-in hybrid vehicles and developing new applications for existing technology (e.g., hybrid electric drives for service trucks). According to EBMUD's Climate Action Plan, EBMUD has transitioned to nearly 100 percent renewable diesel for its medium- and heavy-duty fleet and is investing in more fuel-efficient hybrid and plug-in electric vehicles for its light-duty applications. Adherence to EBMUD Climate Change Monitoring and Response Plan and Climate Action Plan goals would ensure that its fleet would comply with the latest vehicle emission standards established by CARB pursuant to the 2017 Scoping Plan Update, resulting in a less than significant impact.

With respect to indirect GHG emissions associated with electrical energy use, the additional electricity required by the Project site would result in indirect GHG emissions. Indirect GHG emissions from electricity used by the Project would be subject to goals in EBMUD's 2021 Climate Action Plan and to measures in EBMUD's 2014 Climate Change Monitoring and Response Plan, which outlines how GHG emissions reductions are accomplished through implementation of energy efficiency practices, use of low-carbon energy sources, reductions in non-CO_2 emissions reductions (including black carbon), and carbon sequestration. EBMUD evaluates each project for water and energy conservation opportunities as well as the potential to create renewable energy. Energy efficiency measures implemented by EBMUD that pertain to the Project include the following:

- Minimizing GHG emissions as a goal in planning new projects.
- Reducing water use at EBMUD facilities through equipment upgrades and metering.
- Reviewing EBMUD's equipment specifications to ensure that energy efficient systems are appropriately procured.
- Regularly performing pump efficiency tests to evaluate efficiency degradation over time.
- Replacing low efficiency pumps/motors with higher efficiency equipment.
- Continuing to look for new renewable energy opportunities, including battery storage and purchasing through community choice aggregators.

Implementation of such measures would help minimize the Project's indirect GHG emissions associated with energy use. EBMUD's 2014 Climate Change Monitoring and Response Plan and 2021 Climate Action Plan energy efficiency measures and goal to eliminate GHG emissions from the water system by 2030 would be implemented as part of the Project.

Because energy efficiency measures would be implemented in accordance with the 2014 Climate Change Monitoring and Response Plan and 2021 Climate Action Plan, the Project's operation and maintenance GHG emissions would not conflict with Scoping Plan actions, 2017 Clean Air Plan, or the BAAQMD-recommended CEQA significance thresholds, resulting in a less than significant impact.

Significance Determination Before Mitigation

Less than significant.

Mitigation Measures

None required.

Cumulative Impact Analysis

Climate change is a global problem and GHGs are globally distributed pollutants. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about 1 day), GHGs have long atmospheric lifetimes (1 year to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Therefore, the effects of GHGs are also experienced globally. The atmospheric concentration of GHGs determines the intensity of climate change, with current levels already leading to increases in global temperatures, sea level rise, severe weather, and other environmental impacts. The continued increase in atmospheric GHG concentrations will only worsen the severity and intensity of climate change, leading to irrevocable environmental changes. Therefore, in the context of CEQA, GHG impacts on global climate change are inherently cumulative. No single project could generate enough GHG emissions to contribute noticeably to a change in the global average temperature. However, the combination of GHG emissions from present and future projects contributes substantially to the phenomenon of global climate change and its associated environmental impacts.

As discussed under Impacts GHG-1 and GHG-2, GHG emissions from operation and maintenance of the Project would be less than significant. The Project would also comply with the goals and actions of applicable GHG reduction plans at the local and state levels that aim to achieve the 2030 target established by SB 32 for California to meet a 40 percent reduction in GHG emissions by 2030 compared to 1990 levels. The Project would also not conflict with the applicable GHG reduction plans at the local and state levels to achieve the 2050 target of an 80 percent reduction compared to 1990 levels, established by AB 32. Therefore, Project contribution to the global cumulative impact would be less than significant.

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3.8 Hazards and Hazardous Materials

This section describes the physical, environmental, and regulatory setting for hazards and hazardous materials, identifies the significance criteria for determining environmental impacts, and evaluates the potential hazards and hazardous materials impacts that could result from implementation of the Project.

Potential hazards addressed in this section include releases of hazardous materials from equipment and materials during construction and operation, exposure to hazardous materials from existing hazardous materials sites, wildfires, airport safety, and impairments to emergency access and response.

3.8.1 Environmental Setting

Concepts and Terminology

Definitions of terms used in the characterization of baseline conditions, regulatory framework, and impact analysis for hazards and hazardous materials are provided below.

- **Hazardous Material:** The term "hazardous material" has varying definitions depending on the regulatory programs. For the purposes of this EIR, the term refers to both hazardous materials and hazardous wastes. The California Health and Safety Code Section 25501(n) defines hazardous material as: any material that because of its quantity, concentrations, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. Hazardous materials include, but are not limited to, hazardous substances, hazardous waste, and any material that a handler or the administering agency has a reasonable basis for believing would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.
- **Hazardous Waste:** A "hazardous waste" is a waste that because of its quantity, concentration, or physical, chemical, or infectious characteristic, causes or significantly contributes to an increase in mortality or illness or poses substantial or potential threats to public health or the environment (42 United States Code [U.S.C.] 6903(5)). Hazardous wastes are further defined under the Resource Conservation and Recovery Act (RCRA) as substances exhibiting the characteristics of ignitability, reactivity, corrosivity, or toxicity. Chemical-specific concentrations used to define whether a material is a hazardous, designated, or nonhazardous waste include Total Threshold Limit Concentrations (TTLCs), Soluble Threshold Limit Concentrations (STLCs), and Toxic Characteristic Leaching Procedures (TCLPs), listed in California Code of Regulations (CCR) Title 22, Chapter 11, Article 3, Section 66261, and are used as waste acceptance criteria for landfills. Waste materials with chemical concentrations above TTLCs, STLCs, and TCLPs must be sent to Class I disposal facilities, may be sent to Class II disposal facilities depending on the waste material, and may not be sent to Class III disposal facilities.[1]

[1] Class I disposal facilities are specifically for hazardous waste, as defined by CCR Title 22, Class II facilities are "designated" waste facilities and must acquire special permitting to accept designated types of hazardous materials, and Class III disposal facilities are strictly for non-hazardous waste (CCR Title 23, Division 3, Chapter 15).

- **Screening Levels for Hazardous Materials in Soil, Soil Gas, or Groundwater:** The United States Environmental Protection Agency (USEPA) Regional Screening Levels (RSLs) and San Francisco Bay Area Regional Water Quality Control Board (SFRWQCB) Environmental Screening Levels (ESLs) are guidelines used to evaluate the potential risk associated with chemicals in soil or groundwater where a release of hazardous materials has occurred. Although developed and maintained by the SFRWQCB, ESLs are used by regulatory agencies throughout the State. Screening levels have been established for both residential and commercial/industrial land uses, and for construction workers. Residential screening levels are the most restrictive. Soil with chemical concentrations below these ESLs generally would not require remediation and would be suitable for unrestricted uses if disposed of offsite.

  Commercial/industrial screening levels are generally less restrictive than residential screening levels because they are based on potential worker exposure to hazardous materials in the soil (and these are generally less than residential exposures). Screening levels for construction workers are also less restrictive than for commercial/industrial workers because construction workers are only exposed to the chemical of concern during the duration of construction, while industrial workers are assumed to be exposed over a working lifetime. Chemical concentrations below these screening levels generally would not require remediation and would be suitable for unrestricted uses. In addition, there are other more specific but similar screening levels used for more narrowly focused human health or ecological risk assessment considerations.

Regional Setting

The Walnut Creek Water Treatment Plant (WTP) is located in a residential and surrounding open-space area in Walnut Creek, California in Contra Costa County. The Walnut Creek WTP Project site is bounded by Alfred Avenue to the east, the Briones to Mt. Diablo Regional Trail to the north, and Acalanes Ridge Open Space to the south and west. The Acalanes Ridge Open Space is a 171-acre preserve with recreational uses such as hiking, dog walking, and biking. There are single family homes to the east and north of the Project site and St. Stephen Catholic Church is located northeast of the site.

The Lafayette WTP is located in Lafayette, California in Contra Costa County. The Lafayette WTP Project site is bounded by Mt. Diablo Boulevard to the south and west, Temple Isaiah to the east, and State Route 24 (SR-24) to the north. There are no residences adjacent to the site.

Local Setting

Both the Walnut Creek WTP and Lafayette WTP have had permitted hazardous materials uses, as ongoing water treatment plant operation and maintenance require the use and storage of hazardous materials.

A Phase I Environmental Site Assessment (ESA) was completed for the Walnut Creek WTP site on October 20, 2022 (Woodard & Curran, 2022). The Phase I ESA was conducted in general accordance with the American Society for Testing and Materials (ASTM) International "Standard Practice for Environmental Site Assessments E-1527-13" and the United States Environmental Protection Agency's (U.S. EPA) All Appropriate Inquiry Final Rule (40 CFR Part 312).

The Phase I ESA included a visual reconnaissance, historical research, and a review of applicable local, state, and federal environmental records. Specifically, Woodard & Curran evaluated the operational areas scheduled for demolition for evidence of the presence or likely presence of hazardous substances or petroleum products under conditions that indicate an existing release, a past release, or a material threat of releases into structures, soils, groundwater, surface water, or sediments (Woodard & Curran, 2022).

The Phase I ESA identified environmental risks at the Walnut Creek WTP related to the potential presence of potentially hazardous asbestos-containing materials and lead-based paint in certain buildings due to the age of existing structures. Renovation or demolition of the on-site structures would require an asbestos and lead-based paint survey and possible abatement. A historical records search indicated that polychlorinated biphenyls (PCBs) and PCB-containing materials were generated at the Walnut Creek WTP property in 1994 and 2002. It is also possible that older transformers located on the Walnut Creek WTP site may contain PCBs due to the age of the equipment. In addition, historical records indicated the potential listing of a 55-gallom gasoline underground storage tank (UST) and a 1,000-gallon gasoline UST on the Walnut Creek WTP property. No record of a spill or release was identified in connection with the USTs on the Walnut Creek WTP property; however, there is lack of available information on the location and removal history of the USTs. The Phase I ESA is included as **Appendix F** of this EIR.

Previous site assessments at the Lafayette WTP have found no environmental cases identified within the ASTM International E 1527 search distances (EBMUD, 2006). No spills of hazardous materials or cause for hazardous materials investigations have been indicated (EBMUD, 2006). Previous studies by EBMUD identified lead-based paint on the exterior of Lafayette Weir No. 1. However, this lead based paint will be removed as part of an on-going construction project at the Lafayette WTP.

Known Contamination Sites

Two online databases were searched for known contamination sites within the study area, including EnviroStor (State Department of Toxic Substances Control [DTSC] Hazardous Waste and Substances Site List) and GeoTracker (State Water Resources Control Board [SWRCB]). A search of the two databases in August 2022 showed no known hazardous waste clean-up sites or underground storage tanks at either the Walnut Creek WTP or Lafayette WTP, or within 1,000 feet of either site (SWRCB, 2022a; SWRCB, 2022b; and DTSC, 2022).

The DTSC is responsible for maintaining and updating the Hazardous Waste and Substances Site List (Cortese List). The Cortese List is a planning document used by several agencies and developers to comply with California Environmental Quality Act (CEQA) requirements. The Cortese List was consulted on August 17, 2022, and neither WTP site is included on the list (DTSC, 2022).

Schools Within One-quarter Mile of Project Site

There are no schools located within one-quarter mile of the either the Walnut Creek WTP site or Lafayette WTP site. The closest school to the Walnut Creek WTP is Contra Costa Christian Schools campus in Walnut Creek, which serves students from preschool through high school and is located about 0.4 miles from the site. The closest schools to the Lafayette WTP are the Happy Valley School and Lafayette Elementary School, which are both located approximately 1 mile from the site.

Airports

No airports or airstrips are within 2 miles of the Walnut Creek WTP or Lafayette WTP sites. The only airport in Contra Costa County is Buchanan Field, which is about 4.5 miles from the Walnut Creek WTP and about 7.5 miles from the Lafayette WTP.

Wildfire Hazards

California Department of Forestry and Fire Protection (CAL FIRE) has developed a Fire Hazard Severity Zone ranking system that predicts the likelihood of an area burning. The ranking system is based on vegetation, topography, weather, crown fire potential, and ember production and movement. Both the Walnut Creek WTP and Lafayette WTP sites are designated as a Local Responsibility Areas, indicating that local jurisdictions are responsible for wildfire management in the areas.

Neither the Walnut Creek WTP nor the Lafayette WTP sites are located in designated Very High Fire Hazard Severity Zones (VHFHSZs). However, VHFHSZs exist in surrounding areas, including to the west of the Walnut Creek WTP site, near Briones Regional Park, and to the south of the Walnut Creek WTP, to the south of the Acalanes Ridge Open Space Area. There are also VHFHSZs located to the north of the Lafayette WTP site, north of SR-24, and to the west of the Lafayette WTP site, west of the Lafayette Reservoir Recreation Area, south of Mt. Diablo Boulevard (CAL FIRE, 2009).

The City of Walnut Creek General Plan identifies the “threat to people from wildland fire” at the Walnut Creek WTP site as “Very High” (Walnut Creek General Plan, 2006 - Figure 7 Wildland-Urban Interface Fire Threat), because of the proximity to wildland areas in the Acalanes Ridge Open Space (City of Walnut Creek, 2006). The City of Lafayette General Plan does not include a map of areas subject to high threat of fire. More information on wildfire hazards associated with the Project is included in *Section 3.15, Wildfire*.

3.8.2 Regulatory Framework

This section describes policies and regulations related to hazards and hazardous materials that may apply to the Project. Policies and regulations related to wildfire hazards are provided in *Section 3.15,Wildfire*.

Federal Policies and Regulations

Resource Conservation and Recovery Act (RCRA)

RCRA regulates potential health and environmental problems associated with solid waste hazards and nonhazardous waste. RCRA defines solid waste as garbage or refuse, sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility, or other discarded materials. Solid waste can be either hazardous or non-hazardous. RCRA regulates the disposal of waste and aims to reduce waste generation. RCRA restricts which facilities can receive hazardous wastes and regulates facilities to ensure proper handling of materials.

Hazardous and Solid Waste Act

The Hazardous and Solid Waste Act amended RCRA in 1984, phased out land disposal of hazardous waste and focused on waste minimization. The Act also included increased enforcement authority for the USEPA and more stringent hazardous waste management standards.

Emergency Planning and Community Right-To-Know Act (EPCRA)

EPCRA was passed in 1986 and requires federal, state, and local governments to create chemical emergency response plans for releases of hazardous substances. EPCRA also requires reporting on hazardous and toxic chemicals to increase awareness and access to information on chemical and individual facilities. EPCRA requires that facilities report accidental releases of certain chemicals and hazardous substances and provide such information to the public.

Federal Hazardous Materials Transportation

Transportation of hazardous materials is regulated by the Federal Hazardous Materials Transportation Act (HMTA) of 1974 and the Hazardous Materials Transportation Uniform Safety Act (HMTUSA) of 1990. The HMTA was established to provide adequate protection against the risks to life and property inherent in the transportation of hazardous materials. Carriers of hazardous materials must follow Department of Transportation rules, maintain rapid response plans for emergencies, and undergo safety trainings.

Hazardous Materials Worker Safety Requirements

The federal Occupational Safety and Health Administration (OSHA) is the federal agency responsible for ensuring worker safety. The federal regulations for worker safety are contained in CFR Title 29, as authorized in the Occupational Safety and Health Act of 1970; these regulations provide standards for safe workplaces and work practices, including those relating to hazardous materials handling.

State Policies and Regulations

California Health and Safety Code

The California Health and Safety Code contains statewide regulations designed to protect public health and safety. Section 65962.5 of the California Government Code includes the Cortese List. As discussed in *Section 3.8.1*, the Cortese List is compiled and maintained by the DTSC under the California EPA. The Cortese List is a list of all sites identified as having hazardous waste releases.

Facilities that handle, store, use, treat, dispose of, or generate hazardous materials are required to create hazardous-waste management programs under Division 20, Chapter 6.5, section 25100 et seq under the California Hazardous Waste Control Act. Hazardous materials handling, reporting requirements, and local agency surveillance programs are regulated under the California Health and Safety Code, Section 25500 et seq.

California Health and Safety Code, Division 20, Chapter 6.8, Sections 25300 et seq. is the California Hazardous Substance Account Act or state Superfund law which allows DTSC to investigate and remediate hazardous substances pursuant to state law.

Transportation of Hazardous Wastes

Regulatory requirements for the transport of hazardous wastes in California are specified in CCR Title 22 Division 4.5 Chapters 13 and 29. Hazardous waste transporters must comply with the California Vehicle Code, California Highway Patrol regulations (CCR, Title 13), and California

State Fire Marshal regulations (CCR Title, 19). California regulations identify specific cleanup actions that must be taken by a hazardous waste transporter in the event of a discharge or spill, and for the safe packaging and transport of hazardous wastes.

California Fire Code

The California Fire Code, Article 80, includes specific requirements for the safe storage and handling of hazardous materials. The requirements reduce the potential for a release of hazardous materials and for the mixing of incompatible chemicals and specify secondary containment, separation of incompatible materials and spill response procedures to reduce the potential for a release of hazardous materials that could affect public health or the environment.

Hazardous Materials Worker Safety Requirements

The state regulations concerning the use of hazardous materials in the workplace are included in CCR Title 8, and include requirements for safety training, availability of safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation. Cal/OSHA standards are generally more stringent than federal OSHA regulations. Cal/OSHA also enforces hazard communication program regulations, which contain worker safety training and hazard information requirements, such as procedures for identifying and labeling hazardous substances, communicating hazard information relating to hazardous substances and their handling, and preparation of health and safety plans to protect workers.

Hazardous Building Materials Regulations

Numerous existing regulations require that demolition and renovation activities that may disturb or require the removal of materials that consist of, contain, or are coated with asbestos-containing materials and lead-based paint (LBP), or other hazardous materials must be inspected and/or tested for the presence of hazardous materials. If present, the hazardous materials must be managed and disposed of in accordance with applicable laws and regulations.

The identification, removal, and disposal of asbestos-containing materials are regulated under CCR Title 8, Division 1, Chapter 4, Article 4, Section 1529 and 5208. The identification, removal, and disposal of LBP are regulated under CCR Title 8, Division 1, Chapter 4, Article 4, Section 1532.1. All work must be conducted by a state-certified professional, which would ensure compliance with applicable regulations. If asbestos-containing materials and/or LBP are determined to exist on site, a site-specific Hazard Control Plan must be prepared detailing removal methods and specific instructions for providing protective clothing and equipment for abatement personnel. A state-certified lead-based paint and/or an asbestos-containing materials removal contractor would be retained to conduct the appropriate abatement measures as required by the plan. Wastes from abatement and demolition activities would be transported and disposed of at a landfill permitted to accept such waste and in compliance with applicable local, state, and federal laws and regulations. Once abatement measures have been implemented, the contractor would conduct a clearance examination and provide written documentation to the local Bay Area Air Quality Management District (BAAQMD) that testing and abatement have been completed in accordance with federal, state, and local laws and regulations.

Local Policies and Regulations

DTSC-Certified Unified Program Agency (CUPA)

The Certified Unified Program Agency (CUPA) addresses impacts from hazardous wastes to meet the requirements identified by the DTSC-Unified Program. The DTSC-Unified Program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of six environmental and emergency response programs: Hazardous Materials Release Response Plans and Inventories; California Accidental Release Prevention Program; Underground Storage Tank Program; Above Ground Petroleum Storage Act Program; Hazardous Waste Generator and Onsite Hazardous Waste Treatment Programs; and California Uniform Fire Code: Hazardous Material Management Plans and Hazardous Material Inventory Statements. The CUPA responsible for the Project area is the Contra Costa County Health Services Division.

California Accidental Release Program

The California Accidental Release Program (CalARP) includes regulatory requirements for facilities that handle regulated substances. Ammonia is a regulated substance under state and federal risk management regulations. In accordance with CalARP regulations, preparation of a risk management plan (RMP) is required for the storage of regulated substances above threshold quantities. The RMP includes a hazard assessment to evaluate the potential effects of an accidental release, a program for preventing an accidental release, and a program for responding to an accidental release. The RMP is filed with and administrated by CUPA, which ensures review by and distribution to other potentially affected agencies. Ammonia is used at the Walnut Creek WTP and Lafayette WTP. CalARP regulations apply to all ammonia solutions. EBMUD has prepared RMPs for both WTP sites. Although acetylene and propane are used at the Walnut Creek WTP, the quantities stored are well below the threshold planning quantity.

The Contra Costa County Emergency Operations Plan

The Contra Costa County Emergency Operations Plan defines the governmental policies and procedures that would be implemented in response to an emergency (Contra Costa County, 2015) and sets forth goals and procedures for interagency coordination and emergency management, and guides agency decisions that relate to hazards and emergencies.

Walnut Creek General Plan

The City of Walnut Creek General Plan is a long-range policy document intended to guide physical, economic, and environmental growth in the City of Walnut Creek. The City of Walnut Creek General Plan contains citywide elements, including a Safety and Noise element, which contains goals and objectives to reduce dangers from hazards and hazardous materials to promote public safety. The City of Walnut Creek General Plan, which was adopted in 2006 and most recently amended in 2020, has a timeframe that extends to the year 2025. Applicable goals and objectives from the general plan are listed below.

Goal 6-3. Reduce dangers from hazardous materials.

> **Policy 6-3.1** Reduce dangers from hazardous materials.
>
> **Policy 6-3.2** Prioritize safety needs of non-industrial land uses.

Policy 6-3.3 Incorporate hazardous material-abatement provisions in zoning and subdivision decisions and entitlement permits.

Policy 6-3.4 Work with federal and state authorities to ensure that any transport of its hazardous materials through Walnut Creek is at the highest standard of safety.

Policy 6-3.5 Require that soils, groundwater, and buildings affected by hazardous-material releases from prior land uses, and lead and asbestos potentially present in building materials, will not have the potential to adversely affect the environment or the health and safety of residents

Policy 6-3.6 Require that new development and redevelopment protect public health and safety from hazardous materials.

Goal 6-4. Strive to prevent and reduce damage related to fire hazards.

Policy 6-4.1 Regulate projects in high-risk areas.

Policy 6-4.2. Work with the Contra Costa County Fire Protection District to ensure adequate fire response times and address other fire-related issues in the Planning Area.

Lafayette General Plan

The City of Lafayette General Plan is a long-range policy document intended to guide physical, economic, and environmental growth in the City of Lafayette. The City of Lafayette General Plan contains citywide elements, including a Safety element. The City of Lafayette General Plan, which was adopted in 2002 and most recently amended in 2020, has a timeframe that extends to the year 2040. Applicable goals and objectives from the general plan are listed below.

Goal S-4. Minimize risks to Lafayette residents and property from fire hazards.

Policy S-4.1. <u>Adequate Fire Protection</u>: Enforce regulations and standards which contribute to adequate fire protection.

Policy S-4.2. <u>Reducing Fire Risk From Development</u>: Take measures to reduce fire risks from new and existing development as well as natural fire hazards.

Policy S-4.5. <u>Vegetation Management Plan</u>: Require development in a high fire risk area to have an approved vegetation management plan that includes native, drought tolerant, and fire resistant species.

Goal S-5. Reduce the hazards of the storage, transportation and disposal of hazardous materials.

Policy S-5.1. <u>Storage of Hazardous Materials</u>: Strictly enforce the regulations governing the storage of chemical, biological and other hazardous materials as set forth in California Code of Regulations, Title 22, Division 4.5.

Policy S-5.2. <u>Transport of Hazardous Materials</u>: Develop, in cooperation with the County and neighboring cities, regulations prohibiting through-transport by truck of hazardous materials on the local street systems and require that this activity be limited to State highways.

Policy S-5.3. <u>Transportation, Storage and Disposal Facilities</u>: Provide measures to protect the public from the hazards associated with the Transportation, Storage and Disposal of hazardous wastes.

EBMUD Hazardous Materials Building Plan

In accordance with the community right-to-know laws, because EBMUD is a business that handles specified quantities of chemicals at the Walnut Creek WTP and Lafayette WTP, EBMUD has prepared and submitted a Hazardous Materials Business Plan (HMBP) for both the Walnut Creek WTP and Lafayette WTPs. HMBPs allow local agencies to plan appropriately for chemical release, fire, or other incident. The HMBP includes the following:

- An inventory of hazardous materials with specific quantity data, storage or containment descriptions, ingredients of mixtures, and physical and health hazard information
- Site and facility layouts that must be coded for chemical storage areas and others facility safety information
- Emergency response procedures for a release or threatened release of hazardous materials
- Procedures for immediate notification of releases to the administering agency
- Evacuation plans and procedures for the facility
- Descriptions of employee training in evacuation and safety procedures in the event of a release or threatened release of hazardous materials consistent with employee responsibilities, and proof of implementing such training on an annual basis
- Identification of local emergency medical assistance appropriate for potential hazardous materials incidents

Under the CUPA regulations, the Contra Costa County Health Services Department is responsible for implementing the Hazardous Materials Building Plan requirements for the two facilities within Contra Costa County.

EBMUD Engineering Standard Practice 514, Identifying Buried Conflicts

EBMUD Engineering Standard Practice 514, Identifying Buried Conflicts, provides guidelinesand minimum steps required for the investigation needed to identify existing underground utilities, and to establish a uniform approach for site reconnaissance of existing buried conflicts, including active utilities (EBMUD, 2008).

EBMUD Procedure 711 Hazardous Waste Removal

EBMUD Procedure 711, Hazardous Waste Removal, defines hazardous waste and establishes responsibilities for removal of hazardous wastes from EBMUD facilities (EBMUD, 2020a). Procedure 711 outlines specific steps and responsibilities for: characterizing the waste and determining what analyses are needed to classify the waste; coordinating waste disposal, reuse or recycling issues; labeling, storing, inspecting, and maintaining inventory records for the waste; and reviewing, signing, and tracking any hazardous waste handling and disposal requirements and hazardous waste manifests.

EBMUD Standard Construction Specifications

EBMUD's Standard Construction Specifications and Procedures apply to all contractors completing work for EBMUD, and to work completed by EBMUD staff. The following EBMUD practices and procedures are applicable to hazard and hazardous materials.

- **EBMUD Standard Construction Specification 01 35 24 Project Safety Requirements.**

  EBMUD Standard Construction Specification 01 35 24 (Project Safety Requirements) sets forth the requirements for maintaining job-site safety to which construction crews must adhere and includes requirements to prepare plans and procedures to ensure the safe and lawful handling of hazardous materials, implementation of plans, and documentation of compliance (EBMUD, 2020b).

  - **Project Health and Safety Plan**. EBMUD Standard Construction Specification 01 35 24 (Project Safety Requirements) Section 1.3(B) requires that, before the start of construction, the Contractor must prepare a Project Health and Safety Plan approved by EBMUD that addresses anticipated hazards related to hazardous substances, fall protection, confined spaces, and trenches or excavations. The plan must designate a Project Health and Safety Representative and a qualified person to take air samples and measurements of known or suspected hazardous materials. All personnel who will likely be exposed to hazardous substances must have appropriate training. The plan must include an Emergency Action Plan in the event of an accident or serious unplanned event that requires notifying any responsive agencies (e.g., fire department, PG&E, rescue teams).
  - **Emergency Action Plan.** EBMUD Standard Construction Specification 01 35 24, Project Safety Requirements, Section 1.3(E) requires the contractor to submit an Emergency Action Plan that prepares responses to accidents and injuries, as well as other serious unplanned events, such as fire, that requires notifying any responsive agencies (including fire departments, PG&E, rescue teams).
  - **Electrical Safety Plan.** EBMUD Standard Construction Specification 01 35 24, Project Safety Requirements, Section 1.3 (K) requires the contractor to submit a detailed Electrical Safety Plan that is in accordance with National Fire Prevention Association (NFPA) 70E Article 110
  - **Excavation Safety Plan.** EBMUD Standard Construction Specification 01 35 24, Project Safety Requirements, Section 1.3 (L) requires that the excavation of any trench 5 feet or more in depth shall not begin until the contractor has received notification of the engineer's acceptance of the detailed plan for worker protection from the hazards of caving ground during the excavation of such trench. The plan shall comply with applicable codes and regulations and show the details of the design of shoring, bracing, sloping or other provisions to be made for worker protection during such excavation.
  - **Fire Prevention and Protection.** EBMUD Standard Construction Specification 01 35 24, Project Safety Requirements, Section 3.2(G) dictates fire prevention and protection practices. The specification is further described in *Section 3.15, Wildfire*.

- **EBMUD Standard Construction Specification 01 35 44 Environmental Requirements.**

  EBMUD Standard Construction Specification 01 35 44 (Environmental Requirements) sets forth the contract requirements for environmental compliance to which construction crews must adhere and stipulates that the construction crew shall be responsible for maintaining compliance with applicable federal, state, and local requirements. The requirements include preparation of plans that outline procedures to be followed to ensure the safe and lawful handling of hazardous materials, implementation of plans, and documentation of compliance (EBMUD, 2023).

- **Controls on Site Activities.** EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, Section 1.1(B) requires that activities on the construction site are controlled to prevent discharge of contaminated stormwater. Applicable requirements include:
  - Protect storm drains and surface waters from impacts of project activity.
  - Store materials and wastes such as demolition material, soil, sand, asphalt, rubbish, paint, cement, concrete or washings thereof, oil or petroleum products, or earthen materials in a manner to prevent it from being washed by rainfall or runoff outside the construction limits.
  - Reuse or dispose of excess material consistent with all applicable legal requirements and disposal facility permits.
  - Clean up all spills and immediately notify the Engineer in the event of a spill.
  - Equip stationary equipment such as motors, pumps, and generators with drip pans.
  - Divert or otherwise control surface water and waters flowing from existing projects, structures, or surrounding areas from coming onto the work and staging areas. The method of diversions or control shall be adequate to ensure the safety of stored materials and of personnel using these areas.
  - Following completion of Work, remove ditches, dikes, or other ground alterations made by the Contractor. The ground surfaces shall be returned to their former condition, or as near as practicable, in the Engineer's opinion.
  - Prevent visible dust emissions from leaving the work areas.
  - Maintain construction equipment in good operating condition to reduce emissions.
  - Handle, store, apply, and dispose of any chemical or hazardous material used in the performance of the Work in a manner consistent with all applicable federal, state, and local laws and regulations.
- **Storm Water Management.** EBMUD Standard Construction Specification 01 35 44 Section 1.4(A) requires submittal of a Stormwater Pollution Prevention Plan (SWPPP) that describes measures that shall be implemented to prevent the discharge of contaminated storm water runoff from the jobsite. Contaminants to be addressed include, but are not limited to, soil, sediment, concrete residue, pH less than 6.5 or greater than 8.5, and chlorine residual and all other contaminants known to exist at the jobsite location as described in Document 00 31 24 – Materials Assessment Information. In addition to the State's General Construction Stormwater Permit, the Contractor shall obtain and comply with regulatory requirements of local storm water permits, such as Contra Costa County's County Watershed Program to enable the inspection of C.6 construction stormwater BMPs.

- **Water Control and Disposal Plan.** EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, Section 1.4(B) requires that the Contractor shall submit a detailed Water Control and Disposal Plan, which shall comply with all requirements of the Specification and applicable discharge permits.
  - Non-Stormwater Discharges: Plan shall describe measures for containment, handling, treatment (as necessary), and disposal of discharges such as groundwater (if encountered), runoff of water used for dust control, stockpile leachate, tank heel water, wash water, sawcut slurry, test water and construction water.
  - Sanitary Sewer Discharges: Plan shall describe required applications and/or permits from the sanitary sewer system owner or agency having jurisdiction regarding the planned discharge. Plan shall outline monitoring and reporting expected to support sanitary sewer discharge, including a sampling and analysis plan. All monitoring results shall be submitted to the Engineer prior to the end of the Work.
- **Waste Management.** EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, Section 1.4(C) requires that prior to construction, the Contractor must prepare a Waste Management Plan and submit a copy of the plan for EBMUD's acceptance prior to disposing of any material (except for water wastes which shall be addressed in the Water Control and Disposal Plan). The plan shall identify how the contractor will remove, handle, transport, and dispose of all materials required to be removed in a safe, appropriate, and lawful manner in compliance with all applicable regulations of local, state, and federal agencies having jurisdiction over the disposal of removed materials. The contractor shall comply with local, state, and federal regulations having jurisdiction over the handling, transportation, and disposal of construction and demolition waste and shall include a list of reuse facilities, recycling facilities and processing facilities that will be receiving recovered materials. The plan must identify materials that are not recyclable or not recovered which will be disposed of in a landfill (or other means acceptable by the state of California and local ordinance and regulations) and list the permitted landfill, or other permitted disposal facilities, which will be accepting the disposed waste materials. The plan must also identify each type of waste material to be reused, recycled, or disposed of, and estimate the amount, by weight and shall include the sampling and analytical program for characterization of any waste material, as needed, prior to reuse, recycle or disposal. Materials or wastes shall only be disposed of at facilities approved of by EBMUD. Prior to disposition of wastes, contractor must submit permission to reuse, recycle, reclaim, or dispose of material from reuse, recycling, reclamation, or disposal site owner along with any other information needed by the EBMUD to evaluate the acceptability of the proposed reuse, recycling, or disposal site. Contractor shall disclose all information pertinent to the characterization of the material or waste to the EBMUD.
- **Spill Prevention and Response Plan.** EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, Section 1.4(E) requires the Contractor to submit a plan detailing the means and methods for preventing and controlling the spilling of known hazardous substances used on the jobsite or staging areas. The plan

shall include a list of the hazardous substances proposed for use or generated by the Contractor on site, including petroleum products, and measures that will be taken to prevent spills, monitor hazardous substances, and provide immediate response to spills. Spill response measures shall address notification of the Engineer and appropriate agencies including phone numbers; spill-related worker, public health, and safety issues; spill control, and spill cleanup.

- **Waste Disposal Records.** EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, Section 1.4(I) requires that if hazardous waste is being handled, the Contractor use the "Uniform Hazardous Waste Manifest," USEPA form 8700-22, and shall prepare for EBMUD's review, all hazardous waste manifests for acceptability prior to use. The Contractor is required to submit proof that the transporter is certified by the State to transport hazardous wastes prior to any off haul of hazardous wastes and must submit the name of disposal site where hazardous waste will be disposed of for Engineer's approval. Hazardous waste shall only be disposed of at hazardous waste disposal facilities approved by EBMUD.

- **EBMUD Standard Construction Specification 02 82 13 Asbestos Control Activities.**

  EBMUD Standard Construction Specification 02 82 13, Asbestos Control Activities, requires that the contractor submit a detailed plan of the procedures to address asbestos-containing materials (ACM) (EBMUD, 2014). The plan shall include the location and layout of decontamination areas, the sequencing of asbestos work, the interface of trades involved in the performance of work, disposal plan including location of approved disposal site, a detailed description of the methods to be employed to control pollution, description of use of portable HEPA ventilation system, method of removal to prohibit visible emissions in work area (including suppressing air-borne particulates using a minimum of two misting units operated simultaneously), and packaging of removed asbestos debris. All workers performing work shall meet the requirements of the Asbestos Certification issued by the California Contractors State License Board. During demolition procedures, the contractor shall protect against contamination of soils, water, adjacent residences and properties, and the airborne release of hazardous materials and dusts. Asbestos materials uncovered during the demolition activities shall be disposed of in an approved manner complying with all applicable federal, state, and local regulations. Transportation equipment for removal of ACM shall be suitable for loading, temporary storage, transit and unloading of waste without exposure to persons or property. Contractor shall removal all evidence of ACM materials from the jobsite that are related to Project demolition.

- **EBMUD Standard Construction Specification 02 83 13 Lead Hazard Control Activities.**

  EBMUD Standard Construction Specification 02 83 13, Lead Hazard Control Activities, requires that, before the start of demolition, the contractor shall prepare a Lead Demolition Plan detailing handling, engineering control, removal, and disposal procedures for lead-containing materials (EBMUD, 2016). All workers performing work shall meet the requirements of the California Department of Health Services lead-related construction interim certification. The lead work area will be isolated using caution tape, and the job site shall be secured at all times. Transportation equipment for removal of lead-containing materials shall be suitable for loading, temporary storage, transit and unloading of waste without exposure to persons or property. Contractor shall removal all evidence of lead-containing materials from the jobsite that are related to project demolition.

3.8.3 Impact Analysis

Methodology for Analysis

Potential impacts related to hazards and hazardous materials are assessed based on a review of information concerning hazardous risk factors, conditions at the Walnut Creek WTP and Lafayette WTP sites, Project activities, and applicable regulations, which were used to identify potential impacts on workers, the public, or the environment.

Significance Criteria

Consistent with Appendix G of the *CEQA Guidelines* an impact on associated with hazards or hazardous materials would be considered significant if the Project would:

1. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
2. 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.
3. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
4. 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.
5. 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.
6. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
7. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

Criteria Requiring No Further Evaluation

Criteria listed above that are not applicable to actions associated with the Project are identified below, along with a supporting rationale as to why further consideration is unnecessary and a no-impact determination is appropriate.

- ***Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school (Criterion 3).*** The Walnut Creek WTP and Lafayette WTP sites are not located within one-quarter mile of an existing or proposed school. The closest school to the Walnut Creek WTP is located about 0.4 miles from the site. The two closest schools to the

Lafayette WTP are both located approximately 1 mile from the site. Thus, there would be no impact and Criterion 3 is not discussed further in the analysis presented below.

- ***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 (Criterion 4).*** The Project is not located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Thus, there would be no impact, and Criterion 4 is not discussed further in the analysis presented below.
- ***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 (Criterion 5).*** The Project is not within two miles of a public airport and is not within the airport influence area of Buchanan Field, which is approximately 4.5 miles from the Walnut Creek WTP and approximately 7.5 miles from the Lafayette WTP. Thus, there would be no impact, and Criterion 5 is not discussed further in the analysis presented below.
- ***Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Implementation of the proposed Project would not affect any emergency response or evacuation plans (Criterion 6)***. Construction activities would be confined to the Walnut Creek WTP and Lafayette WTP and would not require lane or road closures. Thus, there would be no impact, and Criterion 6 is not discussed further in the analysis presented below.

Impacts and Mitigation Measures

Impacts HAZ-1 and HAZ-2: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment. (Criteria 1 and 2)

Construction Phase 1 and Phase 2

The Phase I ESA conducted by Woodard & Curran in 2022 identified the potential presence of hazardous waste, including the presence of potentially hazardous asbestos-containing materials and lead-based paint. Existing structures to be demolished during site preparation could contain asbestos and lead-based paint due to the age of the structures. Thus, demolition activities during site preparation could create a hazard to the public or environment through release of hazardous materials, asbestos, and lead-based paint. Demolition of facilities at the Lafayette WTP would entail the demolition and removal of the Lafayette Weir No. 1 structure, which is not known to contain asbestos or lead-based paint, or present other hazardous material risk, based on prior evaluation (EBMUD, 2006). Lead based paint was recently removed from the Lafayette Weir No. 1 structure at the Lafayette WTP (EBMUD, 2022).

The Phase I ESA identified historical records that indicate PCBs and PCB-containing materials were generated at the Walnut Creek WTP property in 1994 and 2002. It is also possible that older transformers located on the Walnut Creek WTP site may contain PCBs due to the age of the equipment. Although there is no evidence of a spill or release, the presence of PCBs and potential PCB-containing equipment is considered an environmental risk. In addition, historical records indicated the potential listing of a 55-gallon gasoline UST and a 1,000-gallon gasoline UST on the Walnut Creek WTP property. No record of a spill or release was identified in connection with the USTs; however, the lack of information associated with the USTs is considered an environmental risk. In addition, construction at both the Walnut Creek WTP and Lafayette WTP sites would require the use of diesel fuel and minor amounts of lubricants, paints, solvents, and glues that would be stored on the Walnut Creek WTP and Lafayette WTP sites during construction. Workers handling hazardous materials such as fuels and other hazardous materials used during construction are required to adhere to OSHA and Cal/OSHA health and safety requirements. Hazardous materials must be transported to and from the Project area in accordance with RCRA regulations, managed in accordance with the Contra Costa County Health Services Division regulations, and disposed of in accordance with RCRA and the CCR at a facility that is permitted to accept the waste. Because compliance with existing regulations and programs is mandatory, Project construction activities are not expected to create a potentially significant hazard to the public or the environment.

As described in *Section 3.8.2*, numerous existing regulations require that demolition and construction activities that may disturb or require the removal of hazardous materials be inspected and/or tested for the presence of hazardous materials. If present, the hazardous materials must be managed and disposed of in accordance with applicable laws and regulations. Prior to commencing construction activities, the Walnut Creek WTP and Lafayette WTP would implement practices and procedures that address hazardous materials, including the potential for presence of PCBs or contamination from USTs, which will be followed throughout the duration of construction, as described below.

<u>General Procedures to Address Hazardous Materials</u>

As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project to safely manage and dispose of hazardous materials. These include EBMUD Standard Construction Specification 01 35 24, Project Safety Requirements, Section 1.3(B), Project Safety and Health Plan, and Standard Construction Specification 01 35 44, Environmental Requirements, Section 1.1(B), Site Activities, Section 1.4(A), Storm Water Management, Section 1.4(B), Water Control and Disposal Plan, Section 1.4(C), Waste Management, Section 1.4(E), Spill and Prevention Response Plan, Section 1.4(I), Waste Disposal Records, Engineering Standard Practice 514, Identifying Buried Conflicts, and Procedure 711, Hazardous Waste Removal.

Implementation of Standard Construction Specification 01 35 24, Section 1.3(B) requires that before the start of construction, the contractor would prepare a Project Safety and Health Plan, approved by EBMUD, that addresses anticipated hazards related to hazardous substances, fall protection, and trenches or excavations. The plan would also describe measures for worker protection and control of ground movement. The plan would include drawings and details of system(s) to be used, the area in which each type of system would be used, dewatering, means of access and egress, storage of materials, and equipment restrictions. The contractor would also prepare an Excavation Safety Plan, approved by EBMUD, that describes measures for worker protection and control of ground movement.

EBMUD Standard Construction Specification 01 35 44, Section 1.1(B), Site Activities, would require that construction crews store, manage and/or dispose of debris, wastes, construction materials and soil to prevent discharge of contaminated stormwater from the worksite. Section

1.4(A), Storm Water Management, would require the construction contractor to submit a SWPPP, which would describe various best management practices to be implemented to prevent the discharge of sediment and/or other pollutants in stormwater runoff from the worksite, including measures to address possible spills of fuel during mobile fueling and leaks of petroleum products from construction equipment.

Implementation of Standard Construction Specification 01 35 44, Section 1.4(B), Water Control and Disposal Plan would require that the contractor submit a detailed Water Control and Disposal Plan for EBMUD's acceptance prior to any work at the jobsite. The plan would comply with requirements of all applicable discharge permits (e.g., NPDES Construction General Permit), and the contractor would maintain proper control of the discharge point to prevent sediment and potential pollutants, such as fuel spills and/or petroleum products from construction equipment leaks, in storm water discharges into receiving waters.

Implementation of EBMUD Standard Construction Specification 01 35 44, Section 1.4(C), Waste Management, would require that prior to construction, the contractor must prepare a Construction and Demolition Waste Disposal Plan and submit a copy of the plan for EBMUD's acceptance prior to disposing of any material (except for water wastes, which would be addressed in the required Water Control and Disposal Plan). The Construction and Demolition Waste Disposal Plan would identify how the contractor would remove, handle, transport, and dispose of all materials required to be removed in a safe, appropriate, and lawful manner in compliance with all applicable regulations of local, state, and federal agencies having jurisdiction over the disposal of removed materials.

Implementation of EBMUD Standard Construction Specification 01 35 44, Section 1.4(E), Spill Prevention and Response Plan, would require that prior to construction, the contractor would submit a Spill Prevention and Response Plan detailing the means and methods for preventing and controlling the spilling of known hazardous substances used on the worksite or staging areas, such as fuels and petroleum products from construction equipment leaks, and including a list of the hazardous substances proposed for use or generated by the contractor on site.

Implementation of Standard Construction Specification 01 35 44, Section 1.4(I) Waste Disposal Records requires documentation that the transporter of hazardous waste is certified by the State to transport hazardous wastes, such as contaminated soil, prior to any off haul of hazardous wastes. Hazardous waste may shall only be disposed of at hazardous waste disposal facilities approved by EBMUD.

EBMUD Procedure 711, Hazardous Waste Removal, defines hazardous wastes and establishes responsibilities for the removal of hazardous wastes, such as contaminated soil, from the site. Procedure 711 would require the contractor to carry out specific steps and responsibilities for characterizing waste and determining what analyses are needed to classify the waste; ensure correct labeling, storing, inspecting, and maintaining of inventory records for waste; and require reviewing, signing, and tracking of any hazardous waste handling, disposal requirements, and hazardous waste manifests.

Because EBMUD Standard Construction Specification 01 35 24, Project Safety Requirements, Section 1.3(B), Project Safety and Health Plan, Standard Construction Specification 01 35 44, Environmental Requirements, Section 1.1(B), Site Activities, Section 1.4(A), Storm Water Management, Section 1.4(B), Water Control and Disposal Plan, Section 1.4(C), Waste Management, Section 1.4(E), Spill and Prevention Response Plan, Section 1.4(I), Waste

Disposal Records, and Procedure 711, Hazardous Waste Removal have been incorporated into the Project, impacts related to the release of hazardous materials into the environment during construction would be less than significant.

Asbestos Containing Materials

As stated above, existing Walnut Creek WTP structures to be demolished during site preparation could contain asbestos due to the age of the structures. As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project including EBMUD Standard Construction Specification 02 82 13, Asbestos Control Activities which requires that the contractor submit a detailed plan of the procedures that would be implemented to minimize risks to the public and the environment associated with the demolition, packaging and offsite removal of asbestos. The plan would include the location and layout of decontamination areas, the sequencing of asbestos work, the interface of trades involved in the performance of work, disposal plan including location of approved disposal site, a detailed description of the methods to be employed to control pollution, description of the use of portable high efficiency particulate air (HEPA) ventilation system, method of removal to prohibit visible emissions in the work area (including suppressing air-borne particulates using a minimum of two misting units operated simultaneously), and packaging of removed asbestos debris.

Pursuant to state and local regulations, as well as EBMUD Standard Construction Specification 02 82 13, a site-specific Hazard Control Plan would be prepared, and a State-Certified ACM removal contractor would be retained. Prior to demolition, samples of building materials from the Walnut Creek WTP would be collected and tested for asbestos. Wastes from abatement and demolition activities would be transported to and disposed of at a Class I or a certified Class II landfill permitted to accept such waste. Once all abatement measures have been implemented, the contractor would conduct a clearance examination and provide documentation that testing and abatement were completed in accordance with federal, state, and local laws and regulations. The required compliance with these regulations, along with implementation of EBMUD Standard Construction Specifications and Procedures would ensure that the Project's impacts related to the release of asbestos into the environment would be less than significant.

Lead-Based Paint

As stated above, existing Walnut Creek WTP structures to be demolished during site preparation could contain lead-based paint due to the age of the structures. As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including Standard Construction Specification 02 83 13, Lead Hazard Control Activities which requires preparation of a Lead Demolition Plan prior to demolition. The plan would detail the safe handling, engineering control, removal, and disposal procedures for lead-containing materials and would therefore minimize the risk to the public and environment from the disposal of lead-based paint.

The contractor would be responsible for securing the worksite entrances and exits from all unauthorized persons, as well as securing the worksite at the end of each day, as is common practice on all EBMUD construction projects to protect the construction/demolition crew and the public from exposure to lead-based coatings. Any equipment used in the transportation of any hazardous waste be properly registered with all applicable controlling agencies to ensure its suitability to handle and transport hazardous waste products.

As described in EBMUD Standard Construction Specification 02 83 13, Lead Hazard Control Activities, a site-specific Hazard Control Plan would be prepared and a state-certified lead-based paint removal contractor would be retained. Prior to demolition, structures to be demolished at the Walnut Creek WTP would be sampled for lead by accredited inspectors to confirm the presence or absence of lead materials. Lead paint has already been removed from the Lafayette Weir No. 1 structure at the Lafayette WTP. Wastes from abatement and demolition activities would be transported to and disposed of at a Class I or certified Class II landfill permitted to accept such waste. Once all abatement measures have been implemented, the contractor would conduct a clearance examination and provide documentation that testing and abatement were completed in accordance with federal, state, and local laws and regulations. The required compliance with these regulations, along with implementation of EBMUD Standard Construction Specifications and Procedures, would ensure that the Project's impacts related to the release of lead-based paint into the environment would be less than significant.

Polychlorinated Biphenyls (PCBs)

As stated above, older transformers located on the Walnut Creek WTP site may contain PCBs due to the age of the equipment. Although there is no evidence of a spill or release, the presence of PCBs and potential PCB-containing equipment is considered an environmental risk. As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including EBMUD Standard Construction Specification 01 35 24, Section 1.3(B), Project Safety Requirements, which require any personnel likely to be exposed to hazardous conditions or substances at the site have completed all appropriate training for the hazards they may encounter. The contractor's qualified Project Safety and Health Representative shall be responsible for ensuring that all personnel are in compliance with applicable health and safety requirements. There is no record of PCB use at the Lafayette Weir No. 1 structure at the Lafayette WTP. The required compliance with applicable regulations, along with implementation of EBMUD Standard Construction Specifications and Procedures, would ensure that the Project's impacts related to the release of PCBs into the environment would be less than significant.

Underground Storage Tanks (USTs)

Historical records indicated the potential listing of a 55-gallon gasoline UST and a 1,000-gallon gasoline UST on the Walnut Creek WTP property. No record of a spill or release was identified in connection with the USTs; however, the lack of information associated with the USTs is considered an environmental risk. As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including EBMUD Standard Construction Specification 01 35 24, Section 1.3(B), Project Safety Requirements, which require any personnel likely to be exposed to hazardous conditions or substances at the site have completed all appropriate training for the hazards they may encounter. The contractor's qualified Project Safety and Health Representative shall be responsible for ensuring that all personnel are in compliance with applicable health and safety requirements. There is no record of USTs near the Lafayette Weir No. 1 structure at the Lafayette WTP. The required compliance with applicable regulations, along with implementation of EBMUD Standard Construction Specifications and Procedures, would ensure that the Project's impacts related to release of gasoline from USTs into the environment would be less than significant.

Accidental Rupture of High-Priority Subsurface Utilities

Construction activities during Phases 1 and 2 would involve excavations and trenching on active Walnut Creek WTP sites. There is a potential for accidental rupture of high-priority subsurface utilities. The rupture of a high-pressure gas pipeline could result in a release of flammable liquids or gases. Contact with buried electrical utilities could cause electrocution or shock, damage equipment, or ignite a wildfire. Consistent with California Government Code 4216.2, the contractor is required to contact Underground Service Alert (USA) North at least 2 working days prior to initiation of ground-disturbing activities. USA North would notify the utility providers in the vicinity of the planned excavations to mark the location of underground utilities and coordinate with the contractor (as necessary) to avoid damages. Construction workers are required to adhere to Cal/OSHA health and safety requirements for open trench construction excavations.

As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project including EBMUD Engineering Standard Practice 514, Identifying Buried Conflicts, and EBMUD Standard Construction Specification 01 35 24, Project Safety Requirements Section 1.3 (B), Project Health and Safety Plan, Section 1.3(K), Electrical Safety Plan, and Section 1.3 (L) Excavation Safety Plan which requires researching, collecting, identifying, and depicting existing utilities; preparing and implementing a Project Safety and Health Plan; and preparing and implementing an Electrical Safety Plan that would identify requirements to protect workers from hazardous voltages and hazardous materials.

Because the Project would comply with mandatory existing regulations and programs and with implementation of EBMUD Engineering Standard Practice 514, Identifying Buried Conflicts, and EBMUD Standard Construction Specification 01 35 24, Project Safety Requirements including Section 1.3 (B), Project Health and Safety Plan, Section 1.3 (K), Electrical Safety Plan, and Section 1.3 (L) Excavation Safety Plan, which requires researching, collecting, identifying, and depicting existing utilities, and preparation and implementation of a Project Safety and Health Plan and an Electrical Safety Plan that would identify requirements to protect workers from hazardous voltages and hazardous materials, the risk of accidental rupture of high-priority subsurface utilities is low, and impacts are considered less than significant.

Because construction activities, including site preparation activities, would not involve the routine transport of hazardous materials, and would be implemented in accordance with EBMUD's Standard Construction Specification 01 35 24, Project Safety Requirements, Standard Construction Specification 01 35 44, Environmental Requirements, EBMUD Engineering Standard Practice 514, Identifying Buried Conflicts, Procedure 711, Hazardous Waste Removal, Standard Construction Specification 02 82 13, Asbestos Control Activities, Standard Construction Specification 02 83 13, Lead Hazard Control Activities, all of which include measures to reduce and eliminate the risk of release of hazardous materials into the environment, hazard-related impacts to the public and the environment would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (**Appendix E**) lists the applicable standard specifications language.

Operation and Maintenance

Ongoing operation and maintenance at the Walnut Creek WTP and Lafayette WTP require the use, transport, and storage of hazardous materials. As required by law, EBMUD maintains a HMBP for both the Walnut Creek WTP and Lafayette WTP, which include a hazardous materials inventory that lists chemicals stored and used at each site (EBMUD, 2006). Operation and maintenance activities associated with the Project would adhere to the required HMBP and comply with applicable state and federal requirements regulating the storage and routine handling and transport of hazardous materials.

Because operation and maintenance activities associate with the Project would adhere to the required HMBP, which includes specific requirements for the use, transport, and storage of hazardous materials, the risk of operation and maintenance activities exposing the public or environment to hazardous materials is low, and the impact is considered less than significant. The improvements at the Walnut Creek WTP would involve new water treatment processes that would require the routine transport, use, and off-site disposal of additional chemicals, including alum, anionic polymer, hydrogen peroxide and liquid oxygen, the latter of which would be used to generate ozone. As noted in the Project Description, the new pretreatment process would include use of alum, anionic polymers, microsand, hydrogen peroxide and ozone at the Walnut Creek WTP.

The Project would thus require new deliveries of alum, polymer, microsand, hydrogen peroxide, and liquid oxygen as necessary to treat the range of water quality entering the Walnut Creek WTP. New water treatment plant chemicals at the Walnut Creek WTP would be stored inside of chemical storage buildings and distributed to plant facilities via chemical feed lines. The Walnut Creek WTP would also generate hazardous waste for off-site disposal or recycling. The waste would be stored in on-site storage lockers from the time of generation through legal offsite disposal. In addition to water treatment plant chemicals, the Project would include the storage of fuel at the Walnut Creek WTP electrical facilities building. Diesel for the emergency backup generators would be stored in tanks with secondary containment.

As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project to safely manage and dispose of hazardous materials. EBMUD Procedure 711, Hazardous Waste Removal, defines hazardous wastes and establishes responsibilities for the removal of hazardous wastes from the site. Procedure 711 requires specific actions for characterizing waste and determining what analyses are needed to classify the waste; ensuring correct labeling, storing, inspecting, and maintaining of inventory records for waste; and requiring review, signature, and tracking of any hazardous waste handling, disposal requirements, and hazardous waste manifests.

Because operation and maintenance activities at the Walnut Creek WTP would adhere to the required HMBP and comply with applicable state and federal requirements regulating the storage and routine handling and transport of hazardous materials, and because Procedure 711, Hazardous Waste Removal is incorporated into the Project, the operational activities would not expose the public or environment to hazardous materials, and impacts would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (**Appendix E**) lists the applicable standard specifications language.

There would be no new chemical usage related to operation and maintenance activities at the Lafayette WTP site, and no hazard-related operational impacts to the public or environmental would occur .

<u>Significance Determination Before Mitigation</u>

Less than significant.

Mitigation Measures

None required.

Impact HAZ-3: Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires. (Criterion 7)

Construction Phase 1 and Phase 2

Construction activities can exacerbate the risk of wildfire because construction equipment can generate fires from hot exhaust gases or from contact with the hot surfaces of the exhaust system. During Phase 1 and Phase 2 construction, the site operator and/or construction contractor would be required to comply with EBMUD safety specifications for performing work in a fire-safe manner, and supply and maintain on the site adequate fire-fighting equipment capable of extinguishing incipient fires. The site operator or construction contractor would also be required to comply with applicable state and local fire-prevention regulations.

As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including EBMUD Standard Construction Specification 01 35 24 Section 1.3(B), which dictates project safety requirements, EBMUD Standard Construction Specification 01 35 24 Section 1.3(E), which requires the contractor to submit an Emergency Action Plan; EBMUD Standard Construction Specification 01 35 24 Section 3.2(G), which requires that 100 feet of defensible space be maintained around work sites. Construction would require the use of diesel fuel that would be stored at the Walnut Creek WTP and Lafayette WTP sites during construction. The Project would adhere to the California Fire Code, Article 80, which includes specific requirements for the safe storage and handling of flammable and combustible liquids or hazardous materials.

Because the Project would be required to comply with numerous laws and regulations including the California Fire Code, Article 80, and because EBMUD Standard Construction Specification 01 35 24, Project Safety Requirements, has been incorporated into the Project and includes measures to maintain defensible space, Phase 1 and Phase 2 construction activities would not expose people or structures to a significant risk involving wildland fires, and impacts would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (**Appendix E**) lists the applicable standard specifications language. More information on wildfire hazards associated with the Project is included in *Section 3.15, Wildfire*.

Operation and Maintenance

While operation and maintenance of water treatment plant facilities does not entail high fire risk, both the Walnut Creek WTP and Lafayette WTP have an Emergency Action Plan and Fire Prevention Plan as required by Cal/OSHA. These plans require specific maintenance and inspection activities for fire prevention. Long-term site maintenance would continue, and would involve vegetation management on site, keeping the site clean and free of debris, and trimming shrubbery and trees for both fire prevention and public safety. Ongoing maintenance activities would continue to be conducted by staff already on site.

The ozone generation building would include adjacent liquid oxygen storage tanks on a concrete pad and surrounding concrete wall. The electrical facilities building at the Walnut Creek WTP would include on-site fuel storage for the emergency back-up generators. Diesel for the emergency backup generators would be stored in tanks with secondary containment. Both the ozone and diesel storage tanks would be operated, maintained, and tested in accordance with applicable regulations. The California Fire Code, Article 80, includes specific requirements for the safe storage and handling of flammable and combustible liquids or hazardous materials, which would be adhered to during operation and maintenance activities at the Walnut Creek WTP. The site-specific Emergency Action Plan and Fire Prevention Plan would be updated after the completion of the Project to address these issues. Fire risk at the Walnut Creek WTP site would be comparable to the existing operations.

The Project does not include operation and maintenance changes at the Lafayette WTP site that would affect fire risk, including the storage or handling of flammable or combustible materials.

Because the Project would be required to comply with numerous laws and regulations, including the California Fire Code, Article 80 has been incorporated into the Project and includes measures to maintain defensible space, operation and maintenance activities would not expose people or structures to a significant risk involving wildland fires, and impacts would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (**Appendix E**) lists the applicable standard specifications language. More information on wildfire hazards associated with the Project is included in *Section 3.15, Wildfire*.

Significance Determination Before Mitigation

Less than significant.

Mitigation Measures

None required.

Cumulative Impact Analysis

The geographic scope of the cumulative impacts related to hazards and hazardous materials is the Walnut Creek WTP and Lafayette WTP sites. Existing and remaining planned projects at the Walnut Creek WTP and Lafayette WTP sites may involve releases of or risks associated with hazardous materials and would be subject to compliance with the same or similar state and local regulations as applicable to the Project. Demolition of building materials that may contain lead-based paint or asbestos would be subject to the same regulatory standards for the safe removal and disposal. While it is possible that the Project and potential future projects could result in releases of hazardous materials at the same location, EBMUD would be required to remediate site conditions to the same established regulatory standards. The potential residual effects of the Project that would remain after compliance with regulatory requirements would not combine with the potential residual effects of potential future projects to cause a significant cumulative impact because residual impacts would be highly site-specific and would have been cleaned up to the same regulatory standard. Accordingly, no substantial cumulative impact with respect to the use of hazardous materials would result. For these reasons, the Project would have a less-than-significant contribution to a cumulative impact with respect to hazards and hazardous materials.

As described in *Section 3.15, Wildfire*, the Project combined with existing and remaining planned projects at the Walnut Creek WTP and Lafayette WTP sites would not be anticipated to increase fire risk in the area. As with the Project, new projects would be required to comply with applicable fire and building codes, which include fire prevention and safety features such as defensible space requirements, water supply and firefighting requirements, and other measures. Because the Project and potential future projects would be required to comply with applicable fire and building codes, the Project would not create a cumulative impact that would expose people or structures to a significant risk of loss, injury or death involving wildland fires.

As described above, the Project would have no impact with respect to being located on a site that is included on a list of hazardous materials sites, within one-quarter mile of a school, within 2 miles of a public or private airstrip, or physically interfere with an adopted emergency response plan or emergency evacuation plan. Accordingly, the Project could not contribute to cumulative impacts related to these topics.

3.8.4 References

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3.9 Hydrology and Water Quality

This section describes the physical, environmental, and regulatory setting for hydrology and water quality resources at the Project site and vicinity, identifies the significance criteria for determining environmental impacts, and evaluates the potential impacts on water resources that could result from implementation of the Project.

3.9.1 Environmental Setting

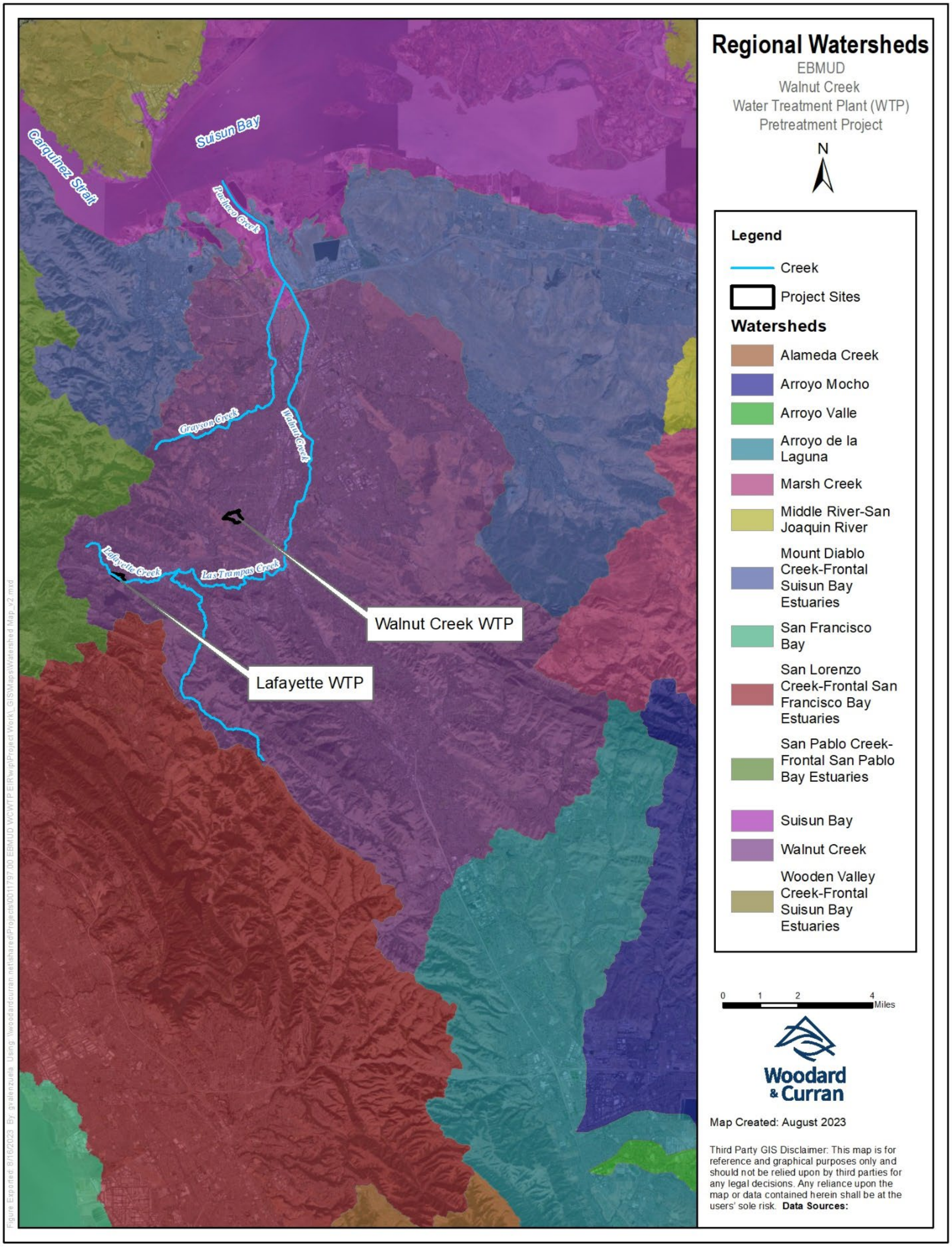
Regional and Local Hydrology

The Project is located within the cities of Walnut Creek and Lafayette in Contra Costa County, California. Both the Walnut Creek Water Treatment Plant (WTP) and Lafayette WTP sites are located within the Walnut Creek watershed (County of Contra Costa, 2003), shown in **Figure 3.9-1**. The Walnut Creek watershed covers approximately 93,556 acres in central Contra Costa County. The watershed's major tributaries include San Ramon Creek, Bollinger Creek, Las Trampas Creek, Lafayette Creek, Grayson Creek, Murderer's Creek, Pine Creek, and Galindo Creek (County of Contra Costa, 2003). The Walnut Creek watershed drains the west side of Mt. Diablo and east side of the East Bay Hills. Las Trampas and San Ramon Creeks, located in the southern portion of the watershed, flow northward, converging to become Walnut Creek east of the Highway 24 and Interstate 680 interchange, near Mt. Diablo Boulevard (EBMUD, 2006). Grayson and Murderer's Creeks converge with Walnut Creek north of Highway 4 (EBMUD, 2006). Walnut Creek drains north into Pacheco Creek and eventually into the Carquinez Strait and Suisun Bay (EBMUD, 2006). The region receives approximately 24 inches of rain annually.

Groundwater

Neither the Walnut Creek WTP nor the Lafayette WTP overlie groundwater basins (DWR, 2019). The closest groundwater basin is the Ygnacio Valley Groundwater Subbasin. The Ygnacio Valley Groundwater Subbasin is located approximately a half a mile to the north and east of the Walnut Creek WTP and approximately 5 miles to the east of the Lafayette WTP. The Ygnacio Valley Groundwater Subbasin is identified as a very low priority basin by the California Department of Water Resources (DWR) (DWR, 2019). There are no existing beneficial uses in the Ygnacio Valley Subbasin, but it has potential for municipal and domestic water supply, industrial process supply, industrial service supply, and agricultural service supply uses (SFRWQCB, 2019).

Figure 3.9-1: Regional Watershed Map



Site Drainage

The Walnut Creek WTP study area lies within the Grayson Creek Watershed, one of the five major sub-watersheds of the Walnut Creek Watershed (Contra Costa County Community Development Department, 2003). Putnam Creek, the most upstream tributary of Grayson Creek, crosses beneath the Walnut Creek WTP within a 36-inch diameter culvert that flows north and discharges downstream within a natural drainage swale between the existing EBMUD Larkey Pumping Plant and the future gravity thickeners (as shown in **Figure 3.3-3**). The Walnut Creek WTP includes a variety of roofed structures and substantial impervious paved surface areas. Stormwater drainage at the Walnut Creek WTP site is collected on site, diverted through catch basins and storm drains, and discharged to Putnam Creek, then to Grayson Creek downstream, and, ultimately, to Suisun Bay. The Walnut Creek WTP is not located within any mapped flood zones.

The Lafayette WTP also has a number of structures with substantial impervious surface areas. Lafayette Creek traverses the southern portion of the Lafayette WTP downstream of its confluence with Hidden Valley Creek. Based on Federal Emergency Management Agency (FEMA) maps, Hidden Valley Creek is located underground near the intersection of El Nido Ranch Road and Mt. Diablo Boulevard. An intermittent drainage also flows into Lafayette Creek east of this intersection in the western portion of the Lafayette WTP property. A series of on-site storm drains collect stormwater at the Lafayette WTP and discharges it to Lafayette Creek.

Flood Hazards

Flood hazards in the urban environment are heavily influenced by how cities are planned and constructed, as storm events contribute to rapid run-off over impervious paved surfaces and flood local waterways. As several areas within the City of Walnut Creek are at risk of flooding caused by storm events, the City of Walnut Creek General Plan indicates that the City of Walnut Creek will limit the amount of impervious surface and runoff in flood-prone areas (City of Walnut Creek, 2006). Precipitation in the City of Lafayette is drained by a series of creeks, and areas adjacent to those creeks are at risk of flooding during intense precipitation events (City of Lafayette, 2002). The Contra Costa County Flood Control and Water Conservation District covers all of Contra Costa County and works to reduce the risk of floods, which includes maintaining effective flood drainage systems and regulating construction (City of Lafayette, 2002).

FEMA has developed a Risk Mapping, Assessment, and Planning (Risk MAP) program to identify flood hazards areas, assess flood risks, provide accurate data to support the National Flood Insurance Program, guide floodplain management, and inform planning decisions (FEMA, 2016). The Walnut Creek WTP is not located in a flood-prone area as identified by FEMA's Risk MAP program (FEMA, 2009). Putnam Creek, the seasonal tributary of Grayson Creek that flows along the northwestern end of the Walnut Creek WTP, and beneath the site in a 36-inch diameter culvert, does not have a defined 100-year flood zone. There is no history of flooding at the Walnut Creek WTP, and future flooding of the Walnut Creek WTP is unlikely.

The Lafayette WTP is located adjacent to multiple identified flood zone areas (FEMA, 2017). Although Lafayette Creek crosses the southern portion of the Lafayette WTP site, the flood plain at this location is contained within the stream channel. The 100-year flood elevation in the flood zone adjacent areas to the Lafayette WTP is approximately 368 feet at the west end of the Lafayette WTP site and approximately 350 feet at the east end of the Lafayette WTP site

(EBMUD, 2006). Existing Lafayette WTP facilities are at a minimum elevation of approximately 370 feet; which is higher than the maximum 100-year flood level at the Lafayette WTP site. There is no history of flooding at the Lafayette WTP, and future flooding of the Lafayette WTP is unlikely.

Dam Failure

A dam failure is an uncontrolled release of water from a reservoir through a dam or outlet works as a result of structural failures or deficiencies in the dam. The closest large dam and reservoir under jurisdiction of the California Division of Safety of Dams (DSOD) is the Lafayette Reservoir which is immediately south of the Lafayette WTP and approximately 3.5 miles southwest of the Walnut Creek WTP. Based on the hypothetical dam breach modeling and flood map developed by EBMUD for submittal to the DSOD (EBMUD, 2019), the Lafayette WTP would be inundated by a failure of the Lafayette Dam and Reservoir, but the Walnut Creek WTP site would not be inundated as the expected flood wave would be located to the east of Interstate 680. All dams and reservoirs under jurisdiction of the DSOD are required to have dam breach and flooding maps on file for planning purposes only. The maps do not indicate that the dam is at risk of failure.

Tsunami and Seiche

A tsunami is a series of large ocean waves generated either by large submarine earthquakes generating significant upward movement of the seafloor, or landslides within or falling into the ocean. Tsunamis affecting the San Francisco Bay region would originate west of San Francisco Bay in the Pacific Ocean. Historically, the San Francisco Bay Area has been affected by tsunamis generated by earthquakes originating as far north as Alaska, and as far south as central Chile (ABAG, 2022). The Walnut Creek WTP and Lafayette WTP are approximately 10 miles from the San Francisco Bay and not in a tsunami inundation area, as mapped by the California Department of Conservation (CDC, 2022).

Seiches are waves developed in fully enclosed bodies of water resulting from either wind or seismic activity causing a standing wave to bounce back and forth across the water. Neither the Walnut Creek WTP nor the Lafayette WTP are located immediately adjacent to a body of water and are thus not susceptible to danger from seiches.

3.9.2 Regulatory Framework

Federal Regulations

Clean Water Act

Under the Clean Water Act (CWA) of 1977, the United States Environmental Protection Agency (U.S. EPA) seeks to restore and maintain the chemical, physical, and biological integrity of the nation's waters by implementing water quality regulations. Multiple sections of the CWA apply to activities near or within surface or groundwater.

Section 402(p) of the CWA regulates discharges to surface waters through the National Pollutant Discharge Elimination System (NPDES) program, a nationwide surface water discharge permit program for municipal and industrial point sources. In California, NPDES permitting authority is delegated to and administered by the nine Regional Water Quality Control Boards (RWQCBs). Under Section 402, the San Francisco Bay RWQCB has set standard conditions for each permittee in the San Francisco Bay Area, including effluent limitation and monitoring programs. In addition to their responsibility to issue and enforce compliance with NPDES permits, the RWQCBs are responsible for the preparation and revision of the relevant regional Water Quality Control Plan, also known as the Basin Plan (described further under *State Regulations*).

Section 303(d) of the CWA requires that each state identify water bodies or segments of water bodies that are "impaired" (i.e., do not meet one or more of the water quality standards established by the state, even after point sources of pollution have been equipped with the minimum required levels of pollution control technology). The U.S. EPA must approve the 303(d) List of Impaired Water Bodies before it is considered final. Inclusion of a water body on the Section 303(d) List of Impaired Water Bodies triggers development of a Total Maximum Daily Load (TMDL) for that water body and a plan to control the associated pollutant/stressor on the list. The TMDL is the maximum amount of a pollutant/stressor that a water body can assimilate and still meet the water quality standards. Typically, a TMDL is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources. The Basin Plan is amended to legally establish the TMDL and to specify regulatory compliance, including specification of waste load allocations for entities that have permitted discharges. **Table 3.9-1** lists the beneficial uses and impairment status of Section 303(d) listed impaired water bodies in the Project area, including the pollutants that cause the impairments.

Once a water body is placed on the 303(d) List of Impaired Water Bodies, it remains on the list until a TMDL is adopted and the water quality standards are attained, or sufficient data demonstrate that water quality standards have been met and delisting should take place.

Table 3.9-1: Beneficial Uses and Impairment Status of 303(d)-Listed Water Bodies

Water Body	Beneficial Use(s)[1]	Impairment Status	Pollutants
Grayson Creek	COLD, MIGR, RARE, REC1, REC2, WARM, WILD	Being addressed with U.S. EPA approved TMDL	Trash
Lafayette Reservoir	COLD, COMM, MUN, REC1, REC2, SPWN, WARM, WILD	TMDL required list	PCBs, Mercury

[1] Beneficial Use Codes: AGR: agricultural water supply; COLD: cold freshwater habitat; COMM: ocean commercial and sport fishing; EST: estuarine habitat; IND: industrial process water supply; MIGR: fish migration; MUN: municipal and domestic water supply; NAV: navigation; RARE: preservation of rare and endangered species; REC1: contact water recreation; REC2: non-contact water recreation; SHELL: shellfish harvesting; SPWN: fish spawning; WARM: warm freshwater habitat; WILD: wildlife habitat.
Source: SFBRWQCB, 2018

National Pollutant Discharge and Elimination System (NPDES) Program

The NPDES permit program is administered in California by the State Water Resources Control Board (SWRCB) and RWQCBs under the authority of the U.S. EPA to control water pollution by regulating point sources that discharge pollutants into Waters of the U.S. If discharges from industrial, municipal, and other facilities go directly to surface waters, those project applicants must obtain permits. An individual NPDES permit is tailored to a specific discharge to Waters of the U.S. A general NPDES permit covers multiple facilities within a specific activity category, such as construction activities and applies with the same or similar conditions to all dischargers covered under the general NPDES permit. The Project would be covered under the general permits implemented by the state, as described further below.

Federal Antidegradation Policy

The Federal Antidegradation Policy, established in 1968 under Section 303 of the CWA, is designed to protect existing uses, water quality, and national water resources. Implementation of antidegradation by the states is based on a set of procedures to be followed when evaluating activities that may impact the quality of the Waters of the U.S. Antidegradation implementation is an integral component of a comprehensive approach to protecting and enhancing water quality of both surface water and groundwater.

National Flood Insurance Program

FEMA determines flood elevations and floodplain boundaries based on U.S. Army Corps of Engineers studies. FEMA also distributes the Flood Insurance Rate Maps (FIRM) used in the National Flood Insurance Program. FIRMs identify the locations of special flood hazard areas, including 100-year floodplains. The Walnut Creek WTP is not in an area subject to flood. The Lafayette Creek crosses the southern portions of Lafayette WTP, but the flood plain is contained within the stream channel (City of Lafayette, 2002).

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

State Regulations

Porter-Cologne Water Quality Control Act

The state of California's Porter-Cologne Water Quality Control Act (Porter-Cologne Act) provides the basis for water quality regulation within California and assigns primary responsibility for the protection and enhancement of water quality to the SWRCB and the nine RWQCBs. Under the Porter-Cologne Act, the SWRCB and RWQCBs also have the responsibility of granting CWA NPDES permits and Waste Discharge Requirements (WDRs) for certain point-source and nonpoint discharges to waters. The Porter-Cologne Act allows the California SWRCB to adopt statewide Water Quality Control Plans and Basin Plans, which serve as the legal, technical, and programmatic basis of water quality regulation statewide or for a particular region. The Water Quality Control Plans limit impacts on water quality from a variety of sources. The Basin Plan for the San Francisco Bay and the relevant permits are described below.

San Francisco Bay Water Quality Control Plan (Basin Plan)

San Francisco Bay waters are under the jurisdiction of the San Francisco Bay RWQCB, which established regulatory standards and objectives for water quality in the San Francisco Bay in the Water Quality Control Plan for the San Francisco Bay Basin, commonly referred to as the Basin Plan (SFBRWQCB, 2017). The Basin Plan identifies existing and potential beneficial uses for surface and groundwaters and provides numerical and narrative water quality objectives designed to protect those uses. The preparation and adoption of Water Quality Control Plans are required by the California Water Code (Section 13240) and supported by the federal CWA. Because beneficial uses, together with their corresponding water quality objectives, can be defined pursuant to federal regulations as water quality standards, the Basin Plan is a regulatory reference for meeting the state and federal requirements for water quality control. Adoption or revision of surface water standards is subject to the approval of the U.S. EPA. Once a water body is placed on the 303(d) List of Impaired Water Bodies, it remains on the list until a TMDL is adopted and the water quality standards are attained, or sufficient data demonstrate that water quality standards have been met and delisting should take place.

Potable Supply General Permit

The RWQCB issued EBMUD a Statewide General NPDES Permit for Drinking Water System Discharges (Order WQ 2014-0194-DWQ, General Order No. CAG140001) of water into Grayson Creek under special circumstances (Putnam Creek, which crosses the Walnut Creek WTP site, is the most upstream tributary to Grayson Creek). The water is temporarily discharged on a planned and unplanned basis into the natural drainage swale leading to Putnam Creek between the existing EBMUD Larkey Pumping Plant and the future gravity thickeners. The permit specifies water discharge prohibitions, effluent limitations, receiving water limitations, and a self-monitoring program for the Walnut Creek WTP. The permit concludes that the restrictions assure that only a high-quality water could be discharged to Grayson Creek, and therefore the permit provides a high level of environmental protection to Grayson Creek, consistent with the goals of the Basin Plan.

Dewatering General Permit

The SWRCB has issued General WDRs under Order No. R8-2003-0061, NPDES No. CAG 998001 (Dewatering General Permit) governing non-stormwater construction-related discharges from activities such as dewatering, water line testing, and sprinkler system testing. The discharge requirements include provisions mandating notification, testing, and reporting of dewatering and testing-related discharges. The General WDRs authorize such construction-related discharges so long as all conditions of the permit are fulfilled. The Dewatering General Permit would apply to the Project for the testing of pipelines and in the event that groundwater is encountered during construction that requires dewatering.

Construction General Permit

The Construction General Permit *NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities* (Order 2009-0009-DWQ, NPDES No. CAS000002, Construction General Permit) regulates discharges of pollutants in stormwater associated with construction activity to Waters of the U.S. 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 Construction General Permit regulates stormwater discharges associated with construction or demolition activities, such as clearing and excavation; construction of buildings; and linear underground projects, including the installation of water pipelines and other utility lines.

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 pollutants from contacting stormwater and keep all products of erosion from moving off site into receiving waters. The SWPPP BMPs are intended to protect surface water quality by preventing the off-site migration of eroded soil and construction-related pollutants from the construction area. Routine inspection of all BMPs is required under the provisions of the Construction General Permit. In addition, the SWPPP is required to 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. EBMUD's General Construction Specifications include specific provisions for the development of a SWPPP, described further below under *Local Regulations.*

Local Regulations

Walnut Creek General Plan

The City of Walnut Creek General Plan is a long-range plan used as a blueprint for conservation and development and provides a framework to guide the City's growth and protection of resources. The City of Walnut Creek General Plan, which was adopted in 2006 has a timeframe that extends to the year 2025. Applicable goals and objectives from the General Plan are listed below.

Goal 2. Reduce the potential for flooding in flood-prone areas.

> **Policy 2.1**. Reduce the risk of property damage and personal injury due to flooding.

Goal 7. Work with the districts to ensure safe and adequate water supplies for the Planning Area.

> **Policy 7.1.** Work with water agencies to secure water supplies to serve the Planning Area's growing number of residents and employees.

Goal 32. Meet or exceed State and federal water-quality standards.

> **Policy 32.1.** Support regional, State, and federal clean water efforts.
>
> **Policy 32.2.** In redevelopment projects in the Core Area evaluate the desirability of specific, off-site, source-control measures.
>
> **Policy 32.3.** Maximize infiltration of rainwater into the soil, where appropriate.
>
> **Policy 32.4.** Reduce the transport of urban runoff and surface pollutants offsite.
>
> **Policy 32.5.** Encourage preservation of natural water bodies and drainage systems.
>
> **Policy 32.6.** Reduce pollutant loading in the wastewater system.

Lafayette General Plan

The City of Lafayette General Plan is a long-range policy document intended to guide physical, economic, and environmental growth in the City of Lafayette. The City of Lafayette General Plan, which was adopted in 2002 and most recently amended in 2020, has a timeframe that extends to the year 2040. Applicable goals and objectives from the general plan are listed below.

Goal OS-3. Reduce flood hazards.

> **Policy OS-3.1.** Reduce flood risk by maintaining effective flood drainage systems and regulating construction.
>
> **Policy OS-3.2.** In the review of flood control for proposed new development, establish as a standard the flood recurrence intervals used by the Contra Costa County Flood Control District.
>
> **Policy OS-3.3.** Maintain unobstructed water flow in the storm drainage system.
>
> **Policy OS-3.5.** Consider potential flood hazards when siting a building. Intensity of development shall be the lowest in areas of high risk.

Goal OS-5. Preserve and protect creeks, streams, and other watercourses in their natural state.

Policy OS-5.1. Protect stream bank stability.

Goal OS-6. Improve water quality in watercourses.

Policy OS-6.1. Minimize pollutants in storm water runoff.

EBMUD Hazardous Materials Building Plan

In accordance with the community right-to-know laws, because EBMUD is a business that handles specified quantities of chemicals at the Walnut Creek WTP and Lafayette WTP, EBMUD has prepared and submitted a Hazardous Materials Business Plan (HMBP) for both the Walnut Creek WTP and Lafayette WTPs. HMBPs allow local agencies to plan appropriately for chemical release, fire, or other incident. The HMBP includes the following:

- An inventory of hazardous materials with specific quantity data, storage or containment descriptions, ingredients of mixtures, and physical and health hazard information.
- Site and facility layouts that must be coded for chemical storage areas and others facility safety information.
- Emergency response procedures for a release or threatened release of hazardous materials.
- Procedures for immediate notification of releases to the administering agency.
- Evacuation plans and procedures for the facility.
- Descriptions of employee training in evacuation and safety procedures in the event of a release or threatened release of hazardous materials consistent with employee responsibilities, and proof of implementing such training on an annual basis.
- Identification of local emergency medical assistance appropriate for potential hazardous materials incidents.

Under the Certified Unified Program Agencies (CUPA) regulations, the Contra Costa County Health Services Department is responsible for implementing the Hazardous Materials Building Plan requirements for the Walnut Creek and Lafayette WTPs.

EBMUD Procedure 711 Hazardous Waste Removal

EBMUD Procedure 711, Hazardous Waste Removal, defines hazardous waste and establishes responsibilities for removal of hazardous wastes from EBMUD facilities (EBMUD, 2020a). Procedure 711 outlines specific steps and responsibilities for: characterizing the waste and determining what analyses are needed to classify the waste; coordinating waste disposal, reuse or recycling issues; labeling, storing, inspecting, and maintaining inventory records for the waste; and reviewing, signing, and tracking any hazardous waste handling and disposal requirements and hazardous waste manifests.

EBMUD Standard Construction Specifications

EBMUD's Standard Construction Specifications and Procedures apply to all contractors completing work for EBMUD, and to work completed by EBMUD staff. The following EBMUD practices and procedures are applicable to hydrology and water resources:

- **EBMUD Standard Construction Specification 01 35 44, Environmental Requirements**

  EBMUD Standard Construction Specification 01 35 44 requires that activities on the construction site are controlled to prevent discharge of contaminated stormwater, sets forth the contract requirements for environmental compliance to which construction crews must adhere, including provisions for protection of water quality during construction (EBMUD, 2023).

  The General Requirements of EBMUD Standard Construction Specification 01 35 44 stipulate that the construction crew shall be responsible for maintaining compliance with applicable federal, state, and local requirements. The requirements include preparation of plans that outline procedures to be followed to ensure effective stormwater/non-stormwater management and documentation of compliance. EBMUD reviews submittals for conformance with the requirements of the contract document and specified laws and regulations. Specific planning documents and procedures related to protection of water quality that are required by EBMUD for construction are described below.

  - **Controls on Site Activities.** EBMUD Standard Construction Specification 01 35 44 Section 1.1(B), Site Activities, requires that activities on the construction site are controlled to prevent discharge of contaminated stormwater. Applicable requirements include:
    - Protect storm drains and surface waters from impacts of project activity.
    - Store materials and wastes such as demolition material, soil, sand, asphalt, rubbish, paint, cement, concrete or washings thereof, oil or petroleum products, or earthen materials in a manner to prevent it from being washed by rainfall or runoff outside the construction limits.
    - Reuse or dispose of excess material consistent with all applicable legal requirements and disposal facility permits.
    - Clean up all spills and immediately notify the Engineer in the event of a spill.
    - Equip stationary equipment such as motors, pumps, and generators with drip pans.
    - Divert or otherwise control surface water and waters flowing from existing projects, structures, or surrounding areas from coming onto the work and staging areas. The method of diversions or control shall be adequate to ensure the safety of stored materials and of personnel using these areas.
    - Following completion of Work, remove ditches, dikes, or other ground alterations made by the Contractor. The ground surfaces shall be returned to their former condition, or as near as practicable, in the Engineer's opinion.
    - Prevent visible dust emissions from leaving the work areas.
    - Maintain construction equipment in good operating condition to reduce emissions.
    - Handle, store, apply, and dispose of any chemical or hazardous material used in the performance of the Work in a manner consistent with all applicable federal, state, and local laws and regulations.

- **Storm Water Management.** EBMUD Standard Construction Specification 01 35 44 Section 1.4(A),requires submittal of a Stormwater Pollution Prevention Plan (SWPPP) that describes measures that shall be implemented to prevent the discharge of contaminated storm water runoff from the jobsite. Contaminants to be addressed include, but are not limited to, soil, sediment, concrete residue, pH less than 6.5 or greater than 8.5, and chlorine residual and all other contaminants known to exist at the jobsite location as described in Document 00 31 24 – Materials Assessment Information. In addition to the State's General Construction Stormwater Permit, the Contractor shall obtain and comply with regulatory requirements of local storm water permits, such as Contra Costa County's County Watershed Program to enable the inspection of C.6 construction stormwater BMPs.

- **Water Control and Disposal Plan.** EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, Section 1.4(B) requires that the Contractor shall submit a detailed Water Control and Disposal Plan, which shall comply with all requirements of the Specification and applicable discharge permits.
  - Non-Stormwater Discharges: Plan shall describe measures for containment, handling, treatment (as necessary), and disposal of discharges such as groundwater (if encountered), runoff of water used for dust control, stockpile leachate, tank heel water, wash water, sawcut slurry, test water and construction water.
  - Sanitary Sewer Discharges: Plan shall describe required applications and/or permits from the sanitary sewer system owner or agency having jurisdiction regarding the planned discharge. Plan shall outline monitoring and reporting expected to support sanitary sewer discharge, including a sampling and analysis plan. All monitoring results shall be submitted to the Engineer prior to the end of the Work.
- **Spill Prevention and Response Plan.** EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, Section 1.4(E) requires the Contractor to submit a plan detailing the means and methods for preventing and controlling the spilling of known hazardous substances used on the jobsite or staging areas. The plan shall include a list of the hazardous substances proposed for use or generated by the Contractor on site, including petroleum products, and measures that will be taken to prevent spills, monitor hazardous substances, and provide immediate response to spills. Spill response measures shall address notification of the Engineer and appropriate agencies including phone numbers; spill-related worker, public health, and safety issues; spill control, and spill cleanup.

- **EBMUD's Standard Construction Specification 01 74 05, Cleaning, Section 3.1(B)**

  EBMUD Standard Construction Specification 01 74 05 requires that Contractors conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws. Rubbish and waste materials cannot be burned on the project site. Volatile wastes such as mineral spirits, oil, or paint thinner cannot be disposed of in storm or sanitary drains. No wastes can be disposed into streams or waterways.

3.9.3 Impact Analysis

Methodology for Analysis

Impacts to hydrology and water quality are assessed based on the Project's level of physical impacts on hydrology and water quality in the Project's vicinity.

Information for the assessment of impacts on hydrology and water quality is based on available data from site-specific plans, water quality protection measures required by the SWRCB and San Francisco Bay RWQCB (SFBRWQCB), and additional guidance provided in local plans and regulations related to hydrology and water quality.

Significance Criteria

Consistent with Appendix G of the *CEQA Guidelines* an impact on hydrology and water quality would be considered significant if the Project would:

1. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.
2. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin.
3. 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:
    a. Result in substantial erosion or siltation on- or off-site;
    b. Substantially increase the rate or amount of surface runoff in a manner which would result in a flooding on- or off-site;
    c. 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
    d. Impede or redirect flood flows.
4. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to Project inundation.
5. Conflict with obstruct implementation of a water quality control plan or sustainable groundwater management.

Criteria Requiring No Further Evaluation

Criteria listed above that are not applicable to actions associated with the Project are identified below, along with a supporting rationale as to why further consideration is unnecessary and a no-impact determination is appropriate.

- ***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 (Criterion 3d).*** Putnam Creek, the seasonal tributary of Grayson Creek that flows along the northwestern end of the Walnut Creek WTP, and beneath the site in a 36-inch diameter culvert, does not have a defined 100-year flood zone, and improvements at the Walnut Creek WTP would not impede or cause flows to be redirected. Although Lafayette Creek crosses the southern portion of the Lafayette WTP site, the floodplain at this location is contained within the stream channel (City of Lafayette General Plan Maps, 2002) and the proposed work at the Lafayette WTP would not impede or redirect flood flows. Thus, the Project would not impede or redirect flood flows and would have no impact on areas that are currently subject to flood risk.

- ***In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation (Criterion 3d)***. The Walnut Creek WTP is not in an area subject to flood hazard, tsunami, or seiche. The Lafayette WTP is located adjacent to the zone of possible inundation due to dam failure at the Lafayette Reservoir. However, improvements at the Lafayette WTP would not increase the risk of pollutant release due to inundation from Lafayette Reservoir. The Project would not have the potential to release pollutants due to inundation and there would be no impact.

Impacts and Mitigation Measures

Impact HYD-1: Violate water quality standards or waste discharge requirements, or otherwise substantially degrade water quality. (Criterion 1)

Walnut Creek WTP and Lafayette WTP, Construction Phase 1 and Phase 2

Project construction activities would require grading, excavation, and other soil disturbing activities at the Walnut Creek WTP site during both Phases 1 and 2. Phase 1 construction would require excavation of approximately 44,000 cubic yards (CY) of material and Phase 2 construction would require excavation of approximately 27,000 CY of material. Excavation, temporary soil stockpiles, and other soil disturbing activities, could result in soil erosion and the migration of soil and sediment in stormwater runoff to downstream surface waters and storm drains. If not properly managed, stockpiled spoil could migrate off site during precipitation events and increase sedimentation in downstream receiving water bodies. Fuels, lubricants, and other hazardous materials associated with construction equipment could adversely affect water quality if spilled or stored improperly. Because construction activities at the Walnut Creek WTP would disturb an area greater than 1 acre, coverage under the Construction General Permit and development of a SWPPP would be required. A SWPPP containing erosion and sediment control BMPs would be prepared and implemented in accordance with the Construction General Permit.

Project construction activities at the Lafayette WTP would also require grading, excavation, and other soil disturbing activities, which could result in soil erosion and the migration of soil and sediment in stormwater runoff to downstream surface waters and storm drains. Fuels, lubricants, and other hazardous materials associated with construction equipment could adversely affect water quality if spilled or stored improperly. Although construction activities at the Lafayette WTP are not anticipated to disturb an area greater than 1 acre, a SWPPP containing erosion and sediment control BMPs would be prepared and implemented in accordance with the Construction General Permit.

As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project. These include EBMUD Standard Construction Specification 01 34 44, Environmental Requirements, Section

1.1 (B), Site Activities, Section 1.4(A), Storm Water Management, Section 1.4(B), Water Control and Disposal Plan, and Section 1.4(E), Spill and Prevention Response Plan, and EBMUD Standard Construction Specification 01 74 05, Cleaning, Section 3.1(B).

Implementation of EBMUD Standard Construction Specification 01 35 44 Environmental Requirements Section 1.1(B), Site Activities, requires that activities on construction sites be controlled to prevent discharge of contaminated stormwater. The contractor would be required to manage materials on the site (including demolition material and stockpiles) such that it cannot be washed off site by stormwater. Construction areas would be required to be graded or have BMPs (e.g., erosion control, sediment control, waste management, and good housekeeping measures) installed to contain surface runoff, which would minimize the potential for contaminated stormwater to be transported offsite.

Implementation of EBMUD Standard Construction Specification 01 35 44 Section 1.4 (A), Storm Water Management, requires that a SWPPP be developed and BMPs implemented in accordance with the Construction General Permit to control sediment and other potential contaminants in stormwater discharges from the Project site. The SWPPP must be reviewed and approved by EBMUD before the start of construction and requires the contractor to control discharge of soil, sediment, and concrete residue and control pH and chlorine residual of any discharges.

Implementation of EBMUD Standard Construction Specification 01 35 44 Section 1.4(B), Water Control and Disposal Plan, requires that the contractor provide a detailed Water Control and Disposal Plan and maintain proper control of the discharge at the discharge point to prevent erosion, scouring of bank, nuisance, contamination, and excess sedimentation into receiving waters.

Implementation of EBMUD Standard Construction Specification 01 34 44, Section 1.4(E), Spill Prevention and Response Plan, requires the contractor to submit a plan for preventing and controlling the spilling of known hazardous substances used on the jobsite or staging area to protect downstream environmental resources from any accidental spills of diesel fuel during mobile fueling of on-site equipment as well as any leaks or spills from construction equipment.

Implementation of EBMUD Standard Construction Specification 01 74 05, Cleaning, Section 3.1(B) requires that contractors properly dispose of wastes in accordance with local ordinances and anti-pollution laws and prohibits wastes from being disposed into streams or waterways. Compliance with this specification would minimize potential for improper and illegal disposal practices during any Project stage for the protection of downstream environmental resources.

Because the Project would comply with the requirements of the Construction General Permit, and because EBMUD Standard Construction Specifications 01 34 44, Environmental Requirements, Section 1.1(B), Section 1.4(A), Section 1.4(B), Section 1.4(E), and EBMUD Standard Construction Specification 01 74 05, Cleaning, Section 3.1(B) have been incorporated into the Project and would require stormwater controls (including spill prevention plans and appropriate BMPs) and ensure site cleanliness by containing surface runoff so that contaminants such as oil, grease, and fuel products do not drain towards receiving waters, Project construction activities would not violate water quality standards or waste discharge requirements, or otherwise substantially degrade water quality, and impacts would be less than significant.

Operation and Maintenance

New facilities at the Walnut Creek WTP, including new paved roads and parking spots, would increase impervious surface area by approximately 5.5 acres, which has the potential to result in additional discharge of stormwater to surface waters. Improvements at the Walnut Creek WTP would include installation of bioretention basins to capture and treat stormwater in accordance with applicable local and state water quality control plans and regulations. Treatment and flow controls would be put in place to ensure that runoff from the new facilities does not degrade or erode receiving waters once runoff leaves the site. Stormwater generated from facilities constructed under Phase 1 would be directed to new and existing stormwater drains and three new bioretention basins that would be constructed north of the gravity thickeners and in the northwest and southeast corners of the Walnut Creek WTP site.

Improvements at the Lafayette WTP could increase impervious surface area because the replacement weir would be constructed in a currently undeveloped area, so additional runoff could be produced, but the additional runoff would be balanced by the removal of the existing weir, which would reduce impervious surface. The additional impervious surface area is expected to be limited in its extent, would not substantially increase total impervious surface area at the Lafayette WTP, and is not anticipated to significantly increase the volume of runoff produced at the Lafayette WTP site.

Operation and maintenance activities associated with the Project are not anticipated to increase the risk of violation of water quality standards or waste discharge requirements, or otherwise substantially degrade water quality. Long-term site maintenance would continue and would involve keeping the site clean and free of debris. Ongoing maintenance activities would continue to be conducted by staff already on site.

Following construction, potential for substantial runoff or erosion at the Walnut Creek WTP site would be minimized as erosion control/site stabilization measures would reduce the risk of flooding. Exposed soils at the Walnut Creek WTP would be hydroseeded with EBMUD's standard hydroseed mix upon the completion of construction to prevent erosion of topsoil. In addition, because the Project would include the construction of new bioretention basins at the Walnut Creek WTP site, enhanced drainage would help to further prevent erosion and runoff, and the impact to hydrology and water quality would be less than significant.

Following construction, potential for substantial runoff or soil erosion at the Lafayette WTP site would be minimized as revegetation for erosion control/site stabilization would be established. Exposed soils at the Lafayette WTP would be hydroseeded with EBMUD's standard hydroseed mix upon the completion of construction to prevent erosion of topsoil, therefore the impact to hydrology and water quality would be less than significant.

Ongoing operation and maintenance at the Walnut Creek WTP and Lafayette WTP require the use, transport, and storage of hazardous materials, which if improperly stored or handled, could result in contamination of runoff and impact downstream water quality. As required by law, EBMUD maintains a HMBP for both the Walnut Creek WTP and Lafayette WTP, which include a hazardous materials inventory that lists chemicals stored and used at each site (EBMUD, 2006). Operation and maintenance activities associated with the Project would adhere to the required HMBP and comply with applicable state and federal requirements regulating the storage and routine handling and transport of hazardous materials. Because operation and maintenance activities associated with the Project would adhere to the required HMBP, which includes specific requirements for the use, transport, and storage of hazardous materials, the risk of operation and maintenance activities exposing environment to hazardous materials is low, and the impact is considered less than significant.

The Project would require new deliveries of alum, polymer, microsand, hydrogen peroxide, and liquid oxygen as necessary to treat the range of water quality entering the Walnut Creek WTP. New water treatment plant chemicals at the Walnut Creek WTP would be stored inside of chemical storage buildings and distributed to water treatment plant facilities via chemical feed lines. In addition to water treatment plant chemicals, the Project would include the storage of fuel at the Walnut Creek WTP electrical facilities building. Diesel for the emergency backup generators would be stored in tanks with secondary containment.

As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project to safely manage and dispose of hazardous materials. EBMUD Procedure 711, Hazardous Waste Removal, defines hazardous wastes and establishes responsibilities for the removal of hazardous wastes from the site. Procedure 711 requires specific actions for characterizing waste and determining what analyses are needed to classify the waste; ensuring correct labeling, storing, inspecting, and maintaining of inventory records for waste; and requiring review, signature, and tracking of any hazardous waste handling, disposal requirements, and hazardous waste manifests.

There would be no new chemical usage related to operation and maintenance activities at the Lafayette WTP site, and no water quality-related to the use or handling of hazardous materials would occur.

Erosion control/site stabilization measures at both sites would be in place, and the new bioretention basins at the Walnut Creek WTP would enhance drainage and reduce runoff. Operation and maintenance activities also would adhere to the required HMBP and comply with applicable state and federal requirements regulating the storage and routine handling and transport of hazardous materials. Additionally, Procedure 711, Hazardous Waste Removal is incorporated into the Project, operation and maintenance activities would not contribute to degradation of water quality. Therefore, the risk of operation and maintenance activities triggering a violation of water quality standards or waste discharge requirements, or otherwise substantially degrading water quality, is low, and the impact is less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (**Appendix E**) lists the applicable standard specifications language.

Significance Determination Before Mitigation

Less than significant.

Mitigation Measures

None required.

Impact HYD-2: Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin. (Criterion 2)

Walnut Creek WTP and Lafayette WTP, Construction Phase 1 and Phase 2

Neither the Walnut Creek WTP nor the Lafayette WTP overlies the Ygnacio Valley Subbasin, nor any other defined groundwater subbasin. Construction at the Walnut Creek WTP and Lafayette WTP sites would not require groundwater supplies or involve the construction of groundwater wells; therefore, Project construction would have no impact on groundwater supplies, groundwater recharge, or sustainable groundwater management.

Operation and Maintenance

The Project would result in additional impervious surface area, which could impact the amount of surface areas available for groundwater recharge. New facilities at the Walnut Creek WTP would increase impervious surface area by approximately 5.5 acres, which could interfere with groundwater recharge by reducing the amount of runoff that can percolate to a groundwater aquifer. Improvements at the Walnut Creek WTP site would include bioretention basins that would treat and control stormwater runoff and encourage recharge of groundwater. The three new bioretention areas would include vegetation with plantings that would allow infiltration of stormwater.

Improvements at the Lafayette WTP could also increase impervious surface area because the replacement weir would be constructed in a currently undeveloped area, so additional runoff could be produced, though some impervious surface would be removed by demolition of the existing weir. However, the additional impervious surface area is expected to be limited in its extent, would not substantially increase total impervious surface area at the Lafayette WTP, and is not anticipated to significantly reduce the volume of runoff available for groundwater recharge at the Lafayette WTP site.

Operation and maintenance activities associated with the Project are not anticipated to substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of basin. Neither the Walnut Creek WTP nor the Lafayette WTP overlies any defined groundwater subbasin and Project operation and maintenance activities would not involve groundwater supplies or involve the use of groundwater wells. Additionally, new stormwater facilities at the Walnut Creek WTP, including the new bioretention basins, could increase infiltration of runoff.

Because the Project does not require groundwater supplies or overlie a defined groundwater subbasin, and because new stormwater facilities at the Walnut Creek WTP would increase infiltration of runoff such that the total volume of water available for recharge that is generated at both the Walnut Creek WTP and the Lafayette WTP sites is not anticipated to substantially decrease, the Project operation and maintenance would not substantially decrease groundwater supplies or interfere with groundwater recharge such that the Project may impede sustainable groundwater management. Therefore, the impact is less than significant.

Significance Determination Before Mitigation

Less than significant.

Mitigation Measures

None required.

Impact HYD-3a: 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 result in substantial erosion or siltation on or off-site (Criterion 3a)

Walnut Creek WTP and Lafayette WTP, Construction Phase 1 and Phase 2

Construction of the Project would involve alterations to the drainage patterns of the existing Walnut Creek WTP site, as the site would be reconfigured to accommodate new structures and paving. Approximately 44,000 CY of material would be excavated in Phase 1, and Phase 2 construction would require excavation of approximately 27,000 CY of material, which in the absence of appropriate design measures and practices, could result in substantial erosion and siltation on and off site.

Because construction activities at the Walnut Creek WTP would disturb an area greater than one acre, coverage under the Construction General Permit and development of a SWPPP would be required. A SWPPP containing erosion and sediment control BMPs would be prepared and implemented in accordance with the Construction General Permit. The Project would include both treatment and flow controls for stormwater runoff (stormwater would be directed to the new bioretention basins, which would be filled with a layer of permeable gravel and a layer of native topsoil material, excavated on site), which would ensure that runoff from the new facilities does not degrade or erode receiving water once runoff leaves the site.

Site stabilization and erosion control measures implemented during construction would reduce the potential for short- or long-term structural damage to fills, foundations, and other engineered structures. Exposed soils at the Walnut Creek WTP and Lafayette WTP would be hydroseeded with EBMUD's standard hydroseed mix upon the completion of construction to prevent erosion of topsoil.

As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project. These include EBMUD Standard Construction Specification 01 34 44, Environmental Requirements, Section 1.1(B), Site Activities, Section 1.4(A), Storm Water Management, and Section 1.4(B), Water Control and Disposal Plan.

Implementation of EBMUD Standard Construction Specification 01 35 44 Environmental Requirements Section 1.1(B), Site Activities, requires that activities on construction sites be controlled to prevent discharge of contaminated stormwater. The contractor would be required to manage materials on the site (including demolition material and stockpiles) such that it cannot be washed off site by stormwater. Construction areas would be required to be graded or have BMPs (e.g., erosion control, sediment control, waste management, and good housekeeping measures) installed to contain surface runoff which would minimize the potential for contaminated stormwater to be transported offsite.

Implementation of EBMUD Standard Construction Specification 01 35 44 Section 1.4(A), Storm Water Management, requires that a SWPPP be developed and BMPs implemented in accordance with the Construction General Permit to control sediment and other potential contaminants in stormwater discharges from the Project site. The SWPPP must be reviewed and approved by EBMUD before the start of construction and requires the contractor to control discharge of soil and sediment in any discharges.

Implementation of EBMUD Standard Construction Specification 01 35 44 Section 1.4(B), Water Control and Disposal Plan, requires that the contractor provide a detailed Water Control and Disposal Plan and maintain proper control of the discharge at the discharge point to prevent erosion, scouring of bank, nuisance, contamination, and excess sedimentation into receiving waters.

The Project would comply with the requirements of the Construction General Permit, and the Project includes treatment and flow controls for stormwater runoff, as well as site stabilization and erosion control measures. EBMUD Standard Construction Specifications 01 34 44, Environmental Requirements, Section 1.1(B), Section 1.4(A), and Section 1.4(B) have been incorporated into the Project, which require activities on construction sites be controlled such that waters flowing from existing projects, structures, or surrounding areas do not come onto the work and staging areas to prevent discharge of contaminated stormwater and require development and adherence to a SWPPP and Water Control and Disposal Plan. Therefore, Project construction activities would not substantially alter the existing drainage pattern of the site or area in a manner which would result in substantial erosion or siltation on or off-site, and impacts would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (**Appendix E**) lists the applicable standard specifications language.

Operation and Maintenance

Stormwater drainage at the Walnut Creek WTP site is currently collected on site, diverted through catch basins and storm drains, and discharged to the tributary creeks downstream of the site. As described under Impact HYD-1, the Project would increase the amount of impervious surface area in Walnut Creek WTP by approximately 5.5 acres, which could alter the existing drainage pattern of the site or area. Bioretention basins would be constructed at the Walnut Creek WTP, and thus no off-site drainage system improvements would be required because runoff would be handled on site and the volume of drainage exiting the site would not increase. Because of these improvements drainage changes that would increase off-site erosion or siltation would not be expected at the Walnut Creek WTP as result of the Project.

At the Lafayette WTP site, Lafayette Creek crosses the southern portion of the Lafayette WTP downstream of its confluence with Hidden Valley Creek. Hidden Vallely Creek is located underground near the intersection of El Nido Ranch Road and Mt. Diablo Boulevard. An intermittent drainage also flows into Lafayette Creek east of this intersection in the western portion of the Lafayette WTP property. A series of on-site storm drains collect stormwater at the Lafayette WTP and discharges it to Lafayette Creek. The proposed work at the Lafayette WTP is expected to minimally increase impervious surface area because the replacement weir would be constructed in a currently undeveloped area and a similar impervious surface would be removed by demolition of the existing weir. Additional runoff could be produced, but the new impervious area is expected to be limited in extent and is not anticipated to significantly increase the volume of runoff produced at the Lafayette WTP site.

Ongoing Project operation and maintenance activities would not 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 could result in substantial erosion or siltation on or off-site.

Substantial soil erosion or loss of topsoil at both the Walnut Creek WTP site and the Lafayette WTP would be minimized because long-term site maintenance would continue and would involve vegetation management on site. In addition, the Project includes the construction of new bioretention basins at the Walnut Creek WTP site. The enhanced drainage from the bioretention basins would reduce the potential for erosion on or off site.

Potential for substantial runoff or soil erosion at the Lafayette WTP site is minimized as revegetation for erosion control/site stabilization would be established. Exposed soils at the Lafayette WTP would be hydroseeded with EBMUD's standard hydroseed mix upon the completion of construction to prevent erosion of topsoil.

Because site stabilization would be established, erosion control measures would be in place at both the Walnut Creek WTP and Lafayette WTP sites, and new bioretention basins would enhance drainage and reduce runoff at the Walnut Creek WTP, operation and maintenance activities are not anticipated to alter drainage patterns or result in substantial erosion or siltation on or off site, and impacts are considered less than significant.

Significance Determination Before Mitigation

Less than significant.

Mitigation Measures

None required.

Impact HYD-3b: 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 substantially increase the rate or amount of surface runoff in a manner which would result in flooding or off site (Criterion 3b)

Walnut Creek WTP and Lafayette WTP, Construction Phase 1 and Phase 2

The Walnut Creek WTP is not located in a flood-prone area (FEMA, 2009). Putnam Creek, the seasonal tributary of Grayson Creek that flows along the northwestern end of the Walnut Creek WTP, and beneath the site in a 36-inch diameter culvert, does not have a defined 100-year flood zone. Construction activities at the Walnut Creek WTP include soil-disturbing activities, such as excavation and site clearing, which have the potential to increase surface runoff.

The Lafayette WTP is located adjacent to multiple identified flood zone areas (FEMA, 2017). Although Lafayette Creek crosses the southern portion of the Lafayette WTP site, the flood plain at this location is contained within the stream channel, and there is no history of flooding at the Lafayette WTP.

As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including EBMUD

Standard Construction Specification 01 35 44 Section 1.1(B), Controls on Site Activities which requires control of site activities to manage surface water flows, including containing surface run-off, preventing construction debris from entering storm drains or surface waters, and implementing spill prevention and response measures.

Because EBMUD Standard Construction Specification 01 35 44 Section 1.1(B) has been incorporated into the Project and requires that activities on the construction site are controlled such that surface runoff is contained to prevent discharge of contaminated stormwater , the Project would not result in alteration of local drainage patterns that would substantially increase the rate or amount of surface run-off or result in flooding on or off site, and the impact would be less than significant.

Operation and Maintenance

Operation and maintenance activities associated with the Project are not anticipated to substantially increase the rate or amount of surface run-off and result in flooding on or off site. Improvements at the Walnut Creek WTP would create approximately 5.5 acres of additional impervious surface areas that could increase stormwater runoff. Runoff from areas where new impervious surface is created would be directed to existing and new storm drain pipelines, v-ditches, bio-swales, and energy dissipators. Additionally, new bioretention basins would be constructed around the Walnut Creek WTP site as needed to accommodate the additional runoff from new impervious areas. The bioretention areas would include vegetation with plantings that would allow infiltration of stormwater.

Improvements at the Lafayette WTP could increase impervious surface area because a replacement weir would be constructed in a currently undeveloped area, though some impervious surface would be removed by demolition of the existing weir. Additional runoff could be produced, but the new impervious area is expected to be limited in extent and is not anticipated to significantly increase the volume of runoff or risk of flooding at the Lafayette WTP site.

Operation and maintenance activities at both sites would be similar to existing operations. Long-term site maintenance at both the Walnut Creek WTP and Lafayette WTP would involve vegetation management on site, which include site grazing with goats, trimming shrubbery and trees and keeping the site clean and free of debris. Ongoing maintenance activities would continue to be conducted by staff already on site.

New bioretention basins would encourage infiltration of stormwater and reduce runoff at the Walnut Creek WTP, and additional impervious areas at the Lafayette WTP is limited in extent. Therefore, operational activities at both the Walnut Creek WTP and Lafayette WTP would not substantially increase the rate of runoff in a manner that would result in flooding on or off site, the Project would not substantially alter existing drainage patterns in a manner that would substantially increase the rate or amount of surface runoff or result in flooding or off site resulting in a less than significant impact.

Significance Determination Before Mitigation

Less than significant.

Mitigation Measures

None required.

Impact HYD-3c: 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 create or contribute run-off water that exceeds the capacity of existing or planned stormwater drainage systems, or provide substantial additional sources of polluted runoff (Criterion 3c).

Walnut Creek WTP and Lafayette WTP, Construction Phase 1 and Phase 2

Project construction activities at the Walnut Creek WTP include grading, excavation, and other soil disturbing activities during both Phase 1 and Phase 2. Phase 1 construction would require excavation of approximately 44,000 CY of material, and Phase 2 construction would require excavation of approximately 27,000 CY of material. Project construction activities at the Lafayette WTP would also require grading, excavation, and other soil disturbing activities. Removal of vegetation at excavation areas at both the Walnut Creek WTP and Lafayette WTP sites would expose bare soil that could be eroded during rainfall events. If runoff from rainfall flows over construction sites, the runoff can transport sediment and other pollutants such as building materials, concrete washout, paint, fuel, oil, and solvents into the stormwater system. Fuels, lubricants, and hazardous materials associated with construction equipment could adversely affect water quality if spilled or stored improperly.

As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project. These include EBMUD standard Construction Specification 01 35 44, Environmental Requirements, Section 1.1(B) Site Activities, Section 1.4(A) Storm Water Management, and Section 1.4(B) Water Control and Disposal Plan.

Implementation of EBMUD Standard Construction 01 35 44, Environmental Requirements, Section 1.1(B) Site Activities, requires that activities on construction sites be controlled to prevent discharge of contaminated stormwater. The contractor would be required to manage materials on the site (including demolition material and stockpiles) such that it cannot be washed offsite by stormwater. Construction areas would be required to be graded or have BMPs (e.g., erosion control, sediment control, waste management, and good housekeeping measures) installed to contain surface runoff which would minimize the potential for contaminated stormwater to be transported off site.

Implementation of EBMUD Standard Construction Specification 01 35 44 Section 1.4(A), Storm Water Management, requires that a SWPPP be developed and BMPs implemented in accordance with the Construction General Permit to control sediment and other potential contaminants in stormwater discharges from the Project site. The SWPPP must be reviewed and approved by EBMUD before the start of construction and requires the contractor to control discharge of soil, sediment, and concrete residue and control pH and chlorine residual of any discharges.

Implementation of EBMUD Standard Construction Specification 01 35 44 Section 1.4(B), Water Control and Disposal Plan, requires that the contractor provide a detailed Water Control and Disposal Plan and maintain proper control of the discharge at the discharge point to prevent erosion, scouring of bank, nuisance, contamination, and excess sedimentation into receiving waters.

Because the Project would incorporate EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, Section 1.1(B) Site Activities, Section 1.4(A) Storm Water

Management, Section 1.4(B) Water Control and Disposal Plan, which would ensure proper stormwater management by diverting or otherwise controlling surface water and waters flowing from existing projects, structures, or surrounding areas from coming onto the work and staging areas.to prevent discharge of contaminated water from construction sites, the Project is not anticipated to generate runoff that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff, thus, the impact is considered less than significant.

Operation and Maintenance

New facilities at the Walnut Creek WTP would increase impervious surfaces by approximately 5.5 acres, which has the potential to generate additional discharge of stormwater into the stormwater drainage system that could exceed the capacity of the system. Since the Project would create more than one acre of new impervious area, the Project would include both treatment and flow controls for stormwater runoff. Improvements at the Walnut Creek WTP would include installation of bioretention basins to capture and treat stormwater in accordance with applicable local and state water quality control plans.

Improvements at the Lafayette WTP could increase impervious surface area because a replacement weir would be constructed in a currently undeveloped area, though some impervious surface would be removed by demolition of the existing weir. Additional runoff could be produced, but the new impervious area is expected to be limited in extent.

New bioretention basins at the Walnut Creek WTP site would be vegetated with plantings that would allow infiltration of stormwater, which would reduce the amount of stormwater discharge, and thus, the capacity of the storm drains would not be exceeded. Project facilities, structures, and landscapes would be regularly maintained and inspected, ensuring that facilities, structures, and landscapes would be in functional order to reduce the likelihood of polluted run-off on and off site.

Additionally, following construction at both the Walnut Creek WTP and Lafayette WTP, the potential for substantial runoff or erosion would be minimized since erosion control/site stabilization measures (e.g., hydroseeding and tree planting) would reduce the risk of flooding. Exposed soils at the Walnut Creek WTP would be hydroseeded with EBMUD's standard hydroseed mix upon the completion of construction to prevent erosion of topsoil. Site stabilization would be established would prevent generation of additional sources of polluted runoff and impacts would be less than significant. At the Lafayette WTP new trees would be planted downslope around the new weir structure. After Lafayette Weir No. 1 is demolished, the area would be revegetated using EBMUD's standard hydroseed mix. A retaining wall would be constructed downslope of the new Lafayette Weir No. 1, which would provide stability to the slope. The area south of the proposed retaining wall would be planted with new oak plantings, with hydroseeding underneath the new tree plantings.

Because new bioretention basins at the Walnut Creek WTP would be designed to treat and infiltrate stormwater runoff generated by the additional impervious surfaces and would be properly maintained and inspected, and erosion control/site stabilization measures at both sites would in place to prevent soil erosion, the Project would not exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff, and impacts would be less than significant.

Significance Determination Before Mitigation

Less than significant.

Mitigation Measures

None required.

Impact HYD-4: Conflict with or obstruct implementation of a Water Quality Control Plan or Sustainable Groundwater Management Plan (Criterion 5).

Walnut Creek WTP and Lafayette WTP, Construction Phase 1 and Phase 2

Construction of improvements at the Walnut Creek WTP and Lafayette WTP sites would not require groundwater supplies or involve the construction of groundwater wells. However, construction-related activities involving soil disturbance, such as grading and excavation, could result in erosion, siltation, and/or delivery of sediments to surface waters. If precautions are not taken to contain contaminants, construction could contribute to water quality degradation including stormwater run-off, a form of nonpoint-source pollution. In addition, as construction equipment would require the use of fuels, lubricants, and other hazardous materials, if these materials are stored improperly during Project construction, water quality violations could occur.

However, as construction at the Walnut Creek WTP would disturb more than one acre, coverage under the General Construction Permit and development of a SWPPP would be required. The requirements of the General Construction Permit are enhanced and made more specific by EBMUD Standard Construction Specification 01 35 44 (described in the Regulatory Framework section). Pursuant to EBMUD Standard Construction Specification 01 35 44, Section 1.4(A), EBMUD requires qualified professionals (as described in the terms of the permit) to prepare and certify all permit-required document submittals, to implement effective stormwater and non-stormwater management practices, and conduct inspections and monitoring as required by the permit. The SWPPP must be reviewed and approved by EBMUD before the start of construction, and requires the contractor to control discharge of soil, sediment, and concrete residue and control pH and chlorine residual of any discharges. Therefore, construction of the Project would not conflict with or obstruct surface or groundwater objectives identified in the Basin Plan.

Project construction activities at the Lafayette WTP would also require grading, excavation, and other soil disturbing activities, which could result in soil erosion and the migration of soil and sediment in stormwater runoff to downstream surface waters and storm drains. Fuels, lubricants, and other hazardous materials associated with construction equipment could adversely affect water quality if spilled or stored improperly. Although construction activities at the Lafayette WTP are not anticipated to disturb an area greater than one acre, a SWPPP containing erosion and sediment control BMPs would be prepared and implemented in accordance with the Construction General Permit per EBMUD Standard Construction Specification 01 35 44 Section 1.4(A), Storm Water Management, which requires that a SWPPP be developed and BMPs implemented in accordance with the Construction General Permit to control sediment and other potential contaminants in stormwater discharges from the Project site.

As described in the Environmental Setting section, neither the Walnut Creek WTP nor the Lafayette WTP overlies the Ygnacio Valley Subbasin nor any other defined groundwater subbasin. The Ygnacio Valley Subbasin is identified as a very low priority basin and is not required to develop a Groundwater Sustainability Plan (GSP) (DWR, 2021). The Project would not alter or otherwise conflict with the goals set for beneficial uses of the groundwater in this basin. However, through the bioretention basins, EBMUD would treat as appropriate and return some of the water through the stormwater system (stormwater would be directed to the new bioretention basins, which would be filled with a layer of permeable gravel and a layer of native topsoil material, excavated on site), effectively contributing to recharge during construction.

Project construction would not require groundwater supplies or involve construction of groundwater wells, and neither the Walnut Creek WTP nor the Lafayette WTP overlies the Ygnacio Valley Subbasin, or any other defined groundwater basin. The Project would comply with state and local regulations, including Construction General Permit and would incorporate EBMUD Standard Construction Specifications 01 34 44, Environmental Requirements, Section 1.4(A), such that a SWPPP would be developed and BMPs implemented. Project construction thus would not conflict with or obstruct implementation of a Water Quality Control Plan or Sustainable Groundwater Management Plan and the impact would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (**Appendix E**) lists the applicable standard specifications language.

Operation and Maintenance

Operation and maintenance activities associated with the Project are not anticipated to conflict with or obstruct implementation of a Water Quality Control Plan or Groundwater Sustainability Plan.

As described under Impact HYD-1, once operational, the Project would incorporate source control measures and would not degrade water quality at the Walnut Creek WTP site. The proposed work at the Lafayette WTP site could increase impervious surface area, but the new impervious area is expected be limited in extent. Following construction, potential for substantial runoff or soil erosion at both sites would be minimized as revegetation for erosion control/site stabilization would be established. Exposed soils would be hydroseeded with EBMUD's standard hydroseed mix upon the completion of construction to prevent erosion of topsoil. Thus, the Project would be consistent with the San Francisco region's Water Quality Control Plan objectives.

As described under Impact HYD-2, neither the Walnut Creek WTP nor the Lafayette WTP overlies the Ygnacio Valley Subbasin or any other defined groundwater basins. The Project does not involve the operation of groundwater wells or require groundwater supplies. Additionally, impacts related to groundwater recharge would be reduced by the design and performance of the Project's bioretention area.

The Project would not require groundwater supplies or involve construction of groundwater wells, and neither the Walnut Creek WTP nor the Lafayette WTP overlies the Ygnacio Valley Subbasin, or any other defined groundwater basin. Also, the new bioretention basins at the Walnut Creek WTP would enhance drainage and reduce runoff, and erosion control/site stabilization measures would be in place at both sites. Thus, operation and maintenance activities would not contribute to degradation of water quality, the risk of operation and maintenance activities conflicting with or obstructing implementation of a Water Quality Control Plan or Sustainable Groundwater Management Plan is low, and the impact is less than significant.

Cumulative Impact Analysis

The Project combined with existing and remaining development and/or redevelopment at the Walnut Creek WTP and Lafayette WTP would not be anticipated to adversely impact hydrology and water quality in the Project's vicinity because new development and redevelopment at both the Walnut WTP and Lafayette WTP sites would be required to comply with state and local regulations, including Construction General Permit for stormwater discharges. Compliance with applicable regulations would reduce the risk of violating any water quality standards or waste discharge requirements.

Although the Project would create additional impervious areas at both sites that could result in additional stormwater runoff, the potential impacts are considered cumulatively less than significant because new bioretention basins would be constructed in the Walnut Creek WTP to accommodate the additional stormwater runoff, and the new impervious areas are expected to be extremely limited in extent at the Lafayette WTP and are not anticipated to significantly increase the volume of runoff produced at the Lafayette WTP site.

Because construction of the improvements at the Walnut Creek WTP and Lafayette WTP sites would not require groundwater supplies or involve the construction of groundwater wells, and because neither the Walnut Creek WTP nor the Lafayette WTP overlies the Ygnacio Valley Subbasin or any other defined groundwater basin, there would be no cumulative impacts that would impede the sustainable management of a groundwater basin.

The Project would not impede or redirect flood flows and would have no impact on areas that are currently subject to flood risk. The Project would not have the potential to release pollutants due to inundation and there would be no impact.

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3.10 Land Use and Planning

This section describes the physical, environmental, and regulatory setting for land use and planning at the Project sites and vicinity, identifies the significance criteria for determining environmental impacts, and evaluates the potential impacts on land use and planning that could result from implementation of the Project.

3.10.1 Environmental Setting

The Project would take place at the Walnut Creek WTP, in the City of Walnut Creek, and the Lafayette WTP, in the City of Lafayette. **Table 3.10-1** indicates the location, land use jurisdiction, and general plan and zoning designations for each Project site. Existing land uses in the vicinity of each site are described in the following subsections.

Table 3.10-1: Project Site Locations and Land Use Planning Designations

Facility	Location	Jurisdiction	General Plan Designation	Zoning Designation
Walnut Creek WTP	Existing EBMUD facility at 2201 Larkey Lane	Walnut Creek	Open Space/Recreation	Open Space/Recreation
Lafayette WTP	Existing EBMUD facility at 3848 Mt. Diablo Boulevard	Lafayette	Open Space; Public Utility	Single Family Residential District-20

Sources: Walnut Creek General Plan Land Use Map (Walnut Creek, 2023a); Walnut Creek Zoning Map (Walnut Creek, 2023b); Lafayette General Plan Land Use Map (Lafayette, 2002); Lafayette Zoning Map (Lafayette, 2013).

Walnut Creek WTP

The Walnut Creek WTP is located on EBMUD property in Walnut Creek, at the western terminus of Larkey Lane. The site is occupied by water treatment facilities, including filters, a chlorine contact chamber, a clearwell, a chemical building, pipelines, a pumping plant, solids basins, an emergency operations building, maintenance shops, storage areas, a water tank, and other facilities. Outside of the water treatment and water storage facilities, the Walnut Creek WTP includes developed areas with paved roads, parking areas, and ornamental landscaping. Other portions of the site include open areas of non-native grassland, mixed oak woodland, riparian woodland, and ornamental shrubs and trees. The facility has been in operation at this location since 1967.

The Acalanes Ridge Open Space, owned by the City of Walnut Creek, wraps around the south, west, and north sides of the site. The multiuse East Bay Regional Park District Briones to Mt. Diablo Regional Trail is located along the northern border of the Walnut Creek WTP (described further in *Section 3.12, Recreation*). Other recreational trails are located within the Acalanes Ridge Open Space to the west of the Walnut Creek WTP. Single family homes are adjacent to the site to the east, and other residential areas are located north of the Walnut Creek WTP across existing open space. St. Stephen Catholic Church is located northeast of the site. Existing land uses in the Walnut Creek WTP vicinity are shown in **Figure 3.10-1**.

Figure 3.10-1: Existing Land Uses in the Vicinity of Walnut Creek WTP

The Walnut Creek General Plan (described further in *Section 3.10.2, Regulatory Framework*), designates the land uses adjacent to the Walnut Creek WTP. Land immediately to the south, west, and north of the Walnut Creek WTP is designated as Open Space/Recreation. Land immediately to the east is designated as Single-family Medium (Walnut Creek, 2023a).

Areas adjacent to the Walnut Creek WTP are zoned as follows: land to the north is zoned as Open Space/Recreation; to the east, zoning is residential (R-10); and to the south and west, zoning is Planned Development (Walnut Creek, 2023b).

Lafayette WTP

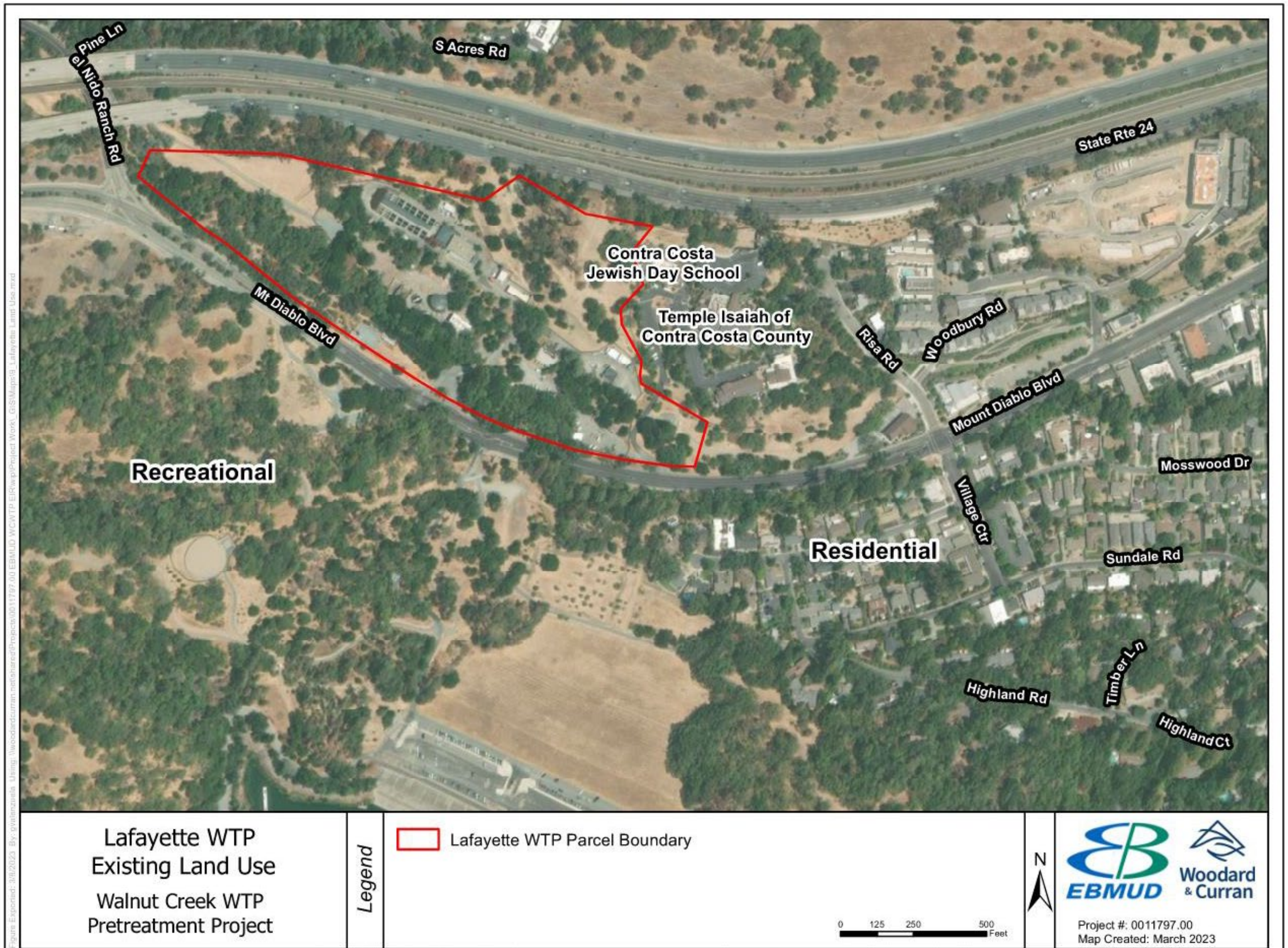
The Lafayette WTP is located on EBMUD property in the City of Lafayette. The site is currently occupied by water treatment facility buildings, maintenance building, pumping plant, weir structures, filters, and other facilities. Outside of the water treatment facilities, the Lafayette WTP includes paved roads, ornamental landscaping, non-native grasslands, and trees. A portion of the EBMUD property along Mt. Diablo Boulevard is leased to the City of Lafayette and occupied by a community garden and outdoor learning center.

The Lafayette WTP is located between Mt. Diablo Boulevard to the south and west, State Route 24 to the north, and Temple Isaiah to the east. Other land uses that are in the general vicinity of the Lafayette WTP, but not immediately adjacent, include EBMUD's Lafayette Reservoir Recreation Area to the south of Mt. Diablo Boulevard, a low-density residential development to the southeast, and a commercial development to the east, including office space, condos, and Veterans Memorial center. Existing land uses in the Lafayette WTP vicinity are shown in **Figure 3.10-2**. The Lafayette WTP site is zoned residential (R-20), but the General Plan land use designation for the portion of the site where the weirs would be modified is "Public Utilities".

The Lafayette General Plan (described further in *Section 3.10.2, Regulatory Framework*), designates the land uses adjacent to the Lafayette WTP as follows: to the north is the State Route 24 right-of-way; to the east is low density single-family residential; to the south is the Mt. Diablo Boulevard right-of-way; and to the west is the El Nido Ranch Road right-of-way (Lafayette, 2002).

Zoning adjacent to the Lafayette WTP corresponds closely to the General Plan land uses. Areas adjacent to the Lafayette WTP are zoned as follows: to the north is the State Route 24 right-of-way; to the east is residential (R-20 and R-40); to the south is the Mt. Diablo Boulevard right-of-way; and to the west is the El Nido Ranch Road right-of-way (Lafayette, 2013).

Figure 3.10-2: Existing Land Uses in the Vicinity of Lafayette WTP



Third Party GIS Disclaimer: This map is for reference and graphical purposes only and should not be relied upon by third parties for any legal decisions. Any reliance upon the map or data contained herein shall be at the users' sole risk

3.10.2 Regulatory Framework

This section describes policies and regulations related to land use and planning that may apply to the Project.

Federal and State Policies and Regulations

No federal or state policies or regulations are applicable to the Project's land use component.

Local Policies and Regulations

Under Section 53091 of the California Government Code, EBMUD, as a local agency and utility district, is not subject to building and land use zoning ordinances for projects involving facilities for the production, generation, storage, treatment, or transmission of water. However, EBMUD's practice is to work with local jurisdictions and neighboring communities during project planning and to consider local environmental protection policies for guidance.

Walnut Creek

Walnut Creek General Plan

The Walnut Creek General Plan is a long-range policy document intended to guide physical, economic, and environmental growth in the City of Walnut Creek. The City of Walnut Creek General Plan was adopted in 2006 and has a planning horizon through the year 2025. The General Plan Land Use Map, most recently updated in 2023, designates the Walnut Creek WTP property as Open Space/Recreation (Walnut Creek, 2023). Applicable goals and policies from the General Plan are listed below.

Chapter 2 – Quality of Life

This Chapter looks at how the variety of economic, cultural, recreational resources contribute to quality of life in the community.

Goal 1. Protect and enhance the quality of life in the city's residential neighborhoods.

> **Policy 1.2** Protect and enhance neighborhood amenities and services including parks and shopping.
>
> > *Action 1.2.1.* As demographic changes occur in specific neighborhoods, adjust community services and facilitate appropriate retail services.
>
> **Policy 1.3.** Work in cooperation with other agencies that provide neighborhood amenities and services.
>
> > *Action 1.3.1.* Coordinate with other responsible agencies such as school districts and County libraries for review and comment on City or agency plans and development projects in the city that may affect demand for service.

Chapter 3 - Natural Environment and Public Spaces

The Natural Environment and Public Spaces Element describes goals and policies related to open space, creeks, trails, and parks and plazas in Walnut Creek. The Natural Environment and Public Spaces Element includes a map of existing open space, which identifies the Walnut Creek WTP property as publicly owned lands that are used as open space but are not programmed for open space use by Walnut Creek (Walnut Creek, 2006). Applicable goals and policies are listed below.

Goal 1. Maintain and enhance open space lands.

Policy 1.1. Protect, manage and improve open space lands.

Action 1.1.2. Work with other public agencies (such as water districts, adjacent cities, and park districts) in managing, operating, linking and providing access to open space.

Policy 1.3. Promote a variety of appropriate activities on open space lands.

Action 1.3.2. Allow on open space lands, only facilities, structures, and activities compatible with conservation, preservation, and education.

Policy 1.4. Provide convenient public access to open space lands and trails.

Action 1.4.1. Secure public access, where possible, to private open space lands.

Goal 4. Provide a system of safe, well-developed, well-connected, and well-maintained trails.

Policy 4.2. Maintain and improve the trail system, including to and within the open space lands.

Walnut Creek Municipal Code

The Walnut Creek WTP property is zoned as Open Space Recreation (O-S-R). The Walnut Creek Zoning Ordinance (Walnut Creek Municipal Code Title 10, Chapter 2) describes regulations for Open Space/Recreation districts. The purpose of the Open Space/Recreation district is to identify the existing publicly owned open space, parks, and golf courses (Walnut Creek, 2022). The intent is to provide land for public parks, recreation areas, wildlife preserves, watershed areas, and scenic vistas. The maximum building/structure height limit is 25 feet. The maximum density shall be determined on a case-by-case basis but in no case shall exceed 0.1 dwelling unit per acre or a floor area ration of 0.1. Certain major utilities[1] are within the community facility use classifications permitted in the Open Space/Recreation zone, specifically: electrical substations, aboveground electrical transmission lines, water pumping stations, and switching buildings. All other major utility uses are not permitted in the Open Space/Recreation zone. Minor utility uses,[2] such as underground water and sewer lines, are permitted in the Open Space/Recreation zone.

[1] "Major utilities" are defined in the Walnut Creek Zoning Code as "Generating plants, electrical substations, above-ground electrical transmission lines, switching buildings, refuse collections, processing, or disposal facilities, water reservoirs, flood control or drainage facilities, water or wastewater treatment plants, transportation or communications facilities, and similar facilities of public agencies or public utilities, but excluding recycling facilities (See Community Use Classifications—Recycling Facilities.) A minor utility that may have a significant effect on surrounding uses shall be regulated under this classification." W.C. Municipal Code § 10-2.403.23,

[2] "Minor utilities" are defined in the Walnut Creek Zoning Code as "Utility facilities that are necessary to support legally established uses and involve only minor structures such as electrical distribution lines and underground water and sewer lines." W.C. Municipal Code § 10-2.403.24,

Lafayette

Lafayette General Plan

The Lafayette General Plan is a comprehensive, long-range plan for the physical development of the City of Lafayette that identifies land use goals and policies. The Lafayette WTP property is designated as Open Space and Public Utility in the General Plan (Lafayette, 2002). The Open Space designation applies to areas of land that are essentially unimproved and used for the preservation of natural resources and habitats, agriculture, passive outdoor recreation, visual amenities such as view corridors and scenic vistas, or the maintenance of public health and safety. Development is limited to 400 square feet per parcel. The Public Utilities designation includes public utility facilities, transformer stations, transportation facilities, water treatment plants, and related easements.

The Land Use Chapter of the Lafayette General Plan includes the following policies that are relevant to the Lafayette WTP:

Goal LU-4: Ensure that the semi-rural character of the community is protected by appropriate infrastructure design.

> **Policy LU-4.1:** Infrastructure Design: Public and private infrastructure should reinforce the semi-rural qualities of residential neighborhoods.
>
> > *Program LU-4.1.2:* Require design review of infrastructure projects, including circulation, parks, government-sponsored projects, and telecommunications facilities.

Goal LU-18: Coordinate with other jurisdictions to protect and restore environmental resources and to provide public services.

> **Policy LU-18.2:** Coordination of Public Services: Coordinate water supply, flood control, wastewater and solid waste disposal, soil conservation, and open space preservation with other jurisdictions to create the greatest public benefit and the least degree of environmental impact.
>
> > *Program LU-18.2.1:* Periodically review level of service standards with the districts providing water supply, flood control, wastewater and solid waste disposal, soil conservation, and open space preservation.

Lafayette Municipal Code

Within Lafayette, the Zoning Ordinance dictates acceptable land uses (Lafayette, 2023). The Lafayette WTP property is zoned as single-family residential, district-20 (R-20) (Lafayette, 2013). Lafayette's Zoning Ordinance indicates that in R-20 districts, publicly owned buildings and structures are uses requiring a permit, except as provided in Section 6-516 of the Code. This section states that a local agency is regulated as provided in California Government Code sections 53091 through 53096. Section 6-516 of the Zoning Ordinance also excepts use of land for rights-of-way for the construction, maintenance and repair of public utilities and publicly owned facilities, and for privately owned pipelines for the transportation of oil, gas, water and other substances transportable by pipelines (Lafayette, 2023).

3.10.3 Impact Analysis

Methodology for Analysis

Land use impacts are assessed based upon the Project's consistency with local and regional land use policies. Existing site conditions prior to implementation of the Project are compared to site conditions during and after the Project.

Significance Criteria

Consistent with Appendix G of the *CEQA Guidelines* an impact on land use and planning would be considered significant if the Project would:

1. Physically divide an established community.
2. 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.

Criteria Requiring No Further Evaluation

Criteria listed above that are not applicable to actions associated with the Project are identified below, along with the supporting rationale as to why further consideration is unnecessary and a no-impact determination is appropriate.

- ***Physically divide an established community. (Criterion 1) -*** The Walnut Creek WTP and Lafayette WTP are both existing facilities and the Project would be constructed and operated within the existing boundaries of both water treatment plants. The Project would not physically divide any established communities in either the City of Walnut Creek or the City of Lafayette. Therefore, there would be no impact and Criterion 1 is not discussed further in the analysis presented below.

Impacts and Mitigation Measures

Impact LU-1: 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. (Criterion 2)

Walnut Creek WTP Construction Phase 1 and 2

The Project involves constructing new pretreatment and taste and odor improvements at the Walnut Creek WTP (rapid sedimentation process, ballasted flocculation process, ozone treatment, and ancillary improvements) and demolishing certain existing facilities (such as components within the solids detention basin). The proposed Walnut Creek WTP improvements would be consistent with the existing use of the site for water treatment and distribution activities. All proposed facilities would be located on EBMUD property. Some proposed facilities would be constructed in areas currently occupied primarily by non-native grassland, and there would be some removal of trees in adjacent mixed oak and riparian woodland areas. Other facilities would be constructed in areas currently occupied by existing roads and water treatment plant facilities. The Project would add and/or alter specific water treatment plant facilities at the Walnut Creek WTP, but the overall land use at the site would not change.

The Project would not permanently affect land within the Acalanes Ridge Open Space or residential areas. However, the Project may be inconsistent with Policy 1.3 and Action 1.3.2 of the Natural Environment and Public Spaces element of the Walnut Creek General Plan, which allow for only facilities, structures, and activities compatible with conservation, preservation, and education on lands designated as open space. The Project would support other General Plan goals related to trails and recreation and quality of life for residents. Although the Project would require temporary closure of social footpaths that pass through EBMUD property, the footpaths would ultimately be redirected around new facilities and hiking access would be maintained, which would be consistent with General Plan goals, policies, and actions related to providing open space and trail connectivity (including Action 1.1.2, Policy 1.4, Goal 4, and Policy 4.2).

The Walnut Creek Zoning Code limits acceptable utility uses at Open Space Recreation sites to the following major utilities only: electrical substations, aboveground electrical transmission lines, water pumping stations and switching buildings (Walnut Creek, 2022); water treatment facilities are not permitted. Thus, the Project would be inconsistent with the existing zoning. However, the Project consists solely of water treatment facilities and directly related facilities on a site owned by EBMUD that already include these facilities. The proposed consolidated maintenance building would replace existing electrical and instrument maintenance shops at the Walnut Creek WTP, and would include utility areas, workstations, and bathrooms. The proposed consolidated maintenance building would be used to support both the existing water treatment activities and the additional treatment processes that would be constructed as part of the Project. Because the Project consists of "construction of facilities for the production, generation, storage [and] transmission of water," EBMUD is not bound by local land use designations (California Government Code Section 53091).

The proposed facilities at the Walnut Creek WTP would be compatible with existing land uses for several reasons. Water treatment, storage, and transmission uses already exist at the site and have coexisted with residential and open space uses since 1967. The Project would not be inconsistent with existing uses at the Walnut Creek WTP; in fact, the uses would be complementary. The proposed facilities would expand the water utility uses at the site but would not introduce a new use to the area. Because the Project proposes expansion of the same uses at the site, the Project would not be an incompatible land use in the area. Although some of the proposed facilities would be located on land that is currently occupied by non-native grassland and adjacent mixed oak and riparian woodland areas, the Project does not propose to change the existing site boundaries. The proposed facilities would be located wholly on EBMUD property, would not encroach upon neighboring properties, and would not develop any portion of the Acalanes Ridge Open Space. The Project would not physically change adjacent land uses in the vicinity and would not influence existing uses in the area. No residences would be displaced, and the Project would not impact recreational use on adjacent parcels (as discussed further in *Section 3.13, Recreation*). As noted above, EBMUD historically has allowed informal (community-established) social footpaths on the EBMUD property and would continue to do so following implementation of the Project.

Because the proposed facilities at the Walnut Creek WTP would not change the land use at the Walnut Creek WTP or influence surrounding residential and open space land uses, and because the proposed facilities are exempt from local land use designations as set forth in California Government Code Sections 53091, 53095 and 65402(c), the Project would not conflict with any land use plan, policy, or regulation, and the impact would be less than significant.

Lafayette WTP Construction

The proposed Lafayette WTP facilities would be constructed within the EBMUD-owned parcel. New facilities would be consistent with existing use at the site and would not permanently impact the existing surrounding land uses. The proposed facilities would not result in changes to land uses in the vicinity. All proposed facilities would be located within the Lafayette WTP and would be consistent with the existing use of the site.

The Lafayette WTP is zoned as residential (R-20), but the residential zoning does not apply to the construction or maintenance of public utilities facilities as specified in Government Code Section 53091. The General Plan designates the Lafayette WTP as Open Space and Public Utility, and all proposed improvements at the Lafayette WTP would occur on the portion of the site designated as Public Utility, so the Project is consistent with the applicable land use plan.

The Project would be consistent with the land use goals outlined in Lafayette's General Plan. Proposed improvements would be limited to the Lafayette WTP and would not intensify use of the site. Although the proposed work at the Lafayette WTP would require removal of some trees which would increase views into the site from Mt. Diablo Boulevard, most views of the site would not change because the site is screened from view by topography and vegetation. The visible Lafayette WTP improvements would be similar to existing facilities visible at the site and would not change the semi-rural character of the site or vicinity. Therefore, the Project would be consistent with Policy LU-4.1 of the City of Lafayette's General Plan. The Project would allow EBMUD to more reliably treat a broader range of untreated water quality to maintain a high level of service in Lafayette and other portions of EBMUD's service area, consistent with Policy LU-18.2 of the City of Lafayette's General Plan.

Because the proposed Lafayette WTP facilities would be limited to the Lafayette WTP parcel, would not alter adjacent land uses, would not alter the semi-rural character of the City of Lafayette, and because the local zoning ordinances do not apply as specified in Government Code Section 53091, the Project would not conflict with any land use plan, policy, or regulation, and the impact would be less than significant.

Operation and Maintenance

Operation and maintenance of the Walnut Creek WTP would not impact adjacent residential or open space land uses. Operation and maintenance would involve limited additional truck trips for chemical deliveries and removal of dewatered solids. On very rare occasions, more truck trips may be required to remove dewatered solids after high turbidity events. Approximately two to four additional staff would report to the Walnut Creek WTP in order to operate and maintain the Project facilities. Long-term site maintenance and vegetation management would continue similar to existing conditions. Social footpath access would be maintained during operation. Operation and maintenance of the Project would not create long-term impacts that would affect adjacent land uses. Operation and maintenance of the proposed facilities would be confined to the Walnut Creek WTP parcel and would not cause land use changes to the surrounding residential areas or Acalanes Ridge Open Space.

Operation and maintenance of the Lafayette WTP would not differ from existing conditions. There would be no staffing changes and no new chemical usage, and thus there would be no potential for operation and maintenance of the Lafayette WTP to conflict with any land use plan, policy, or regulation.

Because operation and maintenance of the Project would not change existing uses of the Walnut Creek WTP or Lafayette WTP and would not disturb or encroach on adjacent or nearby land uses, Project operation would not conflict with any land use plan, policy, or regulation, and the impact would be less than significant.

Significance Determination Before Mitigation

Less than significant.

Mitigation Measures

None required.

Cumulative Impact Analysis

The Project would not divide a community. While implementation of the Project would result in potential inconsistencies with Walnut Creek land use and zoning designations, as described under LU-1, the proposed facilities are exempt from local land use designations as set forth in California Government Code Sections 53091. Additionally, the Project facilities would consist solely of water treatment facilities and ancillary facilities, and therefore would not alter the existing land uses at the Walnut Creek WTP or Lafayette WTP sites which already include these uses. The Project would not impact adjacent land uses.

As described in *Section 3.0.4, Approach to Analysis of Cumulative Impacts*, a number of planned EBMUD projects would occur at the Walnut Creek WTP and Lafayette WTP. As with the Project, cumulative projects at either WTP would be located within the EBMUD property boundaries. The cumulative projects located at the Walnut Creek WTP or Lafayette WTP would also be directly related to production, generation, storage, treatment, or transmission of water, and would thus be consistent with existing land uses at the site. Cumulative projects may demolish, construct, or reconfigure facilities at the Walnut Creek WTP or Lafayette WTP. However, cumulative projects would not introduce new land uses at either site that could change land use patterns. Water treatment facilities and associated facilities would not have the potential to add or displace other land uses (such as housing, commercial, or industrial development) that would impact land use patterns. Therefore, the Project, in combination with reasonably foreseeable future projects, would not have the potential to displace, encroach on, or convert adjacent land uses. The Project would not change land use in the vicinity of the Walnut Creek WTP or Lafayette WTP and would thus have no potential to contribute to cumulative impacts related to land use.

3.10.4 References

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3.11 Noise and Vibration

This section describes the physical, environmental and regulatory setting for noise, identifies the significance criteria for determining environmental impacts, and evaluates the potential impacts for noise and vibration that could result implementation of the Project. The analysis focuses on noise and vibration impacts on humans and structures; potential noise and vibration effects on wildlife are addressed in *Section 3.3, Biological Resources*. Supporting modeling output and calculations for the noise impact analysis are provided in **Appendix I**.

3.11.1 Environmental Setting

The discussion below defines the terms used in the noise and vibration evaluation and describes the noise and vibration conditions of the region and Project area.

Fundamentals of Sound and Vibration

Sound is characterized by various parameters that describe the rate of oscillation (frequency) of sound waves, the distance between successive troughs or crests in the wave, the speed that sound travels, and the pressure level or energy content of a given sound. The sound pressure level is the most common descriptor used to characterize the loudness of an ambient sound, and the decibel (dB) scale is used to quantify sound intensity.

Because sound can vary in intensity by over one million times within the range of human hearing, a logarithmic loudness scale is used to reflect this wide range. Because the human ear is not equally sensitive to all sound frequencies within the entire spectrum, human response is reflected in the A-weighted decibel (expressed as "dBA"), which refers to a scale of noise measurement that approximates the range of sensitivity of the human ear to sounds of different frequencies. On the dBA scale, the normal range of human hearing extends from about 0 dBA to about 140 dBA. Except in carefully controlled laboratory experiments, a change of only 1 dBA in sound level cannot be perceived. Outside of the laboratory, a 3-dBA change is considered a perceptible difference, while a 5-dBA change is readily noticeable. A 10-dBA increase in the level of a continuous noise represents a perceived doubling of loudness (Caltrans, 2013).

The types of activities or noise receptors generally determine whether a land use is sensitive. Based on the Land Use/Noise Compatibility matrix in the Walnut Creek General Plan Noise Element (City of Walnut Creek, 2006), noise sensitive land use includes, but is not limited to, residential, outdoor sports and recreation areas and parks, places of worships, and schools. Similarly, the Lafayette General Plan Noise Element identifies the same range of land use as sensitive to noise (City of Lafayette, 2002).

Noise Descriptors and Metrics

Noise is generally defined as sound that is loud, unpleasant, unexpected, or undesired to the noise receptor (Caltrans, 2013). Sound is mechanical energy transmitted in the form of an air wave by a disturbance or vibration that causes pressure variation in air the human ear can detect. Variations in noise exposure over time are typically expressed in terms of a steady-state energy level (called L_{eq}) that represents the acoustical energy of a given measurement, or alternatively as a statistical description of what sound level is exceeded over some fraction (10, 50, or 90 percent) of a given measurement period (i.e., L_{10}, L_{50}, L_{90}, respectively). $L_{eq}(24)$ is the steady-state acoustical energy level measured over a 24-hour period. L_{max} is the maximum, instantaneous noise level registered during a measurement period.

Because community noise receptors are more sensitive to unwanted noise intrusion during the evening and at night, 24-hour noise descriptors called the Community Noise Equivalent Level (CNEL) and day-night noise level (DNL or L_{dn}) are used for planning purposes; these levels add a dBA penalty increment to evening and nighttime noise levels to account for the increased sensitivity. CNEL adds a 5 dBA penalty during the evening (7:00 p.m. to 10:00 p.m.) and a 10-dBA penalty at night (10:00 p.m. to 7:00 a.m.). L_{dn} add a 10 dBA penalty to all nighttime noise levels between 10:00 p.m. and 7:00 a.m., but the L_{dn} does not add the evening 5 dBA penalty between 7:00 p.m. and 10:00 p.m. In practice, L_{dn} and CNEL usually differ by less than 1 dBA at any given location for transportation noise sources (Caltrans, 2013). As noted below in *Section 3.11.2*, the cities of Walnut Creek and Lafayette both use the L_{dn} metric in their General Plans; thus, the L_{dn} 24-hour noise descriptor will be used to describe the long-term operational noise impacts.

Table 3.11-1 presents representative noise sources and their corresponding noise levels in dBA at varying distances from the noise sources.

Attenuation of Noise

A noise receptor's distance from a noise source affects how noise levels attenuate (decrease). Transportation noise sources tend to be arranged linearly, such that roadway traffic attenuates at a rate of 3.0 dBA to 4.5 dBA per doubling of distance from the source, depending on the intervening surface (paved or vegetated, respectively). Point sources of noise, such as stationary equipment or construction equipment, typically attenuate at a rate of 6.0 dBA to 7.5 dBA per doubling of distance from the source.[1] For example, a sound level of 80 dBA at 50 feet from the noise source will be reduced to 74 dBA at 100 feet, 68 dBA at 200 feet, and so on. Noise levels can also be attenuated by "shielding" or providing a barrier between the source and the receptor. With respect to interior noise levels, noise attenuation effectiveness depends on whether windows are closed or open. Based on the United States Environmental Protection Agency (U.S. EPA) national average, closed windows reduce noise levels by approximately 25 dBA, while open windows reduce noise levels by about 15 dBA (U.S. EPA, 1974).

Speech Interference

Speech interference is an indicator of impact on typical daytime and evening activities. A speech interference indicator, in the context of impact duration and time of day, can be used to identify "substantial" increases in noise from temporary construction activities. Noise peaks generated by construction equipment could result in speech interference in adjacent buildings if the noise level in the interior of the building exceeds 45 to 60 dBA for people talking at 3 feet distance from each other[2] (U.S. EPA, 1974). Thus, with windows closed an exterior level of 70 dBA could cause some speech interference and an exterior level of 85 could cause intolerable speech

[1] The 1.5-dBA variation in attenuation rate (6 dBA vs. 7.5 dBA) can result from ground absorption effects, which occur as sound travels over soft surfaces such as soft earth or vegetation (7.5-dBA attenuation rate) vs. hard ground such as pavement or very hard-packed earth (6-dBA rate) (U.S. Department of Housing and Urban Development, 2009).

[2] For indoor noise environments, the highest noise level that permits relaxed conversation with 100 percent intelligibility throughout the room is 45 dBA. Speech interference is considered to become intolerable when normal conversation is precluded at 3 feet, which occurs when background noise levels exceed 60 dBA.

interference; with windows open, an exterior level of 60 dBA could cause some speech interference and 75 dBA could cause intolerable speech interference.

Table 3.11-1: Representative Environmental Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110	Rock band
Jet fly-over at 100 feet		
	100	
Gas lawnmower at 3 feet		
	90	
Diesel truck going 50 mph at 50 feet		Food blender at 3 feet
	80	Garbage disposal at 3 feet
Noisy urban area during daytime		
Gas lawnmower at 100 feet	70	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	60	
		Large business office
Quiet urban area during daytime	50	Dishwasher in next room
Quiet urban area during nighttime	40	Theater, large conference room (background)
Quiet suburban area during nighttime		
	30	Library
Quiet rural area during nighttime		Bedroom at night, concert hall (background)
	20	
		Broadcast/recording studio
	10	
	0	

Source: Caltrans, 2013
Notes: dBA = A-weighted decibel; mph = miles per hour.

Sleep Disturbance

Noise can disturb sleep by making it more difficult to fall asleep, by waking someone after they are asleep, or by altering their sleep stage, e.g., reducing the amount of rapid eye movement (REM) sleep. Noise exposure for people who are sleeping has also been linked to increased blood pressure, increased heart rate, increased body movements, and other physiological effects. Not surprisingly, people whose sleep is disturbed by noise often experience secondary effects such as increased fatigue, depressed mood, and decreased work performance. An interior nighttime level of 35 dBA is considered acceptable (U.S. EPA, 1974). The exterior shell of a house can reduce exterior noise levels by 25 dBA with the windows closed and 15 dBA with the windows open. Due to the long-term nature of the proposed project construction, it is expected that affected residents would have their windows open at times during warm weather periods for ventilation. Therefore, exterior noise levels of 50 dBA (windows open) or 60 dBA (windows closed) would maintain an acceptable interior noise environment of 35 dBA.

Vibration

Vibrations caused by construction activities can be interpreted as energy transmitted in waves through the soil mass. The energy waves generally dissipate with distance from the vibration source (e.g., pile driving or sheet pile driving). Since energy is lost during the transfer of energy from one particle to another, vibration that is distant from a source is usually less perceptible than vibration closer to the source. However, actual human and structure response to different vibration levels is influenced by a combination of factors, including soil or rock type, distance between source and receptor, duration, and the number of perceived events.

If great enough, the energy transmitted through the ground as vibration can cause structural damage. To assess the potential for structural damage associated with vibration, the vibratory ground motion in the vicinity of the affected structure is measured in terms of peak particle velocity (PPV) in the vertical and horizontal directions (vector sum), typically in units of inches per second (in/sec). For comparison, a freight train passing at 100 feet can cause vibrations of 0.1 in/sec PPV, while a strong earthquake can produce vibration in the range of 10 in/sec PPV (USGS, 2011). Minor cosmetic damage to fragile buildings can occur at vibration levels as low as 0.2 in/sec PPV for single-event sources depending on building condition and construction (Caltrans, 2020).

Existing Noise Environment

The noise and vibration study area extends beyond the Project sites and includes noise sensitive areas such as residential areas, parks, and trails that could be affected by Project activities. The Project has two work areas. The main Project site (Walnut Creek WTP site) is located in Walnut Creek approximately one mile west of Interstate 680 (I-680) and one mile north of State Route 24 (SR 24). The main freeway access is provided via I-680, which connects to SR 24 and State Route 242. **Figure 3.11-1** shows the noise and vibration sensitive receptor areas around the Walnut Creek WTP, which include residential areas, a church, and the Briones to Mt. Diablo Regional Trail in the Acalanes Ridge Open Space.

The Project also includes improvements at the Lafayette WTP site located in Lafayette, approximately 500 feet south of SR 24 and directly north of Mt. Diablo Road. **Figure 3.11-2** shows the noise and vibration sensitive receptors areas around the Lafayette WTP.

Figure 3.11-1: Walnut Creek Project Study Area Noise Measurement Locations and Sensitive Receptor Areas

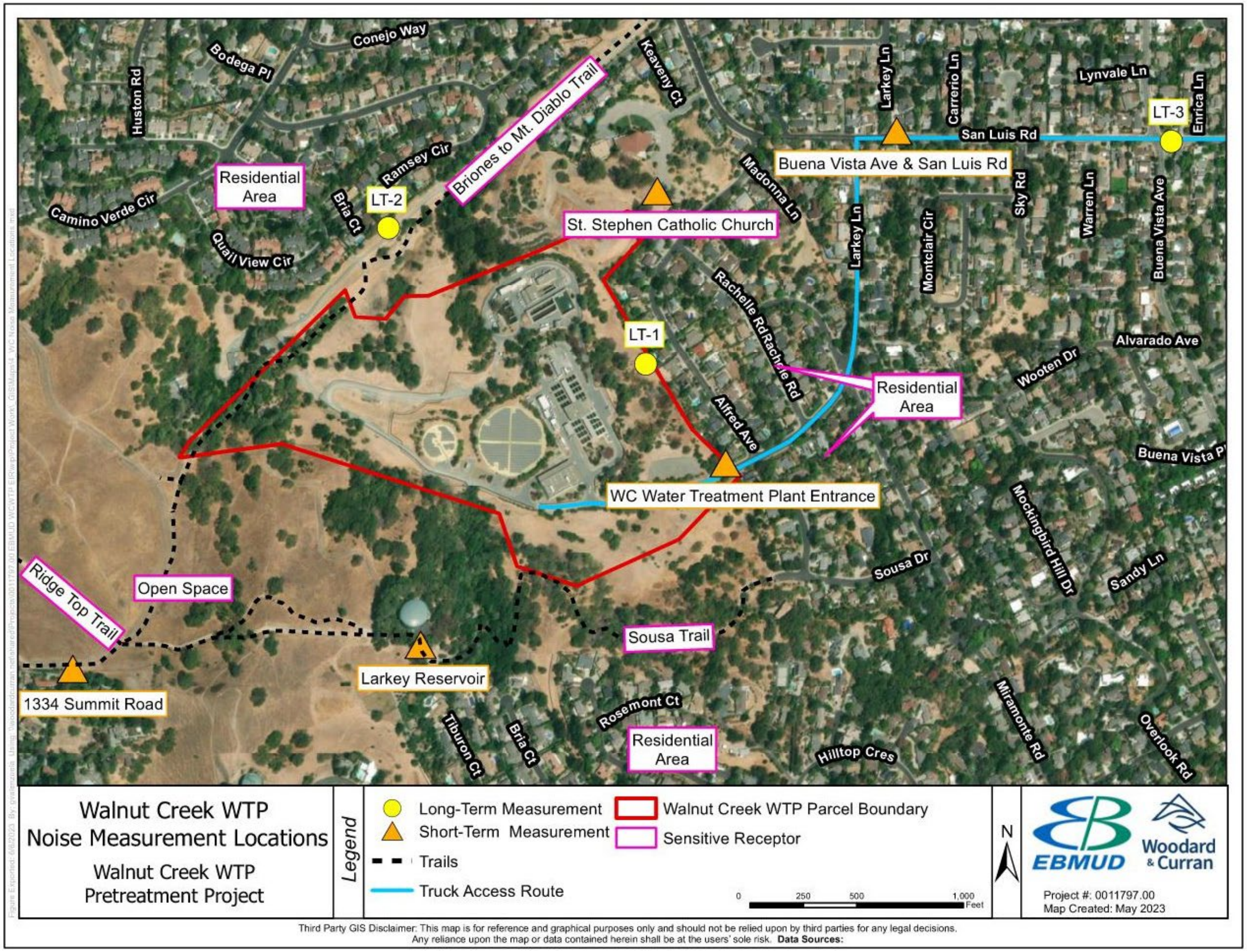


Figure 3.11-2: Lafayette Project Study Area Noise Measurement Locations and Sensitive Receptor Areas

Existing Noise Sources

Walnut Creek WTP

The land immediately around the Walnut Creek WTP site is primarily residential or open space use. Distant road traffic from I-680 is the predominant source of noise in the Walnut Creek WTP vicinity. The noise levels at each receptor vary with their distance relative to I-680 and other local roads such as San Luis Road. Some noise is generated at the existing water treatment plant facilities, including noise from daily truck traffic. Additionally, the existing topography shields many noise receptors from both the traffic noise and water treatment plant facilities.

Local roadways that contribute to the noise environment include San Luis Road and Larkey Lane. Roadways are described in detail in *Section 3.13, Transportation*.

Lafayette WTP

The Lafayette WTP site is immediately south of SR 24 and north of Mt. Diablo Boulevard. Road traffic from SR 24 and Mt. Diablo Boulevard are the predominant sources of noise in the Lafayette WTP vicinity, with the noise levels at each receptor varying with their distance relative to each road. Some noise is generated at the existing water treatment plant facilities, including noise from daily truck traffic. Additionally, the existing topography shields some of the noise receptors on the south side of Mt. Diablo Boulevard from the traffic noise and water treatment plant facilities.

Local roadways that contribute to the noise environment include Mt. Diablo Boulevard. Roadways are described in detail in *Section 3.13, Transportation*.

Existing Noise Levels

Existing noise levels in the vicinity of the Walnut Creek WTP and Lafayette WTP are described below. As there are no vibration sources of note, only the existing noise was documented.

Walnut Creek WTP

To characterize the existing noise environment in the Project vicinity at the Walnut Creek WTP, long-term noise measurements were taken between April 27, 2022, and May 3, 2022, at two locations near the Walnut Creek WTP (LT-1 and LT-2), and one location further northeast along the San Luis Road truck route (LT-3). These locations were adjacent to residential uses, and LT-2 was also adjacent to open space use. **Figure 3.11-1** shows the long-term noise measurement locations, while **Table 3.11-2** summarizes the results of the long-term noise measurements and the average hourly L_{eq}. Plots showing the daily variations are included in **Appendix I**. Location LT-1 represents the existing noise environment of the adjacent residences along Alfred Avenue and the eastern edge of the Walnut Creek WTP. Location LT-2 represents the existing noise environment of residential uses along Ramsay Circle, the Briones to Mt. Diablo Regional Trail, and the northern edge of the Walnut Creek WTP. Location LT-3 represents the existing noise environment of residences at the intersection of San Luis Road and Buena Vista Avenue.

Table 3.11-2: Ambient, Long-Term Noise Level Data

Measurement Location[1]	Measurement Dates (2022)	Noise Levels in dBA				
		Average Daytime (7:00 a.m. to 7:00 p.m.) Hourly L_{eq}	Average Evening (7:00 p.m. to 10:00 p.m.) Hourly L_{eq}	Average Nighttime (10:00 p.m. to 7:00 a.m.) Hourly L_{eq}	Range of L_{max}	Weekday Average L_{dn}
LT-1 Walnut Creek WTP Property behind 1085 Alfred Avenue[2]	04/27-05/03	47 (Typical Range 40-50)	42 (Typical Range 40-45)	43 (Typical Range 35-45)	54 - 83	50
LT-2 Briones to Mt. Diablo Regional Trail, behind 1305/1309 Ramsay Circle[3]	04/27-04/30	47 (Typical Range 40-50)	43 (Typical Range 40-45)	39 (Typical Range 35-45)	47 - 79	48
LT-3 San Luis Road & Buena Vista Avenue[4]	04/27-05/02	63 (Typical Range 55-65)	58 (Typical Range 55-60)	52 (Typical Range 40-55)	67 - 95	63
LT-4 Lafayette WTP Property Line near Temple Isaiah	12/14-12/21	52 (Typical Range 50-54)	52 (Typical Range 47-54)	50 (Typical Range 47-52)	60 - 85	57

Source: Wilson Ihrig, 2023

[1] See **Figure 3.11-1** and **Figure 3.11-2** for noise measurement locations. L_{eq} represents the constant sound level averaged over measurement period; L_{max} is the maximum instantaneous noise level. L_{dn} is 24-hour L_{eq}, where nighttime noise is weighted an additional 10 dBA.

[2] The noise logger was positioned on a tree 10 feet away from the 1085 Alfred Avenue property line.

[3] This noise logger was positioned on a utility pole approximately 100 feet away from the property lines of 1305 and 1309 Ramsay Circle.

[4] This location has direct line of site to San Luis Road and Buena Vista Avenue.

The daily noise levels summarized in **Table 3.11-2** include overall hourly average noise levels (L_{eq}) and the typical ranges for hourly average noise levels (L_{eq}). Noise levels are summarized for daytime hours (7:00 a.m. to 7:00 p.m.), evening hours (7:00 p.m. to 10:00 p.m.), and nighttime hours (10:00 p.m. to 7:00 a.m.). The range of maximum levels (L_{max}) and the average weekday L_{dn} are also shown in **Table 3.11-2.** In general, existing L_{dn} levels in the Walnut Creek WTP vicinity ranged from 48 to 63 dBA with higher noise levels occurring with closer proximity to roadways. Noise levels at the Walnut Creek WTP site also varied with elevation, distance, and the presence of topographic barriers such as hillsides and berms. The existing peak noise hour, when the noise levels were highest, typically occurred in the mornings between 7:00 a.m. and 11:00 a.m. at LT-1 and LT-3. The peak noise hour at LT-2 typically occurred in the afternoon between 2:00 p.m. and 6:00 p.m.

Additionally, short-term noise levels were monitored along roadways proposed as inbound and outbound truck routes (see **Figure 3.14-1** in *Section 3.13, Transportation*) and at further locations surrounding the Walnut Creek WTP. These short-term measurements were 15 to 20 minutes in duration and were used to validate the traffic noise model along the haul routes and at other noise sensitive areas. **Figure 3.11-1** also shows the short-term noise measurement locations, and **Table 3.11-3** summarizes the results of the short-term noise measurements.

Table 3.11-3: Short Term Noise Level Data

Site	Measurement Location	Measurement Date (2022)	Noise Levels in dBA L_{eq}[1]
WC	Walnut Creek WTP Entrance	4/27	55
WC	St. Stephen Catholic Church	4/27	46
WC	Buena Vista Avenue & San Luis Road	5/03	61
WC	Larkey Reservoir	4/27	49
WC	1334 Summit Road	4/27	54
LAF	Contra Costa Jewish Day School	12/14	49
LAF	Lafayette Reservoir near 3798 Mosswood Drive	12/14	55

Source: Wilson Ihrig, 2023
Note: WC = Walnut Creek WTP site, LAF = Lafayette WTP site
[1] Short-term measurements were 15-20 minutes in duration.

Lafayette WTP

For the Lafayette WTP, long-term noise measurements were taken between December 14, 2022 and December 21, 2022 at one location at the Lafayette WTP property line (LT-4). **Figure 3.11-2** shows the long-term noise measurement location, while **Table 3.11-2** summarizes the results of the measurement; plots showing the daily variations are included in **Appendix I**. Location LT-4 represents the existing noise environment at the adjacent Temple Isaiah of Contra Costa County synagogue.

The average daytime hourly noise levels are summarized in **Table 3.11-2**. The average existing L_{dn} level in the Project vicinity was 57 dBA. The peak noise hour, when the noise levels were highest, occurred at different hours of the day throughout the measurement, but most often occurring between 6:00 a.m. and 9:00 a.m. The peak noise hour was determined by traffic on Mt. Diablo Boulevard, local events at the Lafayette WTP, and aircraft flyovers.

Additionally, short-term noise levels were monitored at the Temple Isaiah property and at the Lafayette Reservoir behind residences at Mosswood Drive. These short-term measurements were 15 to 20 minutes in duration and were used to document existing conditions at nearby residences. **Figure 3.11-2** also shows the short-term noise measurement locations, and **Table 3.11-3** summarizes the results of the short-term noise measurements.

Sensitive Receptor Areas

Some land uses are generally regarded as being more sensitive to noise than others due to the types of population groups or activities involved. According to the Contra Costa County General Plan Noise Element (Contra Costa County, 2005), sensitive land uses generally include homes (residences), schools, hospitals, libraries, rest homes (elderly and nursing care facilities), and other similar facilities. As noted above, outdoor recreational areas and parks such as the Acalanes Ridge Open Space and Briones to Mt. Diablo Regional Trail are considered noise-sensitive land uses per the Walnut Creek General Plan. The Lafayette General Plan also identifies outdoor recreational areas and parks such as the Lafayette Reservoir Recreational Area to be noise sensitive. Since users are transitory, this analysis considers trails, open space, and picnic areas as marginally sensitive receptors akin to a commercial land use.

Figure 3.11-1 shows the locations of existing sensitive receptor areas surrounding the Walnut Creek WTP site, some of which are located as close as 250 to 300 feet to the Walnut Creek WTP site activities. Existing sensitive receptor areas include the following:

- Residences directly adjacent to the northwestern site boundary on Quail View Circle, Ramsay Circle, and Keaveny Court
- Residences directly adjacent to the eastern site boundary on Alfred Avenue
- Residences farther south on Rosemont Court, Bria Court, and Tiburon Court
- Briones to Mt. Diablo Regional Trail
- Sousa Trail to the southwest of the Walnut Creek WTP
- St. Stephen Catholic Church on Keaveny Court

Figure 3.11-2 shows the locations of existing sensitive receptor areas surrounding the Lafayette WTP site, some of which are located as close as 250 feet, which include the following:

- Contra Costa Jewish Day School
- Temple Isaiah of Contra Costa County
- Residential area on Mosswood Drive, south of Mt. Diablo Boulevard
- Lafayette Reservoir Recreational Area

3.11.2 Regulatory Framework

This section describes policies and regulations related to noise and vibration levels that may apply to the Project.

Federal Policies and Regulations

No federal standards related to noise are applicable to the Project. The Federal Noise Control Act of 1972 divides powers between federal, state, and local governments, in which the primary federal responsibility is for noise source emission control. State and local governments are responsible for controlling the operation of fixed noise sources (e.g., air conditioning and swimming pool equipment) and determining the levels of noise to be permitted in their environment (U.S. EPA, 1974).

State Policies and Regulations

State regulations include requirements for the construction of new hotels, motels, apartment houses, and dwellings other than detached single-family dwellings that are intended to limit the extent of noise transmitted into habitable spaces and are collectively known as the California Noise Insulation Standards and are found in Title 24 of the California Code of Regulations.

The State of California updated its Building Code requirements with respect to sound transmission, effective January 2014. Section 1207 of the California Building Code (Title 24 of the California Code of Regulations) establishes material requirements in terms of a sound transmission class (STC)[3] rating of 50 for all common interior walls and floor/ ceiling assemblies between adjacent dwelling units or between dwelling units and adjacent public area. It also sets an interior performance standard of 45 dBA from exterior noise sources.

Local Policies and Regulations

Local noise issues are addressed by assessing consistency with applicable noise ordinance standards or general plan guidelines (if there is no noise ordinance). Noise ordinances regulate such sources as stationary mechanical equipment and amplified sounds as well as prescribe hours of heavy equipment operation. Under Section 53091 of the California Government Code, EBMUD, as a local agency and utility district, is not subject to building and land use zoning ordinances for projects involving facilities for the production, generation, storage, treatment, or transmission of water. However, EBMUD's practice is to work with local jurisdictions and neighboring communities during project planning and to consider local environmental protection policies for guidance. As such, local noise regulations remain relevant to the Project and are discussed below.

Table 3.11-4 summarizes local limits and policies; more discussion is provided below.

City of Walnut Creek

General Plan

The Walnut Creek General Plan is a long-range policy document intended to guide decisions on future growth, development, and conservation of resources within the city. The Walnut Creek General Plan includes guiding goals and policies for noise applicable to the Walnut Creek WTP Project area. The Noise Element identifies a L_{dn} of 60 dBA or less as a "Normally Acceptable" environment compatible with residential land use, and a range of 60 to 75 L_{dn} as "Conditionally Acceptable" (see **Figure 3.11-3**). The General Plan does not establish separate daytime versus nighttime noise limits. The following goals, policies, and actions are relevant to the Walnut Creek WTP Project site.

GOAL 9: Control excessive noise sources in existing development.

> ***Policy 9.1.*** Control all residential and commercial noise sources to protect the existing noise environment.
>
> > *Action 9.1.1.* Require the evaluation of noise mitigation measures for projects that would cause a substantial increase in noise.
>
> ***Policy 9.2.*** Strive to reduce traffic noise levels in existing residential areas.
>
> > *Action 9.2.1.* Install quiet pavement surfaces for repaving projects, where feasible.
> >
> > *Action 9.2.2.* Control vehicle-related noise.

[3] The STC is used as a measure of a material's ability to reduce sound. The STC is equal to the number of decibels a sound is reduced as it passes through a material.

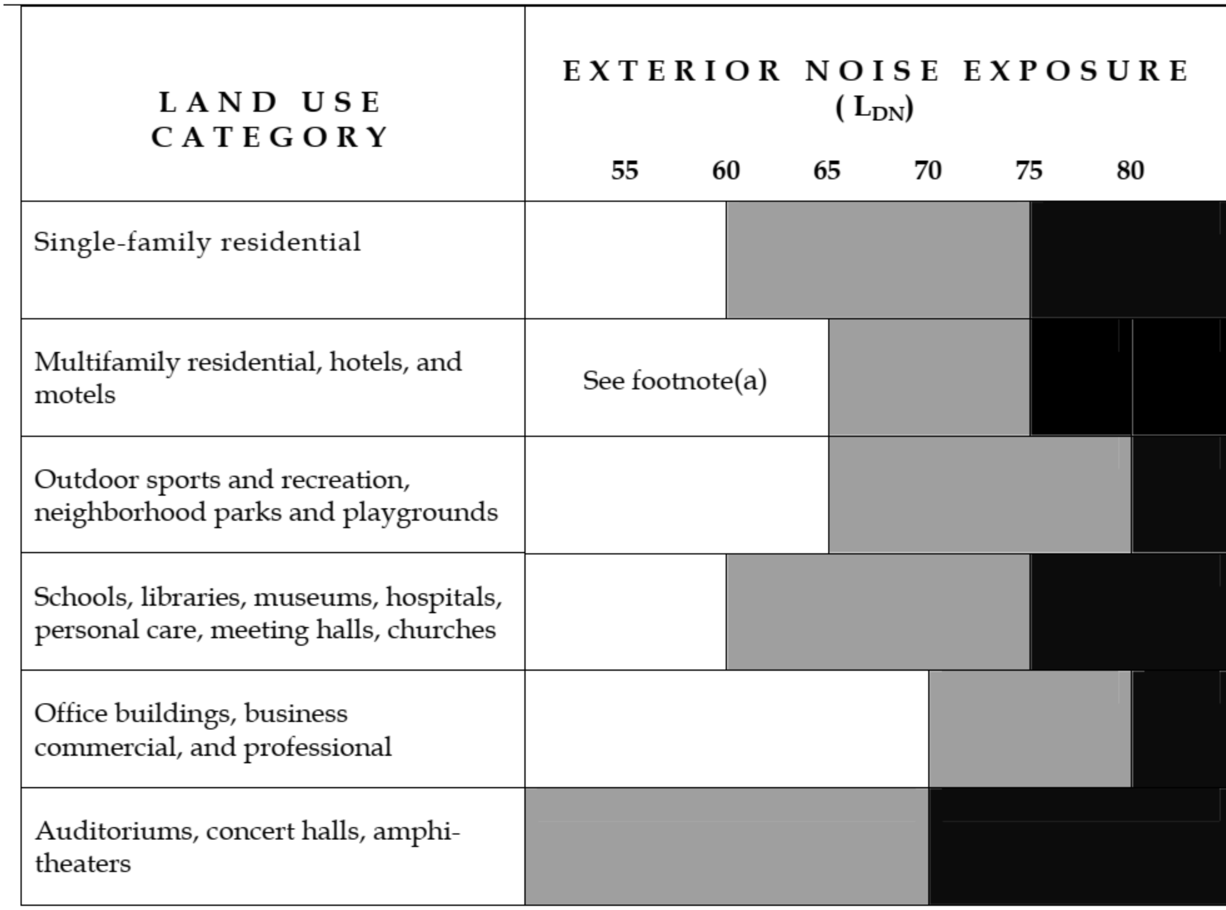
Table 3.11-4: Local Criteria

Noise Source	Criteria and Limits	Source
Construction – Walnut Creek	Limit construction to occur from 7:00 a.m. to 6:00 p.m. on weekdays where feasible	Walnut Creek Noise Ordinance
Operation – Walnut Creek	Residential land uses: 60 dBA L_{dn} normally acceptable Recreational land use: 65 dBA L_{dn} normally acceptable	Walnut Creek General Plan
Any – Lafayette	Substantial noise increase if the L_{dn} would increase by 3 dBA or more in residential areas or where project-generated traffic would exceed 60 L_{dn} at any residence	Lafayette General Plan
Construction – Lafayette	Limit construction to occur from 8:00 a.m. to 8:00 p.m. on weekdays Single-family residential: Limit noise levels to 54 dBA L_{eq} for time-varying[1] sources from 7:00 a.m. to 8:00 a.m. with additional adjustments allowed to account for ambient noise.[2] Multi-family residential, public spaces, and schools: limit noise levels to 59 dBA L_{eq} for time-varying sources with additional adjustments allowed to account for ambient noise. No individual piece of equipment should produce more than 83 dBA at a distance of 50 feet (unpermitted work)	Lafayette Noise Ordinance
Operation – Lafayette	Residential land uses: 55 dBA L_{dn} normally acceptable; 60 dBA L_{dn} conditionally acceptable Recreational land use: 65 dBA L_{dn} normally acceptable Single-family residential: Limit constant Outdoor noise from source to 50 dBA from 7:00 a.m. to 10:00 p.m. or time-varying source[1] to 54 dBA $L_{eq;}$ and 45 dBA from 10:00 p.m. to 7:00 a.m. for constant sources or 49 dBA L_{eq} for time-varying sources, with adjustments allowed to account for ambient noise[2]. Multi-family residential: from 7:00 a.m. to 10:00 p.m. the noise limits are 55 dBA or 59 dBA L_{eq}, for constant and time-varying sources respectively; from 10:00 p.m. to 7:00 a.m. the noise limits are 50 dBA or 54 dBA L_{eq}, for constant and time-varying noises respectively	Lafayette General Plan; Lafayette Noise Ordinance

[1] Calculated from time-based noise limits identified in Municipal Code 5-205(b)

[2] With ambient-based adjustment per Municipal Code 5-205(c) the noise limit is 55 dBA L_{eq} for nighttime periods or 60 dBA L_{eq} for daytime periods. See also discussion in *Section 3.11.3*.

Figure 3.11-3: Walnut Creek Noise Element (Figure 8)



(a) Require noise mitigation to reduce interior noise levels pursuant to Actions 8.2.3. and 8.2.4.

NORMALLY ACCEPTABLE Specified land use is satisfactory, based on the assumption that any buildings involved are of normal conventional construction, without any special insulation requirements.

CONDITIONALLY ACCEPTABLE Specified land use may be permitted only after detailed analysis of the noise reduction requirements.

UNACCEPTABLE New construction or development should not be undertaken because mitigation to comply with noise element policies is unfeasible.

Source: *General Plan Guidelines*, Office of Planning and Research, Appendix C, Noise Element Guidelines; 2003 and Illingworth & Rodkin.

Walnut Creek Noise Ordinance

The City of Walnut Creek's Noise Ordinance can be found in Chapter 6, Article 2 of the Municipal Code and contains no quantified noise limits. The Noise Ordinance limits the permissible hours of noise-producing construction activities to non-holiday weekdays from 7:00 a.m. to 6:00 p.m.; construction activities are not permitted outside of these hours unless an exemption is permitted by the Chief of Code Enforcement or by the City Engineer.

City of Lafayette

General Plan

The Noise Element of the City of Lafayette's General Plan (p. VII-10) sets forth several policies and programs to assess and control environmental noise. The Lafayette General Plan policies and programs establish indoor and outdoor noise standards for residential and other urban land uses. The Noise Element includes land use and noise compatibility standards (presented in **Table 3.11-4**) and indicates what noise environments are considered acceptable for a range of urban land uses. For example, ambient noise levels of up to 55 dBA (L_{dn}) are considered "normally acceptable" for residential uses, while ambient noise levels ranging from 55 dBA (L_{dn}) to 75 dBA (L_{dn}) are considered "conditionally acceptable" for residential uses.

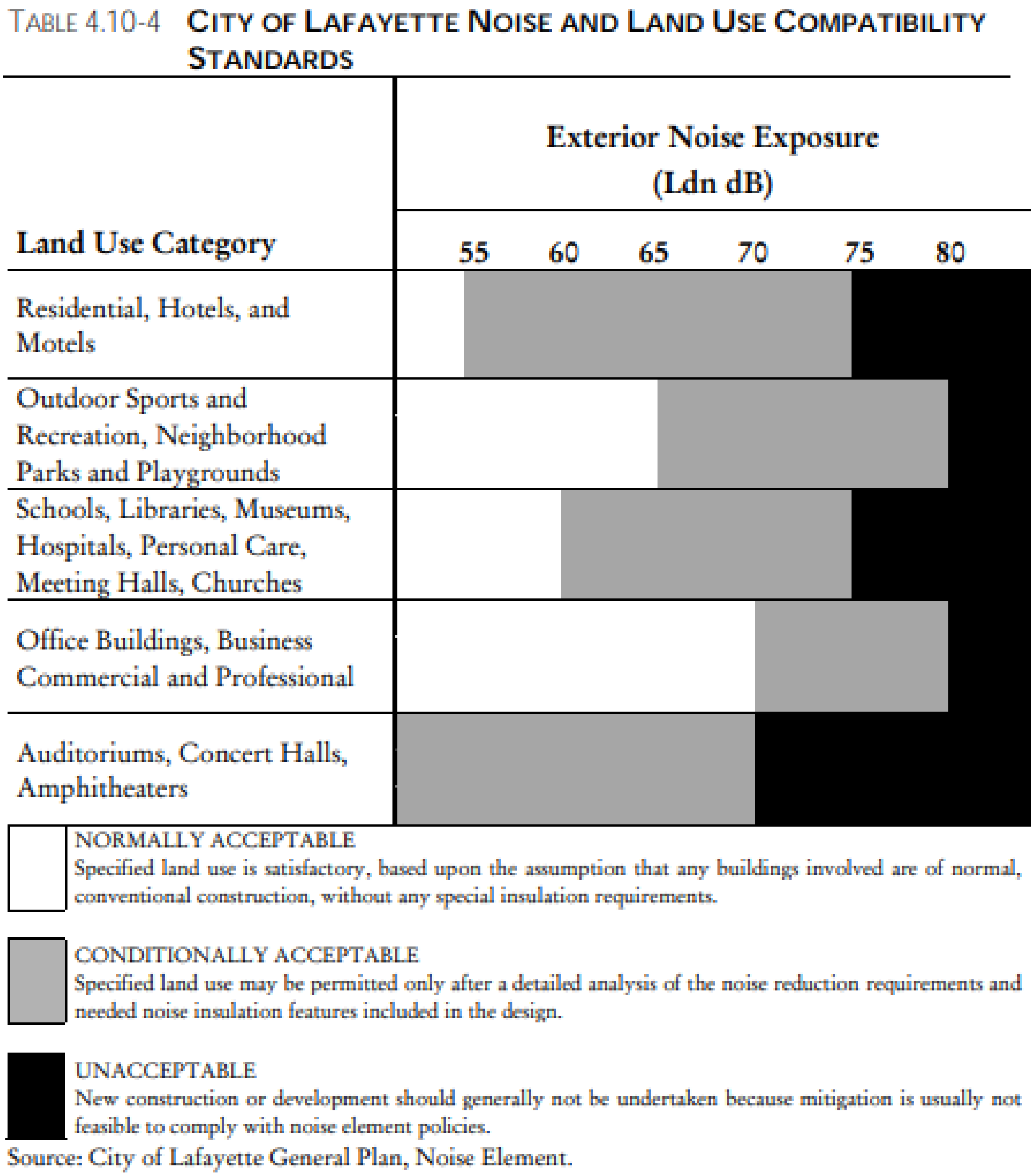
In evaluating new development, the Lafayette Noise Element considers that projects would cause a "substantial increase" in noise if the L_{dn} would increase by 3 dBA or more in residential areas or where project-generated traffic would exceed 60 L_{dn} at any residence.

Municipal Code

The Lafayette Municipal Code (Chapter 5-2) contains Lafayette's Noise Ordinance. The Noise Ordinance is designed to control unnecessary, excessive, and annoying sounds from sources on private property by setting limits that cannot be exceeded at adjacent properties. Lafayette's Noise Ordinance specifies noise limits at property boundaries and the limits apply to fixed noise sources such as air conditioners and pool equipment.

Lafayette's Noise Ordinance also limits the hours of permitted construction activities to the hours of 8:00 a.m. to 8:00 p.m. Monday through Saturday, and between 10:00 a.m. to 6:00 p.m. on Sundays and legal holidays, provided that such construction activities do not exceed 80 dBA at the nearest affected property or individual equipment items do not exceed 83 dBA at 50 feet (Section 5-208[d]). For any construction noise occurring outside these hours, Lafayette's outdoor noise limits specified in Section 5-205 are applicable. Therefore, on weekdays from 7:00 a.m. to 10:00 p.m., Section 5-205 stipulates that at single-family residences noise must not exceed 50 dBA more than 30 minutes in any hour, 55 dBA more than 15 minutes in any hour, 60 dBA more than 5 minutes in any hour, 65 dBA more than 1 minute in any hour, and 70 dBA for any period of time. From 10:00 p.m. to 7:00 a.m., these limits are reduced by 5 dBA. These time-based noise limits convert to an equivalent L_{eq} noise limit of 54 dBA between 7:00 a.m. and 10:00 p.m. and 49 dBA between 10:00 p.m. and 7:00 a.m. At multi-family residences, schools, and public spaces the corresponding time-based noise limits are 59 dBA L_{eq} between 7:00 a.m. and 10:00 p.m. and 54 dBA L_{eq} from 10:00 p.m. to 7:00 a.m. If the existing ambient noise level exceeds these standards, the allowable noise exposure standard shall be increased at 5 dB increments as appropriate to reflect the ambient noise level. As further discussed below in *Section 3.11.3*, since the ambient conditions exceed the basic Noise Ordinance limits, the values shown in **Table 3.11-4** take into account the local ambient conditions.

Figure 3.11-4: Lafayette Noise Element (Figure 1)



Source: The Terraces of Lafayette EIR, Chapter 4.10

EBMUD Procedure 600

EBMUD Procedure 600, Public Outreach and Community Relations, ensures residents are provided advance notice of potentially disruptive construction activities including geographical extent of activity and estimated duration of the activity. The procedure also provides mechanisms for customers and the public to get concerns and questions addressed. Specifically, Procedure 600 requires notifying residents at least seven days (and preferably fourteen days) in advance of potentially disruptive construction activities (e.g., noise, traffic, parking); notifications include the activities' geographical extent and estimated duration. Procedure 600 requires the Public Affairs liaison to coordinate with the project manager/engineer and any contractors to provide advance notification via email, mailed notices, door-hangers, social media, or other means, as appropriate.

EBMUD Standard Construction Specifications

EBMUD's Standard Construction Specifications and Procedures apply to all contractors completing work for EBMUD, and to work completed by EBMUD staff. The following EBMUD practices and procedures are applicable to noise.

- **EBMUD Standard Construction Specification 01 14 00, Work Restrictions**

  EBMUD Standard Construction Specification 01 14 00, Section 1.7(A) requires that noise-generating activities greater than 90 dBA (impact construction such as concrete breaking, concrete crushing, tree grinding, etc.) shall be limited to the hours specified by the applicable local ordinance (EBMUD, 2021).[4]

- **EBMUD Standard Construction Specification 01 35 44, Environmental Requirements**

  EBMUD Standard Construction Specification 01 35 44 (Environmental Requirements) sets forth the contract requirements for environmental compliance to which construction crews must adhere, including practices and procedures for reducing noise and vibration impacts, as described below (EBMUD, 2023):

  - **Noise Control and Monitoring Plan.** EBMUD Standard Construction Specification 01 35 44, Section 1.4(G) requires that the contractor submit a plan detailing the means and methods for controlling and monitoring noise generated by construction activities, including demolition, alteration, repair or remodeling of or to existing structures and construction of new structures, as well as by items of machinery, equipment, or devices used during construction activities on the site for the Engineer's acceptance prior to any work at the jobsite. The plan shall detail the equipment and methods used to monitor compliance with the plan.
  - **Vibration Control and Monitoring Plan.** EBMUD Standard Construction Specification 01 35 44, Section 1.4(H) requires that the contractor submit a plan detailing the means and methods for controlling and monitoring surface vibration generated by demolition and other work on the site for the Engineer's acceptance prior to any work at the jobsite. The plan shall detail the equipment and methods used to monitor compliance with the plan.

[4] Note that EBMUD Standard Specification 01 14 00 Section 1.7(A) incorporates limits on hours of construction from the applicable jurisdiction for each project, in this case, the cities of Walnut Creek and Lafayette.

- **Noise Control.** EBMUD Standard Construction Specification 01 35 44, Section 3.8 requires noise controls on site activities and describes measures that shall be implemented to reduce the potential for noise disturbance at adjacent or nearby residences.

  Noise control measures required by the specification include:

  - Take appropriate measures, including muffling of equipment, selecting quieter equipment, erecting noise barriers, modifying work operations, and other measures as needed to bring construction noise into compliance. Noise-generating activities shall be limited to the hours specified in Section 01 14 00.
  - Each internal combustion engine, used for any purpose on the job or related to the job, shall be equipped with a muffler of a type recommended by the manufacturer.
  - Use the best available noise control techniques (including mufflers, intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds) shall be used for all equipment and trucks, as necessary.
  - Stationary noise sources (e.g., chippers, grinders, compressors) shall be located as far from sensitive receptors as possible. Enclosure opening or venting shall face away from sensitive receptors. Enclosures shall be designed by a registered engineer regularly involved in noise control analysis and design.
  - If impact equipment (e.g., jack hammers, pavement breakers, and rock drills) is used, Contractor is responsible for taking appropriate measures, including but not limited to the following:
    - Hydraulically or electric-powered equipment shall be used wherever feasible to avoid the noise associated with compressed-air exhaust from pneumatically powered tools. However, where use of pneumatically powered tools is unavoidable, an exhaust muffler on the compressed-air exhaust shall be used. External jackets on the tools themselves shall be used, where feasible. Quieter procedures, such as drilling rather than impact equipment, shall be used whenever feasible. It is the Contractor's responsibility to implement any mitigations necessary to meet applicable noise requirements.
    - Impact construction including jackhammers, hydraulic backhoe, concrete crushing/recycling activities, vibratory pile drivers will be limited to the daytime hours specified in Section 01 14 00.
    - Limit the noisiest phases of construction to 10 workdays at a time, where feasible.
    - Notify neighbors/occupants within 300-feet of project construction at least thirty days in advance of extreme noise-generating activities about the estimated duration of the activity.

- Noise monitoring shall be conducted periodically during noise-generating activities. Monitoring shall be conducted using a precision sound-level meter that is in conformance with the American National Standards Institute Standard S1.4, Specification for Sound Level Meters. Monitoring results shall be submitted weekly to the Engineer.

- **Vibration Controls.** EBMUD Standard Construction Specification 01 35 44, Section 3.7 requires vibration controls on site activities and describes measures that shall be implemented to reduce the potential for cosmetic damage to adjacent or nearby structures. Vibration control measures required by the specification include:
  - Limit surface vibration to no more than 0.5 in/sec PPV, measured at the nearest residence or other sensitive structure.

3.11.3 Impact Analysis

Methodology for Analysis

Potential impacts related to noise and vibration are analyzed based on the potential for the Project to result in substantial changes in the noise environment during construction or operation. The estimated noise during construction was compared to speech interference and sleep interference indictors. The estimated vibration during construction was compared to building damage and annoyance criteria. Existing site conditions prior to construction of the Project are compared to site conditions both during construction activities and after the Project facilities are operational. Where long-term noise measurements were not made, the existing conditions were extrapolated using short-term noise measurements or results from a nearby measurement.

Noise Analysis

Project construction would result in temporary noise increases in the vicinity of the Walnut Creek WTP and Lafayette WTP sites, and new mechanical and electrical equipment has the potential to increase operational noise levels at the Walnut Creek WTP site. The noise impact assessment evaluates temporary impacts associated with the construction activities and long-term operational noise levels. For Criterion 1 below, the determination of impact significance for noise takes into account the combined construction noise from the simultaneous use of on-site equipment and trucks, long-term combined operational noise from equipment, noise thresholds discussed below, proximity of noise-sensitive uses, and the potential duration that sensitive receptors would be subjected to noise.

The Walnut Creek WTP improvements would be constructed in two different phases (Phases 1 and 2) separated by an unknown time gap, as described in the Project Description and shown in **Figure 2-3**. Each Phase would progress through several construction stages to build each facility with multiple stages occurring concurrently across the site. To assess potential construction noise impacts, the various construction stages were combined to develop six different construction period scenarios of concurrent, overlapping activities, which are listed in **Table 3.11-5** with key stages, or activities, identified. Scenarios 1.A, 1.B, 1.C and 1.D would occur in Phase 1 and scenarios 2.A and 2.B would occur in Phase 2. These scenarios of overlapping activities are snapshots of periods during which the highest levels of noise-generating activities would occur,[5]

[5] The duration periods shown in the table are not intended to sum up to the total construction duration.

and each scenario would typically have a duration of approximately one to five months, with the exception that scenario 1.D could extend over approximately 8 months.

Two operational scenarios, Phase 1 Completed and Project Completed, were developed to assess the potential operational noise impacts after the construction of Phase 1 and Phase 2, respectively, as outlined in **Table 3.11-5**. The noise analysis identifies the maximum noise that could be generated during each scenario. A complete list of stages and equipment included in each scenario is included in **Appendix I**.

Table 3.11-5: Walnut Creek WTP Site Noise Analysis Scenarios

Scenario Label[2]	Approximate Duration	Key Conditions		
CONSTRUCTION (With Overlapping Construction Stages[1])				
1.A	1 month	Phase 1 Site preparation and mobilization		
1.B	5 months	Gravity Thickeners (North)	Electrical Facilities	Solids Dewatering Building
1.C	1 month	Scenario B +	Ballasted Flocculation (North)	Hydrogen Peroxide Station
1.D	8 months	Scenario C +	Solids XFER PP (Transfer Pumping Plant)	
2.A	2 months	Gravity Thickeners (South)	Ballasted Flocculation (South)	Pre-Ozone Pumping Plant (West)
2.B	3 months	Gravity Thickeners (South)	Ballasted Flocculation (South)	Off-haul excavation spoil
OPERATION				
Phase 1 Completed	N/A	(All Phase 1 facilities completed) – no construction activities		
Project Completed	N/A	(All Phase 1 and Phase 2 facilities completed) – no construction activities		

[1] Detailed list of overlapping stages included in each scenario is included in **Appendix I**.
[2] Construction scenarios of overlapping activities are snapshots of periods during which the highest levels of noise-generating activities would occur. The duration periods shown in the table are not intended to sum up to the total construction duration.

The Project at the Lafayette WTP would occur during Phase 1 at the Walnut Creek WTP and require three stages: demolition of Lafayette Weir No. 1, construction to raise the height of Lafayette Weir No. 2, and construction of a new Lafayette Weir No. 1 approximately 250 feet to the east (southeast), as shown in **Figure 2-4**.

EBMUD Standard Construction Specifications are included in the noise analysis and include time limits and siting stationary sources at the far side of work areas away from noise sensitive receptors. Most of the specification requirements include noise management best practices and do not provide specific noise limits or noise reduction values.

Construction On-site Noise

The on-site noise from the construction and operational scenarios at the Walnut Creek WTP was modeled using noise prediction software[6]. Because existing topography shields many noise

[6] Datakustik CadnaA® Version 2021 MR1

receptors from the Walnut Creek WTP site and there will be operational and construction noise located at different parts of the site, the Walnut Creek WTP site and surrounding area were modeled in 3 dimensions, including construction access roads, on-site buildings, and existing and future topography. Each scenario accounts for trucks along the haul route and equipment corresponding to each construction activity in their respective work areas. Per Federal Highway Administration (FHWA) noise modeling methodology, “heavy trucks” generally encompasses all trucks with 3 or more axles. As many as 13 heavy trucks could be circulating on-site per hour during peak activity periods: two delivery trucks, four concrete trucks, and seven heavy trucks transporting materials around the construction site.

Because construction and operational noise at the Lafayette WTP is small and confined to a more limited area and the site is more level than the Walnut Creek WTP, the site and surrounding area were modeled in 2 dimensions that did not account for topography.

For both sites, sensitive noise receptors were modeled at residential areas nearest the Project sites. For modeling purposes, the dominant noise-generating pieces of equipment associated with each stage were assumed to operate in the same hour to determine the maximum noise hour. Construction typically would occur between 7:00 a.m. and 6:00 p.m., Monday through Friday, and typically would include 8-hour workdays. The full list of equipment for each scenario and construction activity is provided in **Appendix I**.

The FHWA Roadway Construction Noise Model v. 2.0 establishes standard noise levels to be used for modeling construction equipment. The values for each piece of equipment modeled at the Project sites are listed in **Table 3.11-6**. The noise levels from haul trucks (dump trucks) were modeled using the FHWA RCNM model value.

Table 3.11-6: Typical Construction Equipment Noise Levels

Equipment	Sound Level[1] at 50 feet (dBA)	Site
Backhoe	74 L_{eq}	WC
Bobcat (skidsteer)	69 L_{eq}	WC, LAF
Compactor[2]	80 L_{max}	WC, LAF
Compressor	63 L_{eq}	WC, LAF
Concrete (mixer truck, pump truck)	88 L_{eq}	WC, LAF
Crane	72 L_{eq}	WC, LAF
Dozer	79 L_{eq}	WC
Haul truck (Dump Truck)	81 L_{eq}	WC, LAF
Excavator	74 L_{eq}	WC, LAF
Forklift	69 L_{eq}	WC, LAF
Form Builder (pneumatic nailer)	70 L_{eq}	WC, LAF
Hoeram	93 L_{eq}	WC
Loader	74 L_{eq}	WC, LAF
Rooftop	74 L_{eq}	WC
Welding	71 L_{eq}	WC

Note: WC = Walnut Creek WTP site, LAF = Lafayette WTP site
Source: FHWA, 2018
[1] Unless noted, these values are shown as L_{eq}, obtained from the FHWA RCNM 2.0 model database. These L_{eq} values are inclusive of the cycling and time-varying range of noise levels, and equipment is assumed to have standard mufflers installed and to be in good working order. Further detail regarding scenarios and number of equipment is included in **Appendix I**.
[2] RCNM does not provide an L_{eq} for this equipment, and the L_{max} value is shown instead; it is conservatively modeled assuming constant use.

Operational On-site Noise

For operational noise at the Walnut Creek WTP, the new noise sources were modeled based upon the following new noise sources:

- Pumps and motors within pumping plant buildings: 28 to 58 dBA at 50 feet (pre-ozone pumping plant, intermediate ozone pumping plant, thickened solids pumping plant, and solids transfer pumping plant);
- Electrical transformers: 48 dBA at 3 feet;
- Ballasted flocculation basins (Actiflo): 53 dBA at 100 feet;

The specific pump manufacturer and models have not been identified for the pumping plants; therefore, the analysis is based on noise data collected from pumps with similar power and speed ratings. Each pump is expected to produce a sound level of approximately 86 dBA at 3 feet in a non-reverberant, open air, environment (Hoover & Keith, 1996). The pumps at the new pumping plants would be located inside a new building. Based on the consideration of a typical reverberant noise buildup within the building interior, the calculated sound level for one pump operating within each pumping plant is approximately 90 dBA at 3 feet and approximately 88 dBA at the inside face of the building perimeter. It is expected that each pumping plant building would be equipped with no more than three pumps in simultaneous operation at any given time. The simultaneous operation of three pumps would result in a total noise level of approximately

93 dBA at the inside face of the pumping plant building perimeter. Considering these interior levels, the noise level for three pumps operating inside of the enclosed pumping plant would be approximately 58 dBA at a distance of 50 feet from the building on the side with an open (non-acoustically rated) louver, and approximately 28 dBA L_{eq} at a distance of 50 feet on the side of the building without any openings[7] (Illingworth & Rodkin and Panorama Environmental, 2021). The noise level from openings can be reduced by using acoustical louvers, which can provide the necessary ventilation while reducing noise by 9 to 21 dB at the 1,000 Hz octave band. (IAC, 2023). The pumping plant building designs include acoustical louvers on two of the four walls and no openings would be located on the walls facing the nearest sensitive receptor.

The transformer noise level is based on short term measurements taken of an existing EBMUD transformer, which generates a steady noise level of 48 dBA L_{eq} at 3 feet from the equipment (Illingworth & Rodkin and Panorama Environmental, 2021). The ballasted flocculation noise level is based on short term measurements conducted by EBMUD at two existing water treatment plants in California with a ballasted flocculation process (EBMUD, 2015).

No new operational noise sources would be added at the Lafayette WTP.

Construction Off-site Noise

The FHWA Traffic Noise Model (TNM) provides a standard for modeling the noise from traffic, including heavy trucks. Traffic noise is commonly modeled during the peak noise hour because most traffic noise studies focus on the noise generated during the periods of highest noise generation which often occur at or near the times of peak traffic volume. To validate the traffic noise model for the existing condition with the TNM 3.1® software the traffic noise was measured at five road segments along the Walnut Creek WTP site haul route (see also **Appendix I)** and compared with the modeled results. To determine noise impact, noise from Project trucks was modeled during the AM peak hour and the early morning period. The effect of Project trucks on the total noise level during a mid-day period would be the same or less than these morning periods.

For the Lafayette WTP site, the average construction truck volume would be very low with peak construction truck trips up to four heavy trucks per hour during concrete pour days. Based on noise modeling, the low truck volume for the Lafayette WTP site would increase the total traffic noise by less than 1 dBA. No further analysis of the Lafayette WTP site off-site noise has been conducted.

Vibration Analysis

The impact significance for vibration (Criterion 2 below) evaluates the potential for construction to result in excessive groundborne vibration or groundborne noise.

Groundborne noise is generally associated with unique construction activities such as blasting or tunneling, neither of which are included in the Project. Groundborne noise is not described further because any potential groundborne noise from construction activities would be imperceptible because environmental vibration is rarely of sufficient magnitude to be perceptible or cause audible groundborne noise unless there is a specific vibration source close by, such as rail transit line (Caltrans, 2020); therefore, no impacts related to groundborne noise would occur.

[7] Extrapolated from study that evaluated two pumps.

Vibration levels are highest closest to the source, and then attenuate with increasing distance and can vary depending on subsoils. **Table 3.11-7** lists reference vibration levels at 25 feet associated with the operation of various types of construction equipment proposed to be used for the Project. The analysis of groundborne vibration impacts uses standard analytical methodologies, such as estimating vibration levels at sensitive receptors for a given vibration source and setback distance, comparing the estimated vibration levels with recommended limits or significance thresholds, determining potential significant impacts on nearby sensitive receptors, and providing mitigation where applicable. Vibration attenuation, and the PPV can be estimated with the following equation:

$$\mathbf{PPV_{(distance)} = PPV_{(ref)}(25/D)^n} \qquad \textbf{Equation 1}$$

Where

$PPV_{(distance)}$	= PPV at distance D
$PPV_{(ref)}$	= PPV at reference distance (25 feet)
D	= distance for calculation (feet)
n	= rate of attenuation, ranging from 1 to 1.5

Per Caltrans, the value of "n" in Equation 1 should be 1.3 for Soil Class II that can be excavated with a shovel, such as competent soils: most sands, sandy clays, silty clays, gravel, silts and weathered rock. For soils that require impact or hammer methods to break up, "n" should be 1.1 (Caltrans, 2020).

Table 3.11-7: Equipment Source Vibration

Equipment	PPV at 25 feet (in/sec)
Vibratory Compactor (Roller)	0.210
Large Bulldozer	0.089
Loaded trucks	0.076
Small Bulldozer	0.003

Source: Caltrans, 2020

Heavy equipment vibration impacts are considered significant if vibration levels would damage nearby structures or buildings (as indicated in **Table 3.11-8**), or if vibration levels exceed Caltrans's groundborne vibration impact criteria for human annoyance (presented in **Table 3.11-9**). Heavy equipment vibration impacts would also be considered significant if vibrations cause sleep disturbance during nighttime hours. Because Project construction and operation would only occur during daytime hours, sleep disturbance has not been considered further.

Table 3.11-8: Caltrans Groundborne Vibration Guideline Criteria for Building Damage

Building Category	PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Source: Caltrans, 2020

Table 3.11-9: Caltrans Groundborne Vibration Guideline Criteria for Annoyance

Human Response	PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.10
Severe	2.0	0.4

Source: Caltrans, 2020

Significance Criteria

Consistent with Appendix G of the *CEQA Guidelines*, an impact would be considered significant if the Project would:

1. Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
2. Generate excessive groundborne vibration or groundborne noise levels.
3. For a project in 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, expose people residing or working in the project area to excessive noise levels.

Noise Thresholds

Walnut Creek

As described above, the City of Walnut Creek noise ordinance does not contain quantified noise limits applicable to construction although it states that construction activities are limited to weekdays between the hours of 7:00 a.m. and 6:00 p.m. It is EBMUD's practice is to consider local environmental protection policies for guidance, however as Walnut Creek does not provide any noise limits, the estimated noise during construction was compared to speech interference and sleep interference indicators as described under Methodology for Analysis above. Because the City of Walnut Creek does not impose specific limits on daytime construction noise, the Project's construction noise impacts are compared to the hourly speech interference indicator of 70 dBA L_{eq} to provide a reference point for the analysis. For nighttime construction noise (i.e., early morning concrete pour activities), a significant impact would occur if noise levels exceed the sleep interference indicator of 60 dBA L_{eq} at a receptor location outside the hours of 7:00 a.m. to 6:00 p.m. on weekdays (**Table 3.11-10**).

For long-term operational noise, the Walnut Creek General Plan identifies a L_{dn} of 60 dBA or less as "Normally Acceptable" environment compatible with residential land use, and a range of 60 to 75 L_{dn} as "Conditionally Acceptable." Since the L_{dn} is a 24-hour metric, the Walnut Creek General Plan does not identify a separate threshold for daytime versus nighttime noise. The Walnut Creek Noise Element identifies that "substantial" noise increases require mitigation per Action 9.1.1. The Walnut Creek General Plan does not define a numerical threshold for a "substantial" noise increase. As described in *Section 3.11.1, Environmental Setting*, a 3-dBA change is considered perceptible, and a 5-dBA change is readily noticeable. For the purposes of evaluating Project operational noise, a 3-dBA change would be considered substantial. Therefore, long-term operational noise in Walnut Creek would be considered potentially significant if it caused ambient noise in a residential area to increase above 60 dBA L_{dn}, or by 3 dBA or greater at a receptor location (**Table 3.11-10**).

Lafayette

The City of Lafayette noise ordinance establishes allowable hours of construction activities. The noise ordinance allows construction between 8:00 a.m. and 8:00 p.m. on weekdays, and between 10:00 a.m. and 6:00 p.m. on weekends and holidays, provided that no individual piece of equipment produces a noise level exceeding 83 dBA at a distance of 50 feet, and provided that the noise level at the nearest affected property does not exceed 80 dBA. It is EBMUD's practice is to consider local environmental protection policies for guidance; therefore, for the purposes of evaluating Project construction noise at the Lafayette WTP, the applicable hours of operation and noise limits would be used to determine whether noise impacts would be potentially significant (**Table 3.11-10**). Construction noise impacts would be considered potentially significant if noise in excess of residential noise limits occurred at the Lafayette WTP outside the hours of 8:00 a.m. to 8:00 p.m. on weekdays.

The Lafayette noise ordinance sets separate limits for single-family residential areas and multi-family residential areas, schools and public spaces:

- For single-family residential areas: the standard for daytime noise (7:00 a.m. to 10:00 p.m.) is 50 dBA for noise occurring at least 30 minutes in an hour, and the standard for nighttime noise (10:00 p.m. to 7:00 a.m.) is 45 dBA for noise occurring for at least 30 minutes in an hour. The noise ordinance allows adjustment of these thresholds in 5 dBA increments in cases where the local background noise already exceeds the noise standard. The ordinance also allows higher levels for noises occurring for shorter time durations in an hour. An equivalent level for the ordinance incorporating a time-varying sound was calculated, and it corresponds to 54 dBA L_{eq} (day) and 49 dBA L_{eq} (night) in an hour. For construction noise occurring between 7:00 a.m. and 8:00 a.m., because existing ambient baseline noise levels in the Lafayette WTP vicinity are already above 50 dBA (discussed further under Impact NOI-1), a significance threshold of 60 dBA L_{eq} would be applied to areas where the ambient noise is between 55 and 60 dBA L_{eq}.

Table 3.11-10: Evaluation Criteria and Indicators [1]

Assessment	Criterion or Indicator	Source
Construction – Walnut Creek	Criterion: Prior to 7:00 a.m. noise that exceeds the 60 dBA L_{eq} level for sleep interference would be significant unless the noise environment already exceeds 60 dBA and increase would be 3 dBA or less over the existing environment Indicator: 7:00 a.m. to 6:00 p.m. noise that exceeds 70 dBA L_{eq} speech interference indicator for substantial periods of time	Walnut Creek; U.S. EPA U.S. EPA
Operation – Walnut Creek	Criteria: Residential land uses: 60 dBA L_{dn} or "substantial" noise increase (considered to be 3 dBA for this analysis) Recreational land use: 65 dBA L_{dn} or "substantial" noise increase (considered to be 3 dBA for this analysis)	Adapted from Walnut Creek General Plan
Construction – Lafayette	Criteria: From 8:00 a.m. to 8:00 p.m. noise levels greater than 60 dBA L_{eq}[2] would be potentially significant at single-family residential receptors where the existing noise is 55 to 60; at multi-family residences, public areas (parks), and schools noise levels that exceed 59 dBA L_{eq} would be potentially significant. Indicator: 8:00 a.m. to 8:00 p.m. noise that exceeds 70 dBA L_{eq} speech interference indicator for substantial periods of time	Lafayette; U.S. EPA Adapted from Lafayette Noise Ordinance
Operation – Lafayette	Criteria: Residential land uses: 60 dBA L_{dn} or "substantial" noise increase (considered to be 3 dBA for this analysis) Recreational land use: 65 dBA L_{dn} or "substantial" noise increase (considered to be 3 dBA for this analysis)	Adapted from Lafayette General Plan[3,4]
Building vibration damage from on-site activities	Vibration that exceeds these criteria would be significant 0.5 in/sec PPV (transient); 0.3 in/sec PPV (continuous/intermittent)	Caltrans
Potential vibration annoyance from on-site activities (distinctly perceptible)	0.25 in/sec PPV (transient); 0.04 in/sec PPV (continuous/intermittent)	Caltrans

[1] Criteria are based on regulatory standards officially established in either noise ordinance or General Plan; indicators are not formal standards and are addressed to provide information about when speech interference or sleep interference could occur.
[2] With ambient-based adjustment per Municipal Code 5-205(c) the noise limit at single-family residences is 55 dBA L_{eq} for nighttime periods (10:00 p.m. to 7:00 a.m.) or 60 dBA L_{eq} for daytime periods (7:00 a.m. to 10:00 p.m.).
[3] On a 24-hour basis the Noise Ordinance limits would equate to 63 dBA L_{dn} which is higher than the residential land use compatibility guidance. Thus, only the General Plan guidance is used.
[4] The Lafayette General Plan identifies a 3 dBA L_{dn} increase as substantial.

- For multi-family residential areas, schools, and public spaces: the standard for daytime noise (7:00 a.m. to 10:00 p.m.) is 55 dBA for noise occurring at least 30 minutes in an hour, and the standard for nighttime noise (10:00 p.m. to 7:00 a.m.) is 50 dBA for noise occurring for at least 30 minutes in an hour. The noise ordinance allows adjustment of these thresholds in 5 dBA increments in cases where the local background noise already exceeds the noise standard. An equivalent level for the ordinance incorporating a time-varying sound was calculated, and it corresponds to 59 dBA L_{eq} (day) and 54 dBA L_{eq} (night) in an hour. For construction noise occurring between 7:00 a.m. and 8:00 a.m., a significance threshold of 59 dBA L_{eq} would be applied to multi-family residential areas, schools, and public spaces.

The Lafayette General Plan Noise Element identifies a L_{dn} of 55 dBA or less as compatible or "normally acceptable" in residential areas. Lafayette also identifies an L_{dn} of 65 or less as normally acceptable, in areas where outdoor use is a major consideration such as fixed recreation areas (e.g., picnic tables and playgrounds). The Noise Element does not identify a threshold for incremental noise increases that would apply to the Project but does require mitigation of noise impacts to the maximum feasible extent, as described in Program N-2.2. Because existing ambient baseline noise levels in the Lafayette WTP vicinity are 57 dBA L_{dn} on average during weekdays, a long-term operational noise in Lafayette would be considered potentially significant if the Project would increase the noise in a residential area by more than 3 dBA, or 60 dBA L_{dn}, or if noise impacts were not mitigated (**Table 3.11-10**), or if noise increased above the noise standards set forth in the Lafayette noise ordinance. If the Project noise would increase the noise in an outdoor recreation area to 65 L_{dn}, which would change the land use compatibility to "conditionally acceptable", this would be considered potentially significant.

Vibration Threshold

As summarized above under Vibration Analysis, Caltrans provides values for vibration levels which would damage buildings and disturb people; the thresholds for vibration impacts are included in **Table 3.11-10**.

Criteria Requiring No Further Evaluation

The criteria listed above that are not applicable to actions associated with the Project are identified below, along with the supporting rationale as to why further consideration is unnecessary and a no-impact determination is appropriate.

- ***For a project in 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, expose people residing or working in the project area to excessive noise levels (Criterion 3).*** The closest airport is the Buchanan Field Airport in Concord, located approximately 5 miles northeast of the Walnut Creek WTP site. The Lafayette WTP site is over 11 miles from the Oakland International Airport. The Project sites are not located within an airport influence area of either Oakland International Airport or San Francisco International Airport (ACCDA, 2012; C/CAG, 2012). The Project would not expose people residing or working near an airport to excessive noise levels; therefore, there would be no impact associated with exposing people near a public or private airport to excessive noise levels. The Project sites are not in the vicinity of a private airstrip. The Project would not expose people residing or working near a private airstrip to excessive noise levels; therefore, there would be no impact associated with exposing people near a private airstrip to excessive noise levels.

Impacts and Mitigation Measures

Impact NOI-1: Result in the 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. (Criterion 1)

The Project would generate temporary noise increases, as shown in **Table 3.11-11** through **Table 3.11-15** below, during the construction period. As described in the Project Description, *Section 2.6.7, Construction Schedule and Hours*, Phase 1 is expected to take between approximately 3 ¼ to 5 years. Phase 2 is estimated to take approximately 2 years but may be longer. Given the potential range in construction duration, the shorter construction durations for Phase 1 and Phase 2 are used in the impact analysis to capture a worst-case scenario where construction activities are most intense.

The following subsections describe the major construction activities that would occur both on site and off site (i.e., off-site noise generated by haul trucks) and the associated noise analysis for each Project analysis scenario discussed below. Construction noise was analyzed on an hourly basis because of its variability over time and operational noise was analyzed on an L_{dn} basis so as to allow comparison to the General Plan L_{dn} standards.

Construction noise is addressed based on hourly L_{eq} instead of spreading out the effect over a 24-hour L_{dn} since the noise is more variable over time and unlike operations, construction does not occur 24 hours per day.

Noise from new operations would not generate substantial changes from existing ambient noise conditions with EBMUD operations based on noise modeling and is discussed below for both water treatment plants.

Walnut Creek WTP Construction, Phase 1 and 2

<u>On-Site Noise</u>

As discussed above, many of the construction activities at the Walnut Creek WTP would overlap, and thus six Project noise assessment scenarios were developed to evaluate Project construction noise levels at the Walnut Creek WTP site (see **Table 3.11-5**) (two additional operational noise assessment scenarios were also developed, for a total of eight scenarios). On-site truck activities during construction would vary from day to day and hour to hour. Because haul and concrete trucks would generate much of the on-site noise at the Walnut Creek WTP, but would be used intermittently, construction noise was evaluated both with and without heavy trucks.

Table 3.11-11 summarizes the modeled L_{eq} noise levels during typical construction hours (between 7:00 a.m. and 6:00 p.m.) assuming that all construction equipment and heavy trucks (including concrete trucks) would be operating in the same hour. This is a conservative assumption to develop an estimate of the noise during the busiest days. As discussed above, the City of Walnut Creek noise ordinance does not contain quantified noise limits applicable to construction, so the noise levels in **Table 3.11-11** are compared to the speech interference indicator as a reference.

Table 3.11-11: Walnut Creek WTP Project Construction On-Site Hourly L_{eq} Noise Levels[1] – Applicable to Hours 7:00 a.m. to 6:00 p.m.

Scenario	Receptor	Existing Conditions Noise Levels (dBA L_{eq})	Existing + Maximum Project Noise Levels[2] (dBA 1-hr L_{eq})	Speech Interference Indicator (dBA 1-hr L_{eq})	Exceeds Speech Interference Indicator? (Y/N)	
					Without Mitigation Measures	With Mitigation Measures[3]
1.A: Phase 1 Site preparations (Backhoes, bobcat, concrete saw, dump truck)						
	Alfred Ave	47	49	70	N	N/A
	Ramsay Circle/Trail	46	55-56	70	N	N/A
	St. Stephen Church	47	47	70	N	N/A
	Larkey Reservoir	47	47	70	N	N/A
	Larkey Ln & Alfred Ave	47	53	70	N	N/A
	Bria Ct	47	48	70	N	N/A
	Summit Rd	47	47	70	N	N/A
	Quail View Circle	46	55-56	70	N	N/A
1.B: Gravity Thickeners (N) + Electrical Facilities + Dewatering (Backhoes, bobcats, compactors, compressors, concrete saws, concrete pumps, concrete trucks, dozers, dump trucks, excavators, forklifts, form building, loaders, rooftop work, welding)						
	Alfred Ave	47	49	70	N	N/A
	Ramsay Circle/Trail	46	67-69	70	N	N/A
	St. Stephen Church	47	48-49	70	N	N/A
	Larkey Reservoir	47	48-49	70	N	N/A
	Larkey Ln & Alfred Ave	47	47-48	70	N	N/A
	Bria Ct	47	52-54	70	N	N/A
	Summit Rd	47	47	70	N	N/A
	Quail View Circle	46	68-70	70	N	N/A
1.C: Scenario 1.B + add Ballasted Flocculation + add Hydrogen Peroxide (Backhoes, bobcats, compactors, compressors, concrete saws, concrete pumps, concrete trucks, dozers, dump trucks, excavators, forklifts, form building, loaders, rooftop work, welding)						
	Alfred Ave	47	69-71	70	**Y**	**N[3]**
	Ramsay Circle/Trail	46	67-69	70	N	N/A

Scenario	Receptor	Existing Conditions Noise Levels (dBA L_{eq})	Existing + Maximum Project Noise Levels[2] (dBA 1-hr L_{eq})	Speech Interference Indicator (dBA 1-hr L_{eq})	Exceeds Speech Interference Indicator? (Y/N) Without Mitigation Measures	Exceeds Speech Interference Indicator? (Y/N) With Mitigation Measures[3]
	St. Stephen Church	47	57-59	70	N	N/A
	Larkey Reservoir	47	51-53	70	N	N/A
	Larkey Ln & Alfred Ave	47	52-53	70	N	N/A
	Bria Ct	47	53-55	70	N	N/A
	Summit Rd	47	47	70	N	N/A
	Quail View Circle	46	68-70	70	N	N/A
1.D: Scenario 1.C + add Solids Transfer PP (Backhoes, bobcats, compactors, compressors, concrete saws, concrete pumps, concrete trucks, dozers, dump trucks, excavators, forklifts, form building, loaders, rooftop work, welding)						
	Alfred Ave	47	68-70	70	N	N/A
	Ramsay Circle/Trail	46	67-70	70	N	N/A
	St. Stephen Church	47	56-59	70	N	N/A
	Larkey Reservoir	47	52-54	70	N	N/A
	Larkey Ln & Alfred Ave	47	52-53	70	N	N/A
	Bria Ct	47	54-56	70	N	N/A
	Summit Rd	47	47-48	70	N	N/A
	Quail View Circle	46	67-70	70	N	N/A
2. A: Gravity Thickeners (S) + Ballasted Flocculation + Pre-Ozone pumping plant (with Phase 1 operations and Backhoes, bobcats, compactors, compressors, concrete saws, concrete pumps, concrete trucks, dozers, dump trucks, excavators, forklifts, form building, loaders)						
	Alfred Ave	47	55-57	70	N	N/A
	Ramsay Circle/Trail	46	63-65	70	N	N/A
	St. Stephen Church	47	54-56	70	N	N/A
	Larkey Reservoir	47	56-58	70	N	N/A

Scenario	Receptor	Existing Conditions Noise Levels (dBA L_{eq})	Existing + Maximum Project Noise Levels[2] (dBA 1-hr L_{eq})	Speech Interference Indicator (dBA 1-hr L_{eq})	Exceeds Speech Interference Indicator? (Y/N) Without Mitigation Measures	With Mitigation Measures[3]
	Larkey Ln & Alfred Ave	47	60-62	70	N	N/A
	Bria Ct	47	53-54	70	N	N/A
	Summit Rd	47	47	70	N	N/A
	Quail View Circle	46	65-67	70	N	N/A
2. B: Gravity Thickeners (S) + Ballasted Flocculation + Off-haul (with Phase 1 operations and Backhoes, bobcats, compactor, compressors, concrete saws, concrete pumps, concrete trucks, dump trucks, forklifts, form building, loaders, welding)						
	Alfred Ave	47	50-53	70	N	N/A
	Ramsay Circle/Trail	46	58-62	70	N	N/A
	St. Stephen Church	47	49-52	70	N	N/A
	Larkey Reservoir	47	51-54	70	N	N/A
	Larkey Ln & Alfred Ave	47	58-62	70	N	N/A
	Bria Ct	47	50-52	70	N	N/A
	Summit Rd	47	47	70	N	N/A
	Quail View Circle	46	60-63	70	N	N/A

Source: Wilson Ihrig, 2023, See **Appendix I** for more details
N/A: not applicable
[1] This assumes 13 heavy trucks on the haul road in an hour, including 7 trucks circulating on site (7 one-way trips) and four concrete trucks (8 one-way trips), one haul truck (2 one-way trips), and one delivery truck (2 one-way trips).
[2] The maximum range, where shown, indicates the estimated noise during peak periods with haul trucks and concrete trucks at the peak number of truck trips. The higher end of the range assumes that concrete truck activities would be on-going for each facility covered in each scenario. The lower range reflects a period with no concrete trucks. If no range is shown, there was not sufficiently large variation in the project noise levels to generate a minimum 1 dBA difference.
[3] **Mitigation Measure NOI-1** would include installation of a sound barrier to block the line of sight of construction activities to nearby residences, which would reduce noise by 8 dBA at Alfred Avenue..

As noted in **Table 3.11-11,** based on noise modeling for all scenarios, some construction activities during Phase 1 could temporarily exceed 70 dBA and could be noticeable to residents in the area since speech interference occurs at 70 dBA. The only receptor potentially exceeding speech interference would be Alfred Avenue (under Scenario 1.C). Typical construction noise levels would be less than the levels shown in **Table 3.11-11** because the estimates shown are based on peak periods of construction activity, in particular if haul truck and concrete truck activity would occur simultaneously with all construction activities in the same hour, and typically the speech interference indicator would not be exceeded, as shown in **Table 3.11-11.**

Noise from typical construction activities occurring between the hours of 7:00 a.m. and 6:00 p.m. without concrete trucks operating would range from approximately 47 to 69 dBA L_{eq}, but when concrete trucks are in use during typical construction hours (in combination with haul trucks and on-site construction equipment), noise levels would be higher, ranging from 47 to 71 dBA L_{eq} (**Table 3.11-11**). Concurrent haul trucks and concrete trucks use during the typical construction day would generate noise levels towards the maximum end of the range shown, but noise from individual truck trips noise would be intermittent[8] and of short duration because trucks would not remain on the site for longer than necessary. As described in *Section 2.6.7, Construction Schedule and Hours*, construction noise as summarized in **Table 3.11-11** would occur during the typical construction workday of 7:00 a.m. to 6:00 p.m. which is consistent with the Walnut Creek noise ordinance (**Table 3.11-10**). Thus, construction during typical work hours would not generate noise in excess of applicable local noise standards and would not require mitigation. Also, workers would be allowed to arrive half an hour before 7:00 a.m. at 6:30 a.m. and may park daily at Staging Area 4 for the entire durations of Phase 1 and Phase 2. However, noise barriers installed for **Mitigation Measure NOI-1** to reduce noise during early morning construction would also reduce noise levels to below the 70 dBA speech interference indicator.

Although most work at the Walnut Creek WTP would occur within the allowable construction hours per the City of Walnut Creek noise ordinance, a total of approximately 55 extended workdays are expected for large concrete pours during Phases 1 and 2. Extended workdays are necessary for large concrete pours. Extended workdays would begin as early as 6:00 a.m.; no weekend, evening or nighttime construction is planned. During Phase 1, approximately 40 extended workdays would occur during the 3 ¼-year construction period, meaning extended workdays would comprise less than five percent of the construction days (assuming 260 workdays per year). During Phase 2, approximately 15 extended workdays would occur over the 2-year construction period, which is less than three percent of the construction days.

It is anticipated that concrete pour activities would accommodate about four concrete trucks per hour arriving to the site, pouring concrete, and then departing. Therefore, extended workdays would involve noise from about four concrete trucks traveling to and working at the site for one hour prior to the construction hours specified in the Walnut Creek noise ordinance. As summarized in **Table 3.11-6**, concrete equipment (such as mixer and pump) could generate about 88 dBA L_{eq} at a distance of 50 feet. The nearest sensitive receptors are located approximately 250 feet from the nearest Walnut Creek WTP construction activities. At a distance of 250 feet, noise from concrete equipment would attenuate to approximately 74 dBA, which would be greater than the 60-dBA residential noise threshold for Walnut Creek at certain receptors if it were to operate continuously.

During the limited number of extended construction days when early morning construction activities on site could occur prior to 7:00 a.m., the primary construction activities would typically be concrete deliveries for one facility with no activities at the other work areas. The noise levels shown in **Table 3.11-12** would be the maximum noise that could be generated during these early morning conditions when concrete work would be done at the nearest facility. The receptors where sleep disturbance criteria could be exceeded during early morning concrete deliveries during Phases 1 and 2 include: Quail View Circle (Scenarios 1.B, 1.C, and 1.D), and Alfred Avenue (Scenarios 1.C and 1.D).

[8] On typical work days, no more than thirteen individual trucks in an hour.

Table 3.11-12: Walnut Creek WTP Project Construction On-Site Hourly L_{eq} Noise Levels – Early Morning Concrete Work[1,2] (6:00 a.m. to 7:00 a.m.)

Receptor	Scenario and Building[3]: with Highest Noise from Concrete Work	Existing Conditions Noise Levels (dBA L_{eq})	Existing + Project Noise Levels[2] (dBA 1-hr L_{eq})	Sleep Disturbance Criterion 6:00 a.m. to 7:00 a.m. (dBA 1-hr L_{eq})	Exceeds Non-Daytime Criterion? (Y/N)	
					Without Mitigation Measures	With Mitigation Measures[4]
Alfred Ave	1.C& 1.D: Hydrogen Peroxide station (18-E)	48	49-68	60	**Y**	**N**
Ramsay Circle/Trail	1.B: Thickened Solids (11-N)	45	51-60	60	N	N/A
St. Stephen Church	1.C: Hydrogen Peroxide station (18-E)	48	48-55	60	N	N/A
Larkey Reservoir	2.A Intermediate Ozone Contactors (3)	48	48-52	60	N	N/A
Larkey Ln & Alfred Ave	2.A Intermediate Ozone Contactors (3)	48	48-59	60	N	N/A
Bria Ct	2.A Gravity Thickeners (11-S)	48	48-51	60	N	N/A
Summit Rd	1.C&1.D Combined Reclaimed Metering Vault (7)	48	48	60	N	N/A
Quail View Circle	1.B, 1C &1.D Combined Reclaimed Metering Vault (7)	45	52-63	60	**Y**	**N**

Source: Wilson Ihrig, 2023
N/A: not applicable
[1] This assumes 6 heavy trucks on the haul road in an hour including four concrete trucks (8 one-way trips), one haul truck (2 one-way trips), and one delivery truck (2 one-way trips).
[2] These calculations show concrete work only during the early morning when construction on other facilities would not be occurring. Noise calculations for concrete-only work primarily use concrete mixer and concrete pump trucks which would dominate the noise levels The range shows the average sound from morning concrete work for all projects in any scenario up to the highest expected sound for concrete work at the closest facility. The high end of range is the expected noise from concrete work identified in the second column, and the low end of the range is the average noise from all possible morning concrete activities.
[3] See **Appendix I** for more details
[4] **Mitigation Measure NOI-1** would include the following to reduce noise to 60 dBA Leq or less: minimizing non-essential noise-generating activities between 6:00 a.m. and 7:00 a.m. (1 dBA reduction);and installing a sound barrier to block the line of sight of construction activities to nearby residences (minimum 8 dBA reduction at Alfred Avenue and 5 dBA reduction at Quail View Court).

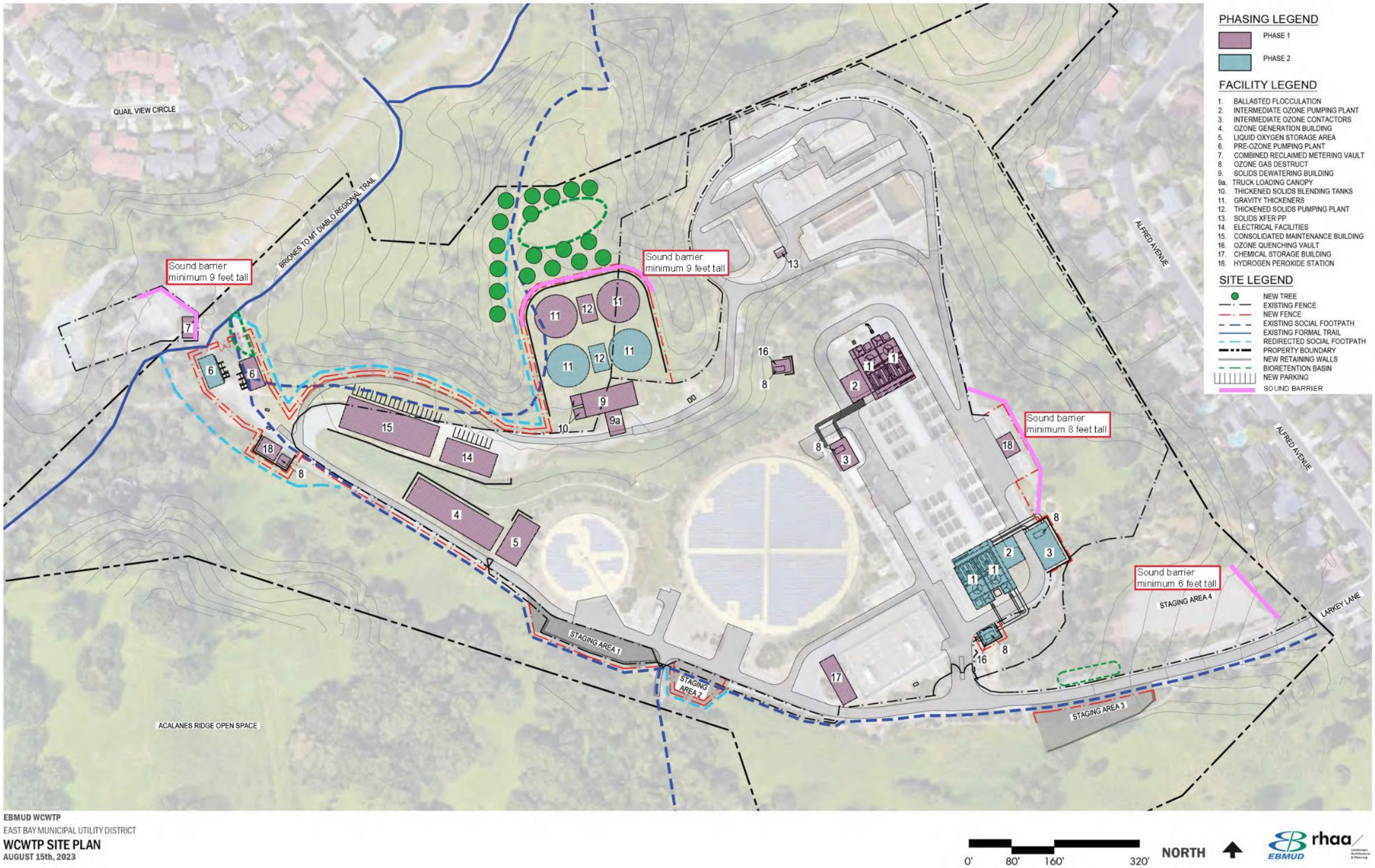
Construction activities at the Walnut Creek WTP occurring outside typical construction hours would be limited in duration and would occur only occasionally. Less than five percent of construction days would require extended work hours, and on those days, only about one hour of work would occur outside standard construction hours. Concrete pours on extended days could occur outside the hours of 7:00 a.m. and 6:00 p.m. set by the Walnut Creek noise ordinance, and work outside those hours could exceed the residential noise threshold of 60 dBA, which has the potential to constitute a significant impact.

As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including Standard Construction Specification 01 35 44, Section 1.4(G) and Section 3.8, which include a range of noise control measures such as developing a Noise Control and Monitoring Plan and requiring the contractor to control on site activities and implement noise control measures (e.g., mufflers or noise-attenuating shields) on all equipment. The contractor will be required to minimize non-essential construction activities outside typical construction hours. Additionally, as stated above, EBMUD Standard Construction Specification 01 14 00, Section 1.7(A), requires that noise-generating activities greater than 90 dBA (impact construction such as concrete breaking, concrete crushing, tree grinding, etc.) shall be limited to the hours of 7:00 a.m. to 6:00 p.m., Monday through Friday. In addition, EBMUD Procedure 600 designates a Public Affairs liaison to respond to construction-related issues and coordinate with the construction project manager/engineer and any contractors to resolve issues. EBMUD Procedure 600 requires contact information for the Public Affairs liaison (i.e., phone number, email address) and capital project site address be provided via conspicuous signage at construction sites, on all advance notifications, and on the EBMUD project website). Although EBMUD standard practices and procedures would require best management practices to reduce noise, specific noise reductions achieved from these practices are not easily quantifiable. Thus, even with implementation of applicable EBMUD standard practices and procedures, concrete pours on extended days (between 6:00 a.m. and 7:00 a.m.) could exceed the residential noise threshold of 60 dBA, which would constitute a significant impact. The EBMUD Practices and Procedures Monitoring and Reporting Plan (**Appendix E**) lists the applicable standards specifications language.

Implementing **Mitigation Measure NOI-1,** which include additional specific noise control measures beyond the typical best management practices required by Standard Construction Specification 01 35 44, Section 3.8 would reduce the noise below the residential noise threshold of 60 dBA L_{eq}, and the impact of early morning concrete pours and early morning worker arrivals and parking would be reduced to less than significant.

Mitigation Measure NOI-1 requires that the Noise Control and Monitoring Plan (to be prepared under Standard Construction Specification 01 35 44, Section 1.4(G)) include specific noise control measures such as coordination of worksite activities and the installation of temporary sound barriers to reduce noise levels before 7:00 a.m. (Calculations are provided in **Appendix I**). Sound barriers would be required for the duration of Phase 1 at the Hydrogen Peroxide Station, the Combined Reclaimed Metering Vault, the north Thickened Solids Pumping Plant, and the two north Gravity Thickeners, and for the duration of Phase 2 at the south Thickened Solids Pumping Plant and two south Gravity Thickeners, to block noise from concrete trucks during construction of the new facilities. A sound barrier will also be required at Staging Area 4 for Phases 1 and 2 to reduce noise from early morning worker arrivals and parking (see **Figure 3.11-5**).

Figure 3.11-5: Sound Barrier Locations



Off-site Noise

Construction of the Project at the Walnut Creek WTP would increase traffic (as discussed in detail in Section 3.13, Transportation); in particular, heavy truck volumes would increase during days coinciding with large concrete pour activities (about 40 days in Phase 1 and 15 days in Phase 2) generating as many as 68 round trips per day during Phase 1 and up to about 75 round trips per day in Phase 2. During major concrete pours, concrete trucks could start as early as 6:00 a.m.[9]

Because the distribution of local traffic varies through the day, the off-site traffic noise analysis was conducted for two daytime periods: morning peak noise hour (7:00 a.m. to 9:00 a.m.), and early morning when the local traffic would have a lower volume (6:00 a.m. to 7:00 a.m.). These are shown in **Table 3.11-13** and **Table 3.11-14**, respectively.

Table 3.11-13: Walnut Creek WTP Off-Site Traffic Noise Levels – AM Peak (7:00 a.m. to 9:00 a.m.)

Roadway Segment	Existing AM Peak Hour[1] (1-hr L_{eq} dBA)	Existing + Construction[2] – dBA L_{eq} (1hr)	
		Peak Hour Noise Level With Haul Trucks and Passenger Trucks (1-hr L_{eq} dBA)	Exceeds Speech Interference Indicator (70 dBA)?
San Luis Road at Buena Vista Avenue	67	67	N
San Luis Road at Atri Court	61	62	N
San Luis Road at Encinal Drive	61	62	N
San Luis Road between Crown Court and Carrerio Lane	59	62	N
Larkey Lane near Alfred Avenue	41 (46)[3]	58	N

Source: Wilson Ihrig, 2023

Note: The results in **Table 3.11-13** are rounded to whole integers, per Caltrans standard practice.

[1] Existing peak hour based on traffic volumes and modeled in TNM.

[2] This assumes 6 heavy trucks on the haul road in an hour including four concrete trucks (8 one-way trips), one haul truck (2 one-way trips), and one delivery truck (2 one-way trips) and includes 25 worker vehicle one-way trips.

[3] The existing noise levels at Larkey Lane typically range between 46 to 50 dBA L_{eq} during the peak noise hour, based on results measured at LT-1; noise distant traffic on I-680 and other noise sources are not reflected in this analysis.

As shown in **Table 3.11-13**, based on noise modeling, the existing noise levels would increase by 0 to 17 dBA during the existing morning peak noise hour due to Project vehicle activity and would be potentially the highest with deliveries and workers arriving. At all locations shown in **Table 3.11-13** the increased noise level would be less than the speech interference indicator of 70 dBA L_{eq}. Noise occurring within the typical construction timeframe of 7:00 a.m. to 6:00 p.m. would be within the construction timeframes permitted by the Walnut Creek noise ordinance, thus traffic noise during typical construction hours would not conflict with local noise thresholds. Also, as discussed in Section 3.13, **Transportation, Mitigation Measure TRA-1** would be implemented, which requires the contractor to limit soil and demolition off-haul and large

[9] Note that potential impacts of early concrete truck arrival on sensitive receptors near the Walnut Creek WTP are discussed above under On-Site Noise.

equipment delivery trucks to between 9:00 a.m. to 3:30 p.m. at the Walnut Creek WTP, outside the AM and PM peak traffic periods. As described above under On-Site Noise, a small percentage of construction days would require extended hours to accommodate large concrete pours. On these days, about four concrete trucks per hour would arrive at the Walnut Creek WTP beginning as early as 6:00 a.m. (one hour prior to the construction timeframe allowed by the Walnut Creek noise ordinance). The off-site noise levels associated with early concrete trips would be comparable to the traffic scenario presented in **Table 3.11-14**, which includes 6 heavy trucks each way (4 concrete trucks plus 1 haul truck and 1 delivery truck) as well as worker pickup truck trips. Noise occurring outside the typical construction timeframe was compared to the sleep disturbance indicator of 60 dBA L_{eq}.

Table 3.11-14: Walnut Creek WTP Off-Site Traffic Noise Levels – Early Morning (6:00 a.m. to 7:00 a.m)

Roadway Segment	Existing Early Morning[1] (1-hr L_{eq} dBA)	Existing + Construction[2] – dBA L_{eq} (1hr)	
		Early Morning Traffic Scenario (1-hr L_{eq} dBA)	Exceeds Sleep Disturbance Indicator (60 dBA)?
San Luis Road at Buena Vista Avenue	58	61	**Y**
San Luis Road at Atri Court	52	59	N
San Luis Road at Encinal Drive	52	59	N
San Luis Road between Crown Court and Carrerio Lane	50	60	N
Larkey Lane at Alfred Avenue	33 (46)[3]	58	N

Source: Wilson Ihrig, 2023
Note: The results in Table **3.11-14** are rounded to whole integers, per Caltrans standard practice.
[1] Existing early morning based on scaling peak hour traffic volume by a factor of 1/8 based on noise results measured at location LT-3 and modeled in TNM
[2] This assumes 6 heavy trucks on the haul road in an hour including four concrete trucks (8 one-way trips), one haul truck (2 one-way trips), and one delivery truck (2 one-way trips) and includes 25 worker vehicle one-way trips.
[3] The existing noise levels at Larkey Lane typically range between 46 to 49 dBA L_{eq} during 6:00 a.m. to 7:00 a.m. period based on results measured at LT-1; noise distant traffic on I-680 and other noise sources are not reflected in this analysis.

As described above and as detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including Standard Construction Specification 01 35 44, Section 1.4(G) and Section 3.8, which requires a range of noise control measures such as developing a Noise Control and Monitoring Plan and requiring the contractor to implement noise control measures (e.g., mufflers or noise-attenuating shields) on all equipment, which would include heavy trucks traveling to and from the Walnut Creek WTP. In addition, EBMUD Procedure 600 designates a Public Affairs liaison to respond to construction-related issues and coordinate with the construction project manager/engineer and any contractors to resolve any issues. EBMUD Procedure 600 requires contact information for the Public Affairs liaison (i.e., phone number, email address) and capital project site address be provided via conspicuous signage at construction sites, on all advance notifications, and on the EBMUD project website). Also, as discussed in *Section 3.13, Transportation,* **Mitigation Measure TRA-1** would be implemented, which requires the contractor to limit soil and demolition off-haul and large equipment delivery trucks to outside the

AM and PM peak traffic periods. With implementation of these procedures noise levels would be reduced at residential receptors; however it may not be possible to reduce early morning noise from haul truck traffic for extended concrete pours at San Luis Road and Buena Vista Avenue to 60 dBA L_{eq} or less.

Occasional extended days would make up only a small percentage of the construction timeframe, and work would not occur overnight or for extended periods of time outside the normally allowable hours of 7:00 a.m. to 6:00 p.m., additionally Section 3.8, Noise Control, and Section 1.4(G), Noise Control and Monitoring Plan, of EBMUD Standard Construction Specification 01 35 44 Environmental Requirements, have been incorporated into the Project, and require noise control planning, monitoring, and noise management activities. However, there would be a short period when concrete pours are occurring when the Project would generate a temporary increase in ambient noise levels from haul truck traffic in excess of applicable standards along San Luis Road at Buena Vista Avenue, and the impact would be significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (**Appendix E**) lists the applicable standard specification language. **Mitigation Measure NOI-1** includes measures that can be implemented at the Walnut Creek WTP site, but coordination of worksite activities would not reduce noise from haul truck activities and use of noise barriers is not feasible along roadways. Because additional mitigation is not feasible along roadways and the existing noise levels are already approaching the threshold, the early morning noise from haul truck traffic for extended concrete pours to and from the Walnut Creek WTP at San Luis Road and Buena Vista Avenue before 7:00 a.m. is considered to be a significant and unavoidable impact and is anticipated to only occur for approximately 40 days for Phase 1 construction and 15 days for Phase 2 construction.

Lafayette WTP Construction

<u>On-Site Noise</u>

Construction activities at the Lafayette WTP would include demolition of existing weirs and the construction of new weirs and pipeline installation. Noise from construction activities was analyzed on an hourly basis; the complete list of equipment modeled is included in **Appendix I**. Three scenarios were modeled. **Table 3.11-15** provides the results of the construction noise analysis. As shown, based on noise modeling the greatest increase in noise levels due to construction would be at Temple Isaiah during construction of Lafayette Weir No. 2; noise would increase by 3 dBA L_{eq}, which would be a perceptible difference but not readily noticeable. Noise increases for all other receptors and scenarios were less than 3 dBA L_{eq}.

All construction noise occurring within the hours of 8:00 a.m. to 6:00 p.m. would be consistent with the Lafayette noise ordinance[10] (**Table 3.11-10**). Construction would typically begin at 7:00 a.m. and end at 6:00 p.m., which means that construction between 7:00 a.m. and 8:00 a.m. could conflict with the Lafayette noise ordinance. The Lafayette noise ordinance establishes a 54-dBA L_{eq} limit for time-varying outdoor noise in single-family residential areas (Mosswood Drive) in the hours between 7:00 a.m. and 10:00 p.m. However, as shown in **Table 3.11-15**, ambient noise levels in the Lafayette WTP vicinity are already greater than 54 dBA L_{eq}. The Lafayette noise ordinance allows outdoor noise limits to be increased in 5-dBA increments to encompass or

[10] Construction occurring between 8:00 a.m. and 8:00 p.m. is not subject to noise limits at receiving land use. Construction work outside these hours must comply with noise limits set forth in the noise ordinance.

Table 3.11-15: Lafayette Project Construction Hourly L_{eq} Noise Levels[1]

Scenario[2]	Receptor	Existing Conditions Noise Levels (dBA 1-hr L_{eq})	Existing + Project Noise Levels (dBA 1-hr L_{eq})	Noise Ordinance[3,4]/ Speech Interference Indicator (dBA 1-hr L_{eq})	Exceeds Ordinance or Speech Criteria? (Y/N)
Lafayette Weir No. 1 Demolition					
	Lafayette Reservoir Recreational Area	56	56	59/70	N
	Mosswood Dr.	59	59	60/70	N
	Contra Costa Jewish Day School	53	54	59/70	N
	Temple Isaiah	52	53	59/70	N
Lafayette Weir No. 1 Re-Construction					
	Lafayette Reservoir Recreational Area	56	57	59/70	N
	Mosswood Dr.	59	59	60/70	N
	Contra Costa Jewish Day School	53	55	59/70	N
	Temple Isaiah	52	55	59/70	N
Lafayette Weir No. 2 Raise					
	Lafayette Reservoir Recreational Area	56	56	59/70	N
	Mosswood Dr.	59	59	60/70	N
	Contra Costa Jewish Day School	53	55	59/70	N
	Temple Isaiah	52	55	59/70	N

Source: Wilson Ihrig, 2023

[1] Noise modeling for Lafayette WTP does not include topography that could shield receptors from Project construction noise.

[2] Scenarios include the following for all (see Appendix I for more details): Bobcat, compactor, compressor, concrete saws, concrete trucks, concrete pumps, cranes, dump trucks, excavator, forklift, form building, rooftop, welding.

[3] As listed in **Table 3.11-10**, the noise ordinance limit is based on receiving land use and/or existing ambient conditions. At single-family residences, the existing ambient condition adjusts the noise limit to 60 dBA L_{eq}. At schools and recreational areas, the time-based noise limit is 59 dBA L_{eq}.

[4] For hour before 8:00 a.m. the Lafayette noise ordinance allows outdoor noise limits to be increased in 5-dBA increments to encompass or reflect the ambient noise level. Therefore, for single-family residential areas where the ambient noise is between 50 and 55 dBA, a threshold of 55 dBA would be applied, and in areas where the ambient noise is between 55 and 60 dBA, a 60 dBA threshold would be applied.

reflect the ambient noise level. Therefore, for single-family residential areas where the ambient noise is between 50 and 55 dBA, a threshold of 55 dBA would be applied, and in areas where the ambient noise is between 55 and 60 dBA, a 60 dBA threshold would be applied. At schools and parks, the Lafayette noise limit is 59 dBA L_{eq} using the time-based limits between 7:00 a.m. and 10:00 p.m.

Based on noise modeling, the Project would not increase noise levels above applicable thresholds at any of the modeled receptors. Additionally, the temporary construction activities would cause the daytime noise levels to increase by 0 to 3 dBA, but there would be no increase during nighttime hours. Consequently, the temporary construction activities would increase the Ldn by less than 3 dBA and would not generate a substantial noise increase as defined in the Lafayette General Plan. Because on-site construction noise occurring after 8:00 a.m. would not conflict with the Lafayette noise ordinance, and because noise occurring before 8:00 a.m. would be in compliance with noise ordinance limits receiving land uses, and because the construction noise increase would not be substantial, the temporary noise impact from the Project would be less than significant at the Lafayette WTP site.

<u>Off-site Noise</u>

At the Lafayette WTP site, the primary access would be from Highway 24 and Mt. Diablo Boulevard, a four-lane arterial roadway. Based on noise modeling, the Project-related trucks would generate less than 1 dBA noise increase which would not be substantial as defined in the Lafayette General Plan. The Lafayette noise ordinance does not limit construction-related noise occurring between 8:00 a.m. and 8:00 p.m. on weekdays; therefore, off-site noise during this time would not conflict with applicable local ordinances. Work hours would typically begin at 7:00 a.m. Noise increases of 3 dBA or less are typically not noticeable outside a controlled laboratory setting. Therefore, the anticipated 1-dBA noise increase would not be noticeable. Because the noise increase is small, and because it would be temporary and limited to the construction period, the short-term maximum noise increase due to Project-related trucks would be less than significant at the Lafayette WTP site.

Operation and Maintenance

The Project would include new sources of operation and maintenance noise at the Walnut Creek WTP site. Increased vehicle noise would be created from increased truck trips associated with off hauling dewatered solids, increased truck trips associated with importing alum, polymer, microsand, hydrogen peroxide, and liquid oxygen (approximately one additional truck per week for chemical deliveries), and increased vehicle trips associated with approximately four new operational staff reporting to the site. New noise generating equipment would be operating on site including the pre-ozone and intermediate ozone pumping plants, thickened solids pumping plant, solids transfer pumping plant, ballasted flocculation basins, and new electrical substation with transformer and switchgear.

Future dewatered solids hauling activities at the Walnut Creek WTP site could increase haul trips from 2 trucks per day to 3 trucks per day during typical activities. However, during temporary periods of high turbidity (which are expected to occur rarely) there could be up to 21 truck trips a day to haul away sludge from the gravity thickeners. Noise impacts from off-site hauling activities would be similar to the existing conditions, and noise impacts would be less than significant.

Operation and maintenance noise levels at the Walnut Creek WTP with the completion of Phase 1 and Phase 2 are summarized in **Table 3.11-16** presented on an L_{dn} basis to assume 24/7 operations. Based on noise modeling, the operation and maintenance noise increase would be well below the 3 dBA threshold at all locations. Operation and maintenance of the Walnut Creek WTP would not create a substantial noise increase that would conflict with the Walnut Creek General Plan, and therefore the impact would be less than significant.

Table 3.11-16: Walnut Creek Project Operation and Maintenance Noise Levels

Scenario	Receptor	Existing Conditions Noise Levels (dBA L_{dn})	Existing + Project Noise Levels (dBA L_{dn})	Noise Increase (dBA)	Noise Increase Threshold (dBA)	Exceed Thresholds? (Y/N)
Phase 1 Completed						
	Alfred Ave	50	50	0	3	N
	Ramsay Circle/Trail	49	49	0	3	N
	St. Stephen Church	50	50	0	3	N
	Larkey Reservoir	50	50	0	3	N
	Larkey Ln & Alfred Ave	50	50	0	3	N
	Bria Ct	50	50	0	3	N
	Summit Rd	50	50	0	3	N
	Quail View Circle	49	49	0	3	N
Phase 2 Completed						
	Alfred Ave	50	50	0	3	N
	Ramsay Circle/Trail	49	49	0	3	N
	St. Stephen Church	50	50	0	3	N
	Larkey Reservoir	50	50	0	3	N
	Larkey Ln & Alfred Ave	50	50	0	3	N
	Bria Ct	50	50	0	3	N
	Summit Rd	50	50	0	3	N
	Quail View Circle	49	49	0	3	N

Source: Wilson Ihrig, 2023

The replaced Lafyette Weir No. 1 at the Lafayette WTP would be located approximately 250 feet southeast of the existing Lafyette Weir No. 1 location. The replaced Lafayette Weir No. 1 location would be slightly closer to existing sensitive receptors such as Temple Isaiah but would not be located closer to sensitive receptors than the existing Lafayette Weir No. 2; thus, the noise experienced at the nearest sensitive receptors would not be affected by the weir relocation. Because overall operations at the Lafayette WTP site would not change, noise from the Lafayette WTP site operations would not increase above existing noise levels. There would be no conflict with the Lafayette General Plan or Lafayette noise ordinance, and the impact would be less than significant at the Lafayette WTP site.

Significance Determination Before Mitigation

Potentially significant.

Mitigation Measures

Mitigation Measure TRA-1: Minimize Impacts of Heavy Truck Traffic at the Walnut Creek WTP

(Refer to Impact TRA-1 in *Section 3.13, Transportation,* for the full text of Mitigation Measure TRA-1)

Mitigation Measure NOI-1: Additional Noise Control and Monitoring Plan Measures at the Walnut Creek WTP

The Noise Control and Monitoring Plan required in the Project specifications would include specific measures to reduce noise to ensure that noise at residential receptors does not exceed 60 dBA L_{eq} before 7:00 a.m. in Walnut Creek. The following measures, or their equivalent, would be used in combination to meet the noise limits:

- Coordinate worksite activities to minimize or eliminate non-essential noise-generating activities between 6:00 a.m. and 7:00 a.m.
- Install temporary sound barriers achieving a minimum sound transmission class (STC) 25 to block the line of sight from concrete activities to nearby residences (**Figure 3.11-5**) for the duration of the applicable construction phase(s).
    - To reduce noise by at least 8 dBA from concrete trucks at the Hydrogen Peroxide Station during Phase 1, sound barriers would need to be at minimum 8 feet high and located on the northeast side of the Hydrogen Peroxide Station.
    - To reduce noise by at least 5 dBA from concrete trucks at the Combined Reclaimed Metering Vault during Phase 1, sound barriers would need to be at minimum 9 feet high, and located on the north, northeast, and northwest sides of the vault.
    - To reduce noise by at least 3 dBA from concrete trucks at the Thickened Solids Pumping Plants and Gravity Thickeners during Phases 1 and 2, sound barriers would need to be at minimum 9 feet high and located on the northeast side of the work area.
    - To reduce noise by at least 5 dBA from early morning worker arrivals and parking at Staging Area 4 during Phases 1 and 2, sound barriers would need to be at minimum 6 feet high and located on the east side of the staging area.

Significance Determination After Mitigation

Less than significant for construction activities at the Walnut Creek and Lafayette WTPs and for off-site noise in Lafayette; significant and unavoidable for off-site haul truck noise along San Luis Road at Buena Vista Avenue before 7:00 a.m. in Walnut Creek anticipated to only occur for approximately 40 days for Phase 1 construction and 15 days for Phase 2 construction.

Impact NOI-2: Result in the generation of excessive groundborne vibration or groundborne noise levels. (Criterion 2)

Walnut Creek WTP Construction Phase 1 and Phase 2, Lafayette WTP Construction

Construction would include the use of vibration-generating equipment and could produce groundborne vibration at nearby structures. Not all construction equipment operations generate measurable vibration, and reference vibration levels have been published for equipment most commonly associated with vibration effects (Caltrans, 2020). Equipment proposed to be used during construction that are expected sources of vibration include bulldozers, some types of compactors (vibratory), and to a lesser degree haul trucks operating on uneven surfaces. Construction activities would also entail the use of heavy trucks for material deliveries (including concrete) and for delivery of excavated materials from other sites.

If groundborne vibration generated by Project-related activities were to exceed 0.5 in/sec PPV for transient sources, or 0.25 in/sec PPV for continuous sources, vibration could damage nearby structures, including adjacent buildings. The vibration controls limit of 0.5 in/sec PPV would apply at the nearest residence or other sensitive structure, however more restrictive criteria have been considered for building damage and human annoyance. **Table 3.11-17** shows the vibration amplitudes corresponding to closest adjacent structures at 225 feet from the closest work areas; the closest Walnut Creek WTP work area is 250 feet from homes on Quail View Circle; the nearest structure to the Lafayette WTP work areas would be 225 feet from the work (Temple Isaiah). This 225-foot distance to the nearest structure represents the worst-case scenario with respect to the potential to cause building damage. While vibration attenuation with distance can vary depending on subsoils, based on vibration modeling the estimated vibration levels generated by temporary construction equipment would not exceed the 0.5 in/sec PPV threshold for transient sources, or the 0.3 in/sec PPV threshold for continuous sources.

Table 3.11-17: Summary of Vibration at Nearest Structure Compared to Building Damage Criteria

Vibration-Inducing Equipment	Equipment Vibration Amplitude at 25-feet (PPV in/sec)[1]	Distance to Nearest Structure (feet)[2]	Attenuated Construction Equipment Vibration Level at Nearest Structure (PPV in/sec)[3]	Building Damage Criteria (PPV in/sec)	Exceeds Building Cosmetic Damage Criteria?
Vibratory compactor	0.21	225	0.012	0.3 (continuous)	No
Large Bulldozer	0.089	225	0.005	0.5 (transient)	No
Loaded truck	0.076	225	0.004	0.5 (transient	No
Small bulldozer	0.003	225	<0.001	0.5 (transient)	No

Source: Wilson Ihrig, 2023

[1] Reference vibration levels for construction equipment are derived from Caltrans (2020).

[2] Nearest structures from Walnut Creek WTP project is 250 feet to the vicinity of the Combined Reclaimed Metering Vault; the nearest structure at Lafayette WTP is 225 feet.

[3.] Attenuated construction equipment vibration levels at the nearest sensitive receptors were calculated using the methodology in Caltrans (2020 using a soil factor of n=1.3 (2020).

Furthermore, vibration levels would not exceed the annoyance impact criteria (see **Table 3.11-18**). Vibration generated by construction would attenuate to levels below the annoyance criteria due to the greater distance to sensitive receptors. Because construction would occur during the daytime hours (generally 7:00 a.m. to 7:00 p.m.), vibrations would not result in sleep disruption for receptors near the construction.

Table 3.11-18: Summary of Vibration at Nearest Structure Compared to Annoyance Criteria

Vibration-Inducing Equipment	Equipment Vibration Amplitude at 25-feet (PPV in/sec)	Distance to Nearest Structure (feet)[2]	Attenuated Construction Equipment Vibration Level at Nearest Structure (PPV in/sec)[3]	Annoyance Criteria	Exceeds Annoyance Criterion?
Vibratory compactor	0.21	225	0.012	0.040 (Continuous)	No
Large bulldozer	0.089	225	0.005	0.040 (Frequent Intermittent)	No
Loaded truck	0.076	225	0.004	0.250 (Transient)	No
Small bulldozer	0.003	225	<0.001	0.250 (Transient)	No

Source: Wilson Ihrig, 2023
[1] Reference vibration levels for construction equipment are derived from Caltrans (2020).
[2] Nearest structures from Walnut Creek WTP project is 250 feet to the vicinity of the Combined Reclaimed Metering Vault; the nearest structure at Lafayette WTP is 225 feet.
[3] Attenuated construction equipment vibration levels at the nearest sensitive receptors were calculated using the methodology in Caltrans, using a soil factor of n=1.3 (2020).

As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including Standard Construction Specification 01 35 44, Environmental Requirements, Section 1.4(H), Vibration Control and Monitoring Plan, and Section 3.7, Vibration Controls. Section 3.7, Vibration Controls, requires that surface vibration generated by Project equipment be limited to no more than 0.5 in/sec PPV, as measured at the nearest residence. Section 1.4(H), Vibration Control and Monitoring Plan, requires that the contractor submit a plan detailing how vibration will be controlled and monitored during all vibration-generating work (such as demolition, grading, and compacting). The Vibration Control and Monitoring Plan must specify the equipment and methods used to monitor compliance with the plan.

Because Standard Construction Specification 01 35 44, Environmental Requirements, Section 3.7, Vibration Controls, and Section 1.4(H), Vibration Control and Monitoring Plan have been incorporated into the Project and require contractors to maintain their activities such that vibration would not exceed 0.5 in/sec PPV and submit a plan detailing the means and methods for controlling and monitoring surface vibration generated by demolition, vibration impacts to structures during construction would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (**Appendix E**) lists the applicable standards specifications language.

Operation and Maintenance

Project operation and maintenance would not include use of equipment that could create groundborne vibration. Thus, operation and maintenance would not result in the generation of excessive groundborne vibration or groundborne noise levels, and there would be no impact.

Significance Determination Before Mitigation

Less than significant.

Mitigation Measures

None required.

Cumulative Impact Analysis

This section presents an analysis of the cumulative effects of the Project which could, in combination with other present and reasonably foreseeable future projects, cause cumulatively considerable impacts. The geographic scope of analysis for cumulative noise and vibration construction impacts encompasses sensitive receptors within approximately 500 feet of either Project WTP site. Beyond 500 feet, the contributions of noise and vibration from future projects would be greatly attenuated through both distance and intervening structures, and their contribution would be expected to be minimal.

Sixteen projects are planned within the general vicinity of the Project sites. **Table 3.0-1** includes a comprehensive list of potential projects planned for construction within the general vicinity of the Project sites. Of the sixteen projects planned to occur within the general vicinity of the Project sites, three would be located within approximately 500 feet of the either the Walnut Creek or Lafayette WTP's Project sites and could overlap with the Project construction timeframe. The three projects are the Larkey Pumping Plant Rehabilitation at the Walnut Creek WTP, Lafayette No. 1 Aqueduct Relining from south of Quandt Road to west of Lafayette WTP, and Lafayette WTP Interim Disinfection and Residuals Improvements.

The Project could occur at the same time as future construction projects. If construction of future projects overlaps with construction for the Project, the Project in combination with other construction could contribute to an increase above 60 dBA L_{dn} (which both the Walnut Creek and Lafayette general plans consider compatible with residential land uses, as summarized in **Table 3.11-10**) or contribute to a "substantial" incremental increase (i.e., one that would conflict with Action 9.1.1 of the Walnut Creek General Plan). As described under Significance Criteria, above, for the purposes of this EIR, an increase of more than 3 dBA L_{dn} would be considered a significant increase in noise. However, future construction projects would also be subject to applicable noise standards and restrictions (e.g., limitations on permitted hours of construction, permanent noise increases). In addition, all three reasonably foreseeable future projects within 500 feet of the Project sites are EBMUD projects. Therefore, each project would be required to implement noise and vibration controls and monitoring plans per EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, and limit hours of noisy activities according to EBMUD Standard Construction Specification 01 14 00, Work Restrictions. Thus, the Project construction, in combination with other future projects, would not create noise impacts that exceed significance thresholds, and therefore would not have the potential to contribute to a cumulatively considerable impact.

Long term noise associated with the Project would be generated by increased truck trips associated with off hauling dewatered solids and importing alum, polymer, microsand, hydrogen peroxide, and liquid oxygen. The Project would also create additional vehicle trips associated with one to two new operational staff reporting to the site. New noise generating equipment would be operating on site including the pre-ozone and intermediate ozone pumping plants, thickened solids pumping plant, solids transfer pumping plant, ballasted flocculation basins, and new electrical substation with transformer and switchgear. At the Lafayette WTP site, Lafayette Weir No. 1 would be relocated slightly closer to noise sensitive receptors, but the weir generates minimal noise and noise generated by the new weir would be similar to noise from the existing Lafayette Weir No. 2. As summarized in **Table 3.11-16**, the Project would not increase the existing L_{dn} levels at the Walnut Creek WTP; operational noise levels at the Lafayette WTP would remain the same because operations would not change and the relocated Lafayette Weir No. 1 would not be closer to sensitive receptors than existing facilities (Lafayette Weir No. 2). Therefore, Project operations would not increase ambient noise levels, and would not have the potential to contribute to a cumulatively considerable impact.

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3.12 Recreation

This section describes the physical, environmental, and regulatory setting for recreation resources at the Project site and vicinity, identifies the significance criteria for determining environmental impacts, and evaluates the potential impacts on recreation resources that could result from implementation of the Project.

3.12.1 Environmental Setting

Parks and Recreation

Local Parks

City of Walnut Creek

The City of Walnut Creek Open Space division manages over 3,000 acres of open space in four distinct areas and over 7 miles of neighborhood trails. These open space areas have been set aside to preserve natural resources, protect wildlife habitat and corridors, and provide recreation opportunities (City of Walnut Creek, 2022a).

The closest open space area to the Project is the Acalanes Ridge Open Space which is a 171-acre preserve located on the western boundary of the City of Walnut Creek, adjacent to the Walnut Creek WTP. Recreational uses at the Acalanes Ridge Open Space include hiking, biking, dog walking, picnicking, and equestrian activities. The most prominent feature of the open space is the ridgeline rising 743 feet above sea level, which provides views of the Ygnacio Valley from Mt. Diablo to Suisun Bay and beyond. (City of Walnut Creek, 2022b).

The Sousa Trail has views into the Walnut Creek WTP from the south. The Yarrow Trail and Ridge Top Trail provide more distant views into the Walnut Creek WTP from within the Acalanes Ridge Open Space area to the west.

The City of Walnut Creek also manages the 13-acre Larkey Park, located 0.75 miles north of the Walnut Creek WTP. Larkey Park features connection to walking trails and open turf area, picnic facilities, athletic fields, and playground equipment. The Lindsay Wildlife Experience, a family museum and wildlife rehabilitation center and the Walnut Creek Model Railroad Society are located within Larkey Park (City of Walnut Creek, 2022b).

City of Lafayette

The City of Lafayette manages five local parks, but none are within a mile of the Lafayette WTP. The closest recreation area is the Lafayette Reservoir located directly across Mt. Diablo Boulevard from the Lafayette WTP, which is managed by East Bay Municipal Utility District (EBMUD) and is described below.

Parks and recreational facilities within a 1-mile radius of the Walnut Creek and Lafayette WTPs are shown in **Figure 3.12-1** and **Figure 3.12-2**, respectively.

Figure 3.12-1: Parks and Recreational Facilities within a 1-mile Radius of the Walnut Creek WTP Site

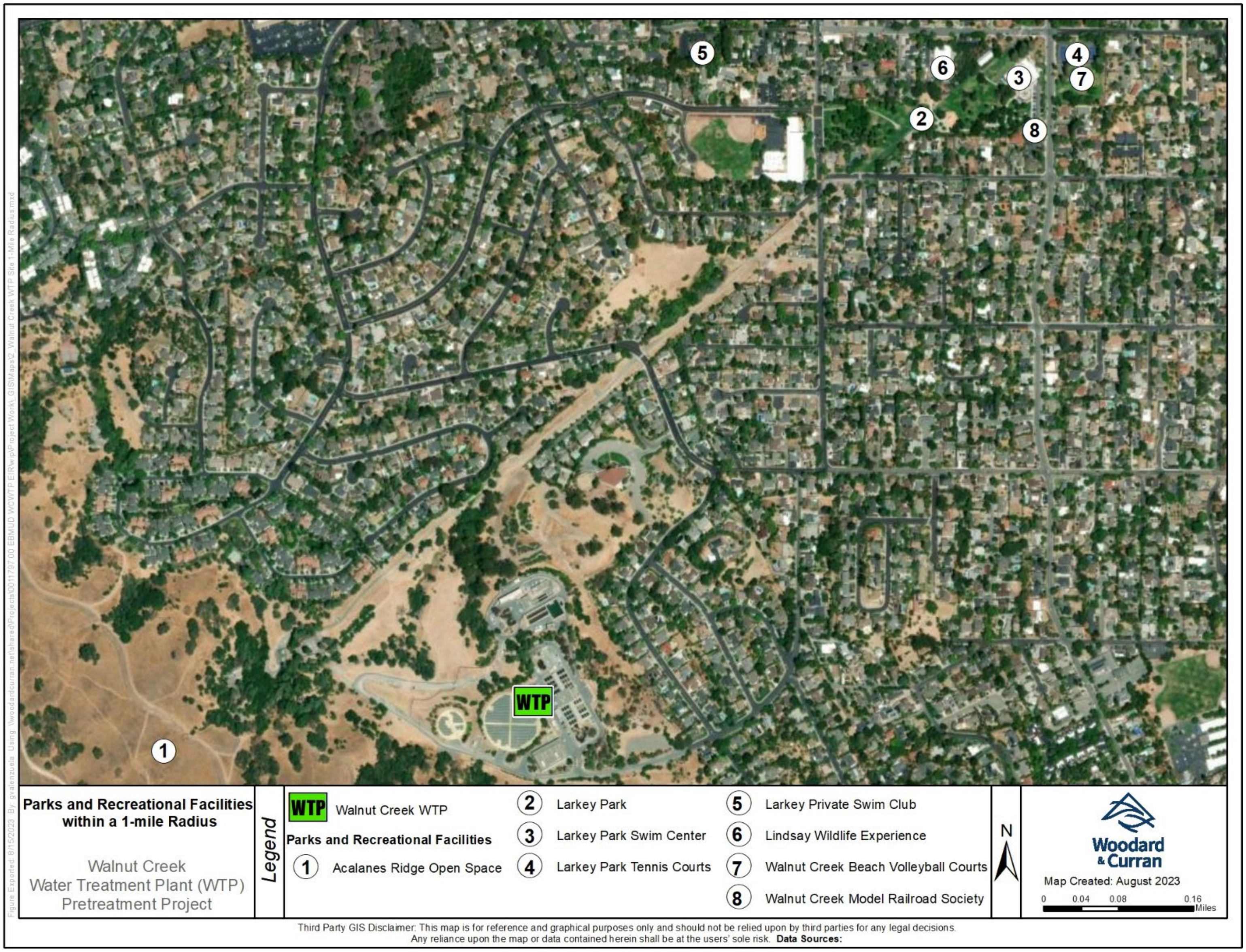
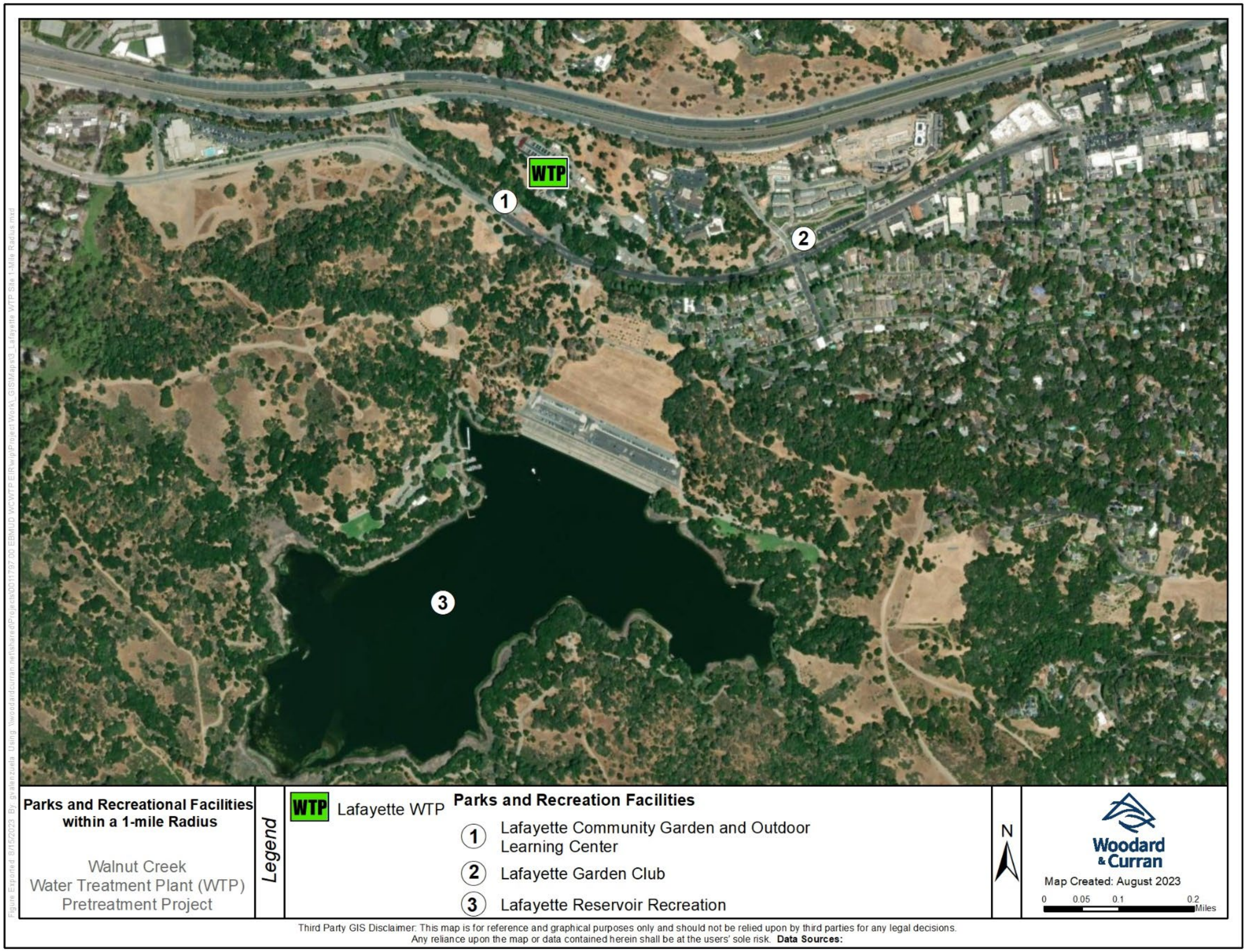


Figure 3.12-2: Parks and Recreational Facilities within a 1-mile Radius of the Lafayette WTP Site



Regional Parks

The East Bay Regional Park District

The East Bay Regional Park District (Park District) acquires and develops regional parks, open spaces, and trails throughout the East Bay. Spanning more than 125,000 acres, the Park District owns and maintains 73 parks, 1,250 miles of trails, and 55 miles of shoreline in Alameda and Contra Costa counties (Park District, 2022a).

The Briones to Mt. Diablo Regional Trail, maintained by the Park District, is approximately 9.24 miles long, links the Briones Regional Park and Mt. Diablo State Park, and connects surrounding major regional trails, including the Contra Costa Canal Trail, California State Riding and Hiking Trail, and the Iron Horse Trail. The Briones to Mt. Diablo Regional Trail also connects schools, community facilities, and city parks and open space areas, including Briones Regional Park, Acalanes Ridge Open Space, Larkey Park, Heather Farm Park, Shell Ridge Open Space, Diablo Foothills Regional Park, and Mt. Diablo State Park. The trail is multi-use with paved and unpaved portions, and offers recreational opportunities including hiking, running, and bicycling (Park District, 2022b).

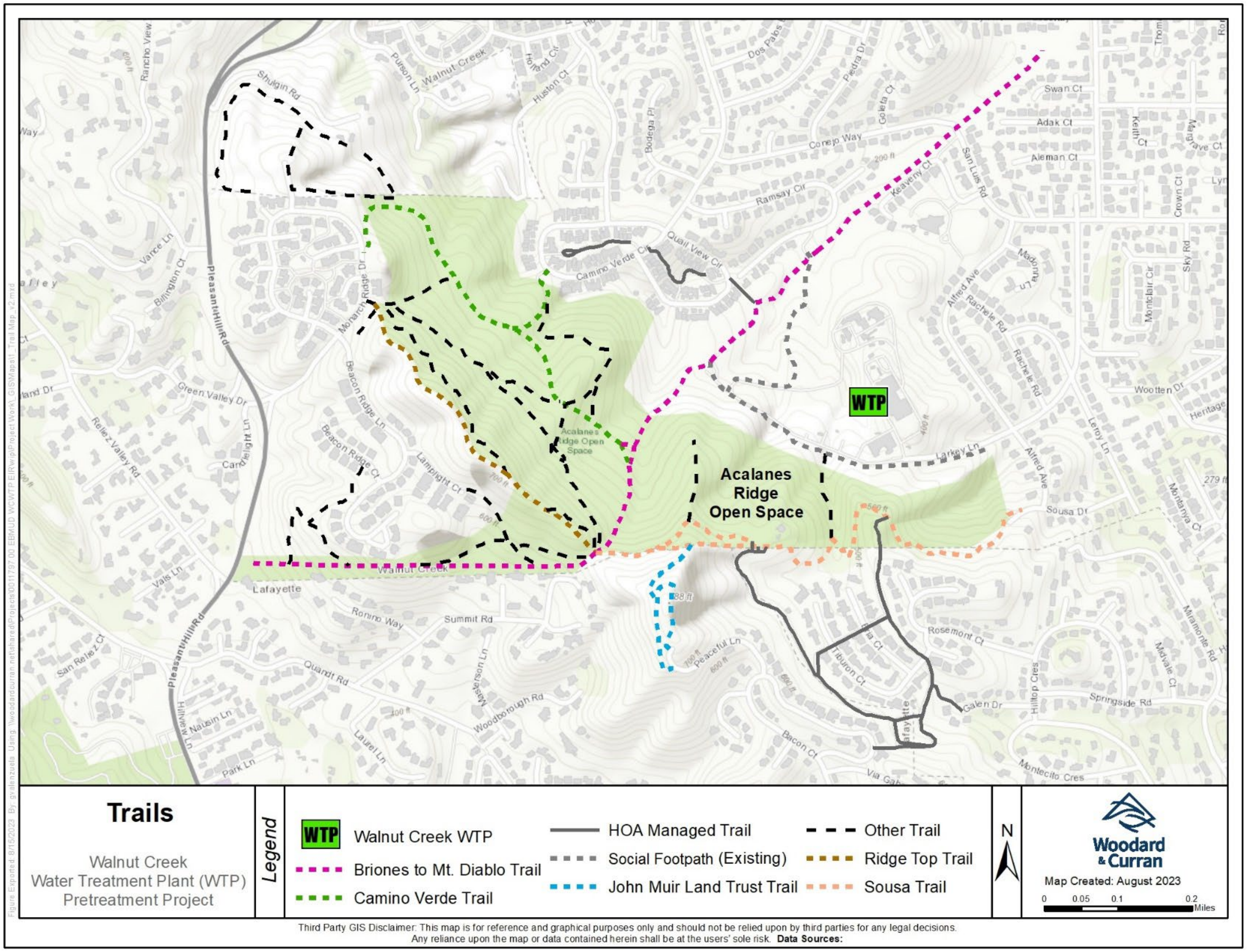
The Briones to Mt. Diablo Regional Trail is directly adjacent to the northern boundary of the Walnut Creek WTP and has views of the Walnut Creek WTP site. An approximately 0.25-mile section of the Briones to Mt. Diablo Regional Trail passes through the Walnut Creek WTP property (see **Figure 2-3**). On August 10, 2005, EBMUD issued the Park District a 25-year, renewable right of way license for use of the property to operate and maintain the Park District trail within the boundaries of EBMUD's property. Use of the property for recreation is subordinate to EBMUD's use of the property. Pertinent information from that license follows:

> *Should…suspension or limitation [of use of the trail] be necessary, Utility District shall provide Park District thirty (30) days' previous notice in writing except in cases of emergency repairs. Upon completion of any work [the Utility District] shall restore the ground surface as nearly as possible to its pre-existing grade but…shall not be liable for the restoration of any facilities or improvement installed by Park District including but not limited to paving, landscaping, bridges or drainage structures.*

The Briones to Mt. Diablo Regional Trail has high user volumes from Larkey Park to the Shell Ridge Open Space Area. The trail is particularly busy at the connection to the Contra Costa Canal Trail, just northeast of Larkey Park (EBMUD, 2000). Other trails that connect to the Briones to Mt. Diablo Regional Trail are the Sousa Trail, extending from the neighborhood streets southeast of the WTP, running west and joining the Briones to Mt. Diablo Regional Trail west of EBMUD's Larkey Reservoir; the Acalanes Ridge Trail, extending from the neighborhood streets south of the WTP, running north and connecting to the Briones to Mt. Diablo Regional Trail near EBMUD's Larkey Reservoir; and the Mokelumne Aqueduct Trail, which generally follows EBMUD's Mokelumne Aqueducts and joins the Briones to Mt. Diablo Regional Trail at its junction with the Contra Costa Canal Trail.

There are additional existing social footpaths connected to the Briones to Mt. Diablo Regional Trail that cross the EBMUD-owned Walnut Creek WTP property, as described in *Section 2.5.28, Redirected Social Footpaths*. **Figure 3.12-3** shows the approximate formal trail and footpath routes in the vicinity of the Walnut Creek WTP property.

Figure 3.12-3: Trail Routes at Walnut Creek WTP Site



East Bay Municipal Utility District

EBMUD owns and operates the 925-acre Lafayette Reservoir Recreation Area, which is managed for public recreation. The Lafayette Reservoir Recreation Area is located approximately 0.1 mile to the south of the Lafayette WTP, south of Mt. Diablo Boulevard. The Lafayette Reservoir Recreation Area is in all-year day-use area with opportunities for hiking, jogging, fishing, boating, and picnicking (EBMUD, 2022).

3.12.2 Regulatory Framework

This section describes policies and regulations related to recreation that may apply to the Project.

Federal and State Policies and Regulations

No federal or state policies or regulations are applicable to the Project's recreation component.

Local Policies and Regulations

Under Section 53091 of the California Government Code, EBMUD, as a local agency and utility district, is not subject to building and land use zoning ordinances for projects involving facilities for the production, generation, storage, treatment, or transmission of water. However, EBMUD's practice is to work with local jurisdictions and neighboring communities during project planning to consider local environmental protection policies for guidance.

Walnut Creek General Plan

The City of Walnut Creek General Plan is a long-range policy document intended to guide physical, economic, and environmental growth in the City of Walnut Creek. The City of Walnut Creek General Plan contains citywide elements, including an Open Space element, which contains goals and objectives to guide the acquisition and development of park and recreation areas and facilities. The City of Walnut Creek General Plan was adopted in 2006 and has a timeframe that extends to the year 2025. Applicable goals and objectives from the general plan are listed below.

Goal 3-1. Maintain and enhance open space lands.

> **Policy 3-1.1.** Protect, manage and improve open space lands.
>
> **Policy 3-1.2.** Protect and enhance the natural environment.
>
> **Policy 3-1.3.** Promote a variety of appropriate activities on open lands.
>
> **Policy 3-1.4.** Provide convenient public access to open space lands and trails.

Goal 3-4. Maintain and enhance open space lands.

> **Policy 3-4.2.** Maintain and improve the trails system, including to and within the open space lands.
>
> **Policy 3-4.3.** Promote safety on all trails and on the roads leading to them.

Lafayette General Plan

The City of Lafayette General Plan is a long-range policy document intended to guide physical, economic, and environmental growth in the City of Lafayette. The City of Lafayette General Plan contains citywide elements, including a Parks and Recreation element and an Open Space element. The City of Lafayette General Plan, which was adopted in 2002 and most recently amended in 2020, has a timeframe that extends to the year 2040. Applicable goals and objectives from the general plan are listed below.

Goal P-1. Provide an attractive system of parks, trails and recreation facilities throughout the City to meet the needs and interests of all ages and capabilities.

> **Policy P-1.4.** Operate, Maintain and Improve Facilities: Operate, maintain and improve facilities, as needed, to achieve high-quality and good design.

Goal P-3. Implement the Lafayette Master Trails Plan.

> **Policy P-3.3.** Local Use: Encourage residents to use the trail system.

Goal OS-1.

> **Policy OS-1.3.** Conserve a Variety of Open Space Features: Protect areas of special ecological significance, including ridges, hillsides, woodlands, wildlife corridors, riparian areas, steep slopes, prominent knolls, swales, and rock outcroppings.

Goal OS-4. Preserve areas with important biotic resources.

> **Policy OS-4.4.** The Developed Landscape: Protect important groves of trees and significant existing vegetation. Encourage the planting of native, drought-tolerant and fire-resistant species, as well as the planting of herbaceous species that have a high wildlife value. Avoid the cutting of mature trees.

3.12.3 Impact Analysis

Methodology for Analysis

Recreational impacts are assessed based on the Project's level of physical impact on existing and planned parks and recreational facilities in the Project's vicinity.

Significance Criteria

Consistent with Appendix G of the *CEQA Guidelines* an impact on recreation would be considered significant if the Project would:

1. 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.
2. Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

Impacts and Mitigation Measures

Impact REC-1: 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. (Criterion 1)

Because the Project would not increase population in the Project area the Project would not increase use of existing neighborhood or regional parks or recreational facilities.

Walnut Creek WTP Construction Phase 1

The closest recreational area to the Walnut Creek WTP is the Acalanes Ridge Open Space, which provides hiking and biking trails. The Briones to Mt. Diablo Regional Trail is directly adjacent to the northern boundary of the Walnut Creek WTP and the Sousa Trail is south of the Walnut Creek WTP. The Yarrow Trail and Ridge Top Trail are located within the Acalanes Ridge Open Space Area to the west. There are also social footpaths (community-established) both adjacent to and crossing the Walnut Creek WTP site, which would be temporarily closed during construction, potentially leading to temporary increases in use of other formal trails in the vicinity, such as the Sousa Trail and Briones to Mt. Diablo Regional Trail. However, this potential short-term adjustment in usage patterns would not be expected to lead to a substantial physical deterioration of the formal trails because the social footpaths would be closed for a relatively short period of time and recreational users who currently use the footpaths also currently use the formal trails in the area.

Additionally, the approximately 0.25-mile section of the Briones to Mt. Diablo Regional Trail that passes through the northern boundary of the Walnut Creek WTP property could be closed for extremely brief periods when construction vehicles need to cross the trail to work on the combined reclaimed metering vault (Facility #7 in **Figure 2-3**). The closure would occur infrequently for no more than a couple of minutes for each occurrence, and trail users would briefly wait for the construction vehicles to cross or temporarily be directed on a short detour around a small portion of the trail if feasible.

In accordance with the August 10, 2005 25-year, renewable right-of-way license issued by EBMUD to the Park District to allow the Park District use of the Walnut Creek WTP property to operate and maintain the Park District trail within the boundaries of EBMUD's property, EBMUD would provide the Park District thirty days' previous notice in writing prior to the initiation of any construction activity that would affect the Briones to Mt. Diablo Regional Trail. During construction, closed social footpaths on EBMUD property would be clearly marked with EBMUD signage indicating the duration of the temporary footpath closure.

Because construction impacts related to closure of social footpaths during construction and redirecting portions of social footpaths at the Walnut Creek WTP are not expected to lead to substantial deterioration of existing recreational areas, would be temporary in nature, and would ultimately support public recreational uses consistent with local plans and policies, the impact is less than significant.

Walnut Creek WTP Construction Phase 2

Throughout the duration of Phase 2 construction, the social footpaths crossing the Project site would need to be temporarily closed to ensure public safety including portions of social footpaths relocated during Phase 1.

The temporary closure of the social footpaths crossing the Project site could potentially lead to temporary increases in use of other formal trails in the vicinity, such as the Sousa Trail and Briones to Mt. Diablo Regional Trail. However, this potential short-term adjustment in usage patterns would not be expected to lead to a substantial physical deterioration of the formal trails because the social footpaths would be closed for a relatively short period of time and recreational users who currently use the footpaths also currently use the formal trails in the area.

Because construction impacts related to redirecting portions of the social footpaths at the Walnut Creek WTP are not expected to lead to substantial deterioration of existing recreational areas, would be temporary in nature, and would ultimately support public recreational uses consistent with local plans and policies, the impact is less than significant.

Lafayette WTP Construction

The Lafayette Reservoir recreational area is on the opposite side of Mt. Diablo Boulevard from the Lafayette WTP and construction at the Lafayette WTP would not affect the Lafayette Reservoir area or increase use of the recreation area resulting in a less than significant impact.

Operation and Maintenance

The long-term use of the surrounding open space and local trails would not be expected to increase as a result of the Project because operation and maintenance activities would be similar to existing operations and would be confined to the existing boundaries of the Lafayette and Walnut Creek WTPs. Operation and maintenance would thus not affect any recreational facilities.

<u>Significance Determination Before Mitigation</u>

Less than significant.

<u>Mitigation Measures</u>

None required.

Impact REC-2: Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment. (Criterion 2)

Walnut Creek WTP Construction Phase 1

Phase 1 of the Project includes the permanent redirection of existing social footpaths crossing the northwest portion of the Walnut Creek WTP near the proposed gravity thickeners and the pre-ozone pumping plants. The construction involved with the redirection of the social footpaths could have some adverse physical effects on the environment. However, the redirection of social footpaths allowing passive recreation is consistent with local goals and policies that encourage the provision of recreational opportunities and supports Park District policies to provide access to parklands and trails. The redirection of social footpaths crossing the Walnut Creek WTP site is not expected to lead to a substantial physical deterioration of existing formal trails or social footpaths or nearby recreation and open space areas. Social footpath redirection is part of the project description and would not result in any additional impacts.

Because construction impacts related to redirecting portions of social footpaths at the Walnut Creek WTP are not expected to lead to substantial deterioration of existing recreational areas, would be temporary in nature, and would ultimately support public recreational uses consistent with local plans and policies, the impact is less than significant.

Walnut Creek WTP Construction Phase 2

Construction under Phase 2 of the Project at the Walnut Creek WTP does not include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

Throughout the duration of Phase 2 construction, the social footpaths crossing the Project site would need to be temporarily closed to ensure public safety including portions of social footpaths relocated during Phase 1.

Because construction at the Walnut Creek WTP during Phase 2 does not include recreational facilities, the impact is less than significant.

Lafayette WTP Construction

The portion of the Project at the Lafayette WTP does not include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment. The Lafayette Reservoir Recreation Area is on the opposite side of Mt. Diablo Boulevard from the Lafayette WTP. Construction at the Lafayette WTP would not affect the Lafayette Reservoir Recreation Area or increase use of the recreation area. Construction of the Lafayette WTP is not expected to result in the closure or relocation of trails, parks, or other open spaces in the vicinity.

Because construction at the Lafayette WTP does not include recreational facilities and is not expected to affect recreation areas in the vicinity, the impact is less than significant.

Operation and Maintenance

Outside of construction periods for Phase 1 and Phase 2 of the Project, the redirected social footpaths would be open to the public for recreation purposes. By redirecting the social footpaths around new facilities for public use, the Project would be consistent with local goals and policies encouraging the provision of recreational opportunities and supports Park District policies to provide public access for recreation uses.

The portions of the social footpaths relocated outside of the Project footprint would be kept as close to their existing location as possible. **Figure 2-3** shows the location of the existing social footpaths and the proposed location of the redirected footpaths.

Operation and maintenance of the redirected social footpaths would be comparable to use under pre-Project levels, as the Project would not significantly change the overall footpath length or character. The long-term use of the social footpaths and the surrounding open space and local trails would not be expected to increase as a result of the Project.

Because the redirected social footpaths would be kept as close to their existing state and location as possible, and their operation and maintenance would not increase the long-term use of the trails or surrounding recreation areas, the impact would be less than significant.

Significance Determination Before Mitigation

Less than significant.

Mitigation Measures

None required.

Cumulative Impact Analysis

The cumulative impact analysis considers whether the impacts of future construction projects within the vicinity of the Walnut Creek and Lafayette WTPs coincide with the impacts from the Project. A significant cumulative impact would result if impacts to recreational facilities from the Project occur simultaneously with impacts from future planned build-out causing substantial degradation of existing recreational facilities.

The Project is not anticipated to generate population increases or significant increases in recreational users in the Project area that, together with planned build-out, would cumulatively contribute to degradation of existing parks or recreational facilities.

The Project would redirect the social footpaths that traverse the Walnut Creek WTP site and support the continuation of recreational opportunities in the City of Walnut Creek and within the Park District trail network. Cumulative projects that would be constructed at the Walnut Creek WTP and Lafayette WTP are not expected to affect recreational facilities. The Project would have no recreational impacts in the City of Lafayette. Thus, the Project would not contribute to cumulative impacts related to recreation.

3.12.4 References

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3.13 Transportation

This section describes the physical, environmental, and regulatory setting for traffic and transportation relevant to the Project, identifies the significance criteria for determining environmental impacts, and evaluates the potential impacts on transportation resources that could result from the Project.

3.13.1 Environmental Setting

The transportation and circulation study area extends beyond the Walnut Creek and Lafayette WTPs (Project sites) and includes roadways and transportation facilities that could be affected by the Project. **Figure 3.13-1** shows roadways in the vicinity of the Walnut Creek WTP, and **Figure 3.13-2** shows roadways in the vicinity of the Lafayette WTP. The existing setting includes descriptions of roadways and documentation of existing vehicular traffic volumes, transit service, bicycle and pedestrian facilities, and parking conditions.

Roadway Network

Regional Access

The Walnut Creek WTP is located approximately 0.9 miles west of Interstate 680 (I-680) in the City of Walnut Creek, near its border with the City of Lafayette. Primary freeway access to the Walnut Creek WTP is provided via I-680, which connects to State Route 24 (SR-24). The Lafayette WTP is adjacent to eastbound SR-24, directly across the street from EBMUD's Lafayette Reservoir. Primary freeway access to the Lafayette WTP is provided via SR-24.

I-680 is a regional freeway extending between U.S. 101 in San Jose and Interstate 80 in Fairfield. In the vicinity of the Walnut Creek WTP, I-680 runs in a north-south direction and has five lanes in the northbound direction and six lanes in the southbound direction. Access to the Project area from I-680 is provided via off-ramps at San Luis Road and Penniman Way. Access from the Walnut Creek WTP to I-680 includes on-ramps at San Luis Road and Lawrence Way. The average daily traffic volume on I-680 is approximately 219,000 vehicles at North Main Street (Caltrans, 2020).

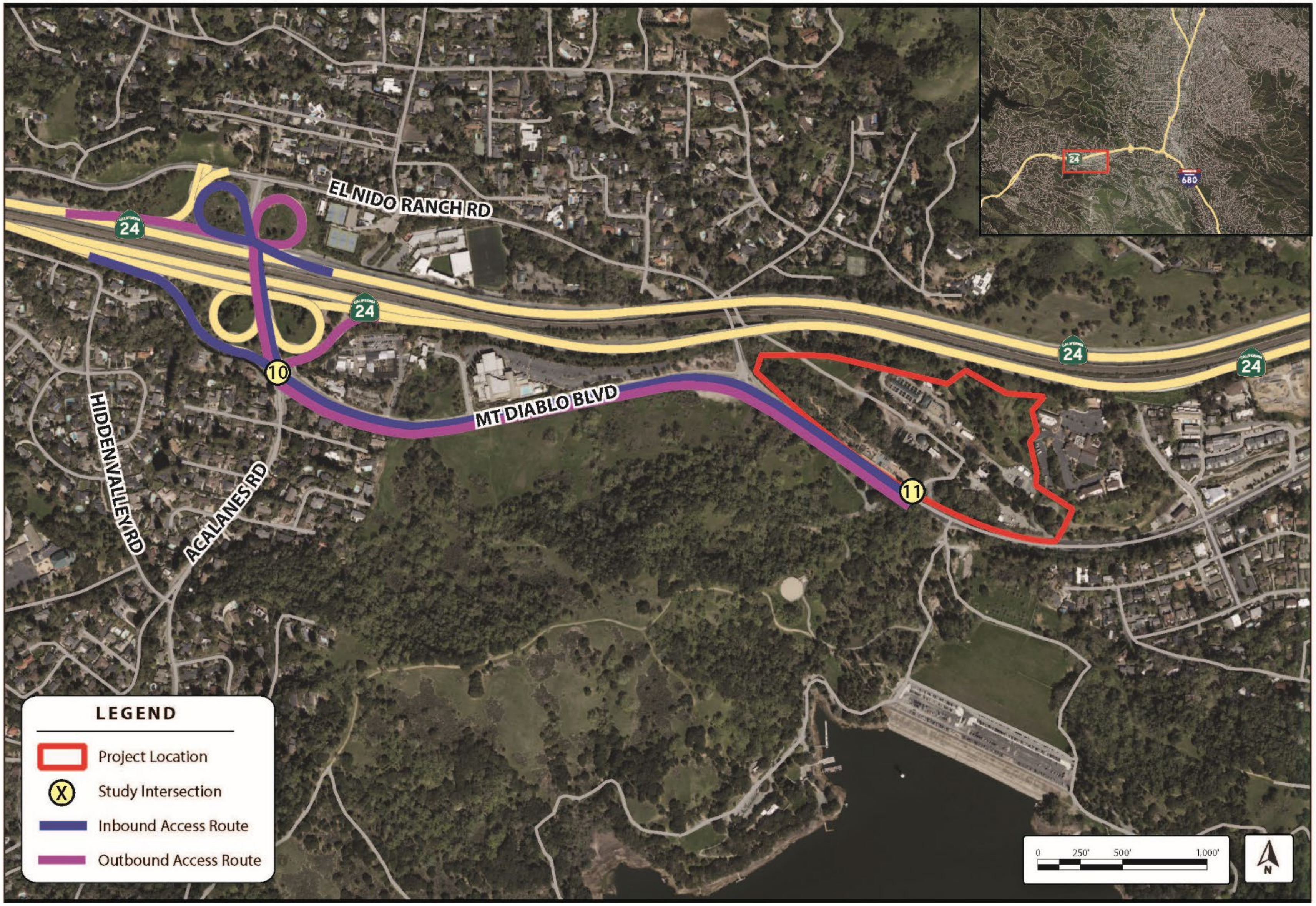
SR-24 is an east-west freeway that connects I-680 in Walnut Creek with I-580 in Oakland. In the vicinity of the Lafayette WTP, SR-24 has four lanes in each direction, with Bay Area Rapid Transit (BART) tracks in the middle. The average daily traffic volume on SR-24 is approximately 174,000 vehicles at the interchange with I-680 (Caltrans, 2020).

Local Access

Local roadways providing access to the Project sites are described below, with the functional designations obtained from the City of Walnut Creek General Plan (City of Walnut Creek, 2006) and the City of Lafayette General Plan (City of Lafayette, 2012). The proposed access routes shown in **Figure 3.13-1** and **Figure 3.13-2** are based on previous EBMUD projects at the two Project sites, and on discussions with the City of Walnut Creek and City of Lafayette.

Figure 3.13-1: Walnut Creek WTP and Access Roads

Figure 3.13-2: Lafayette WTP and Access Roads



Walnut Creek

Larkey Lane is a north-south roadway that extends between Geary Road and the entrance to the Walnut Creek WTP driveway. Larkey Lane has one travel lane in each direction. There are concrete sidewalks on both sides of Larkey Lane from the Walnut Creek WTP site to approximately 100 feet north of Alvarado Avenue. There are no bicycle facilities along Larkey Lane. On-street parking spaces are intermittently located along the frontage of residential uses. Larkey Lane is designated as a Local Street in the City of Walnut Creek General Plan.

Alfred Avenue is a north-south roadway that extends between Sousa Drive and San Luis Road. Alfred Avenue has one travel lane in each direction and on-street parking on both sides of the street. There are no bicycle facilities along Alfred Avenue. Alfred Avenue is designated as a Local Street in the City of Walnut Creek General Plan.

San Luis Road is an east-west roadway that extends between Conejo Way and SOS Drive. San Luis Road has one travel lane and Class III bike route in each direction and intermittent on-street parking on both sides of the street. San Luis Road is designated as a Collector Street in the City of Walnut Creek General Plan. The City of Walnut Creek prohibits trucks over three tons from traveling along San Luis Road between Buena Vista Avenue and the I-680 on-ramp/off-ramp, although vehicles used for construction and repairs of utilities may be exempted from this restriction. (Walnut Creek Municipal Code Title 3, Chapter 5, Article 13).

Buena Vista Avenue is a north-south roadway that extends between Geary Road and Hillsdale Avenue. Buena Vista Avenue has one travel lane and Class III bicycle route in each direction and intermittent on-street parking along both sides of the street. Buena Vista Avenue is designated as a Collector Street in the City of Walnut Creek General Plan. The City of Walnut Creek prohibits trucks over three tons from traveling along Buena Vista Avenue between Parkside Drive and Geary Road, although vehicles used for construction and repairs of utilities may be exempted from this restriction. (Walnut Creek Municipal Code Title 3, Chapter 5, Article 13).

North Main Street is a north-south roadway that extends between Mt. Diablo Boulevard and Astrid Drive. North Main Street has two travel lanes in each direction, with intermittent on-street parking along both sides of the street. There are no bicycle facilities along North Main Street. In the Project vicinity north of I-680, North Main Street is designated as a Route of Regional Significance in the City of Walnut Creek General Plan.

Penniman Way is a 410-foot-long east-west roadway that extends between North Main Street and Lawrence Way. Penniman Way has one travel lane in the westbound direction and two lanes in the eastbound direction, with no permitted parking on either side of the street. There are no bicycle facilities along Penniman Way. Penniman Way is designated as a Local Street in the City of Walnut Creek General Plan.

Parkside Drive is an east-west roadway that extends between Overlook Drive and North Civic Drive. West of I-680, Parkside Drive has one travel lane and Class III bicycle route in each direction. There is no parking along either side of the street to the east of Rivera Avenue. To the west of Riviera Avenue, there is intermittent parking along both sides of the street. Parkside Drive is designated as a Local Street in the City of Walnut Creek General Plan. The City of Walnut Creek prohibits trucks over three tons from traveling along Parkside Drive between Hilltop Drive and Oak Road, although vehicles used for construction and repairs of utilities may be exempted from this restriction.

Lawrence Way is a northbound one-way roadway that extends from North Main Street to Penniman Way. Lawrence Way has two northbound travel lanes, with no permitted parking along either side of the street. There are no bicycle facilities along Lawrence Way. Lawrence Way is designated as a Local Street in the City of Walnut Creek General Plan.

Lafayette

Acalanes Road is a north-south roadway that extends between El Nido Ranch Road and Glorietta Boulevard. Acalanes Road varies between one and two travel lanes in each direction, with intermittent on-street parking along the frontage of residential uses. There are Class II bicycle lanes along both sides of Acalanes Road between Hidden Valley Road and Mt. Diablo Boulevard. The Lafayette General Plan does not provide specific street designations for Acalanes Road.

Mt. Diablo Boulevard is an east-west roadway that extends between Acalanes Road and Pleasant Hill Road. In the vicinity of the Lafayette WTP, Mt. Diablo Boulevard has two travel lanes and a Class II bicycle lane in each direction, with no permitted parking on either side of the street. Mt. Diablo Boulevard is designated as an Arterial Street in the City of Lafayette General Plan.

Existing Traffic Conditions

Key terms that describe transportation concepts include:

Level of Service (LOS) is a description of the roadway performance metric for the average vehicle delay of the total number of vehicle movements through an intersection. Intersection level of service ranges from A, which indicates free flow or excellent conditions with short delays, to F, which indicates congested or overloaded conditions with extremely long delays.

Vehicle Miles Traveled (VMT) is a description of the unit of measurement for the total number of miles traveled by vehicles through and within a specific regional boundary or defined geographic area.

Intersection Level of Service

Existing traffic conditions were evaluated at the major intersections in the vicinity of the Project sites that would be directly affected by the traffic generated by the Project. The following 11 study intersections (**Figure 3.13-3** and **Figure 3.13-4**) were evaluated:

1. Larkey Lane / Alfred Avenue (two-way yield controlled)
2. San Luis Road / Larkey Lane (two-way stop controlled)
3. San Luis Road / Buena Vista Avenue (all-way stop controlled)
4. San Luis Road / I-680 southbound on- and off-ramps (one-way stop controlled)
5. San Luis Road / North Main Street (signalized)
6. North Main Street / Penniman Way (signalized)
7. North Main Street / Parkside Drive (signalized)
8. Parkside Drive / Lawrence Way (signalized)
9. Penniman Way / I-680 northbound on-ramp (signalized)
10. Acalanes Road / Mt. Diablo Boulevard (signalized)
11. Mt. Diablo Boulevard / Lafayette WTP Driveway (uncontrolled)

Figure 3.13-3: Walnut Creek WTP - Traffic Volumes at Study Intersections

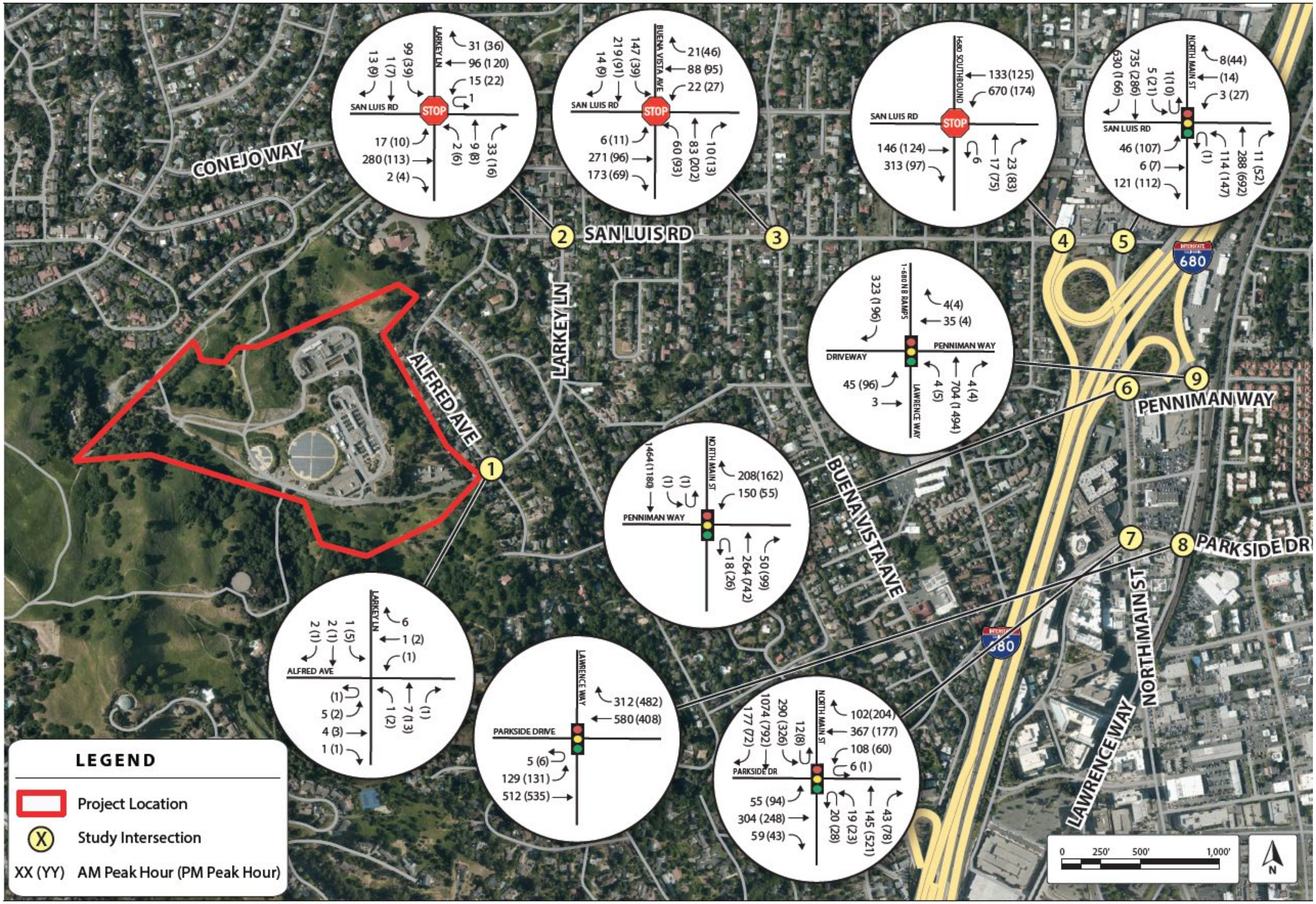
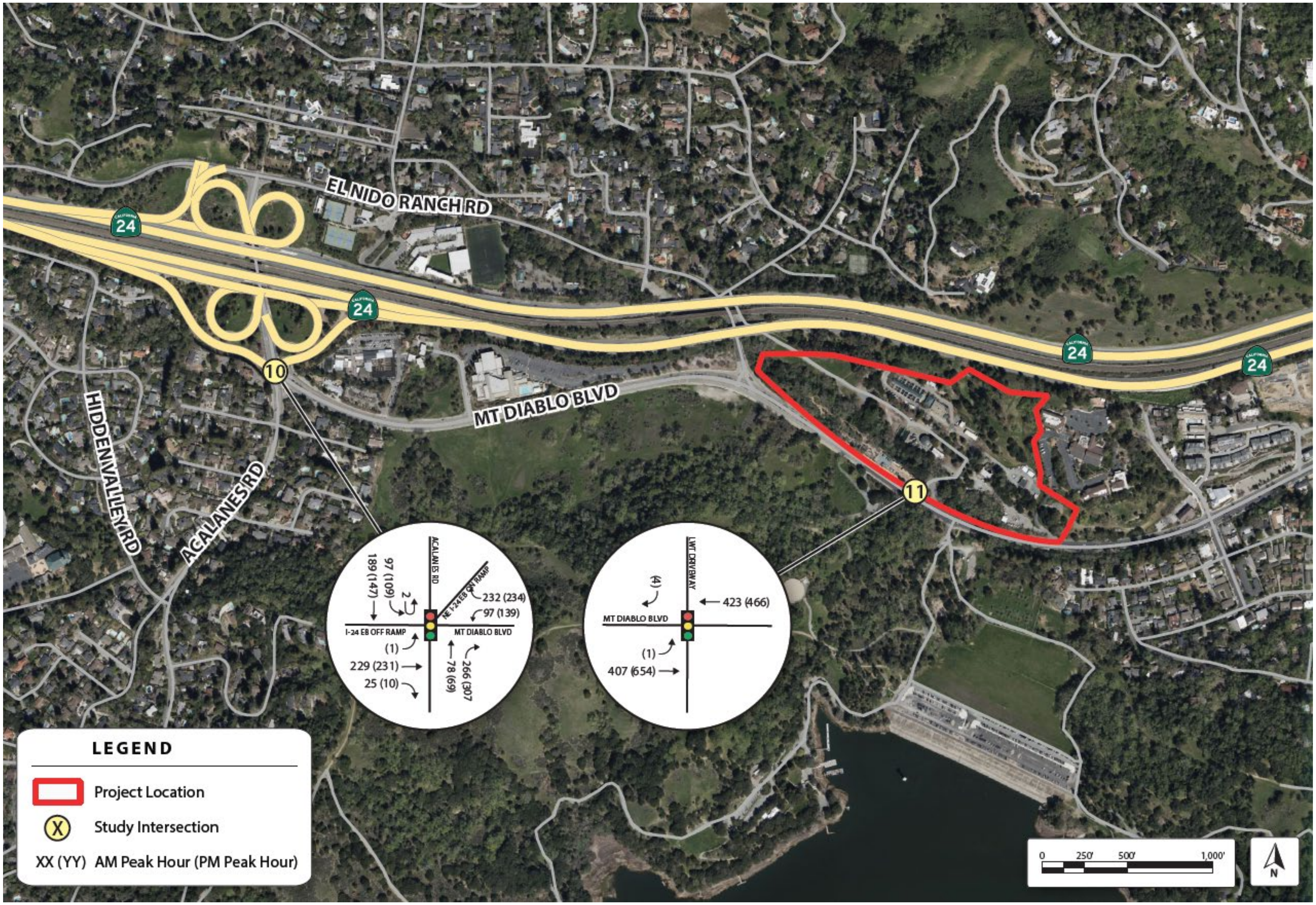


Figure 3.13-4: Lafayette WTP - Traffic Volumes at Study Intersections



Nine of the 11 intersections are within the City of Walnut Creek's jurisdiction, while the remaining two intersections (i.e., Acalanes Road/Mt. Diablo Boulevard and Mt. Diablo Boulevard/Lafayette WTP Driveway) are within the City of Lafayette's jurisdiction. The LOS for each intersection was analyzed for the peak 60-minute period during the weekday AM (7:00 a.m. to 9:00 a.m.) and PM (4:00 p.m. to 6:00 p.m.) commute periods. Traffic turning movement counts were collected on March 24, 2022, during the AM and PM peak periods. The intersections were evaluated using the *2010 Highway Capacity Manual* (Transportation Research Board 2010) operations methodology, which determines the capacity for each lane group approaching the intersection. LOS is based on the average stopped delay (in seconds) per vehicle for the various movements within the intersection.

Table 3.13-1 presents the existing LOS and delay for the study intersections. Most intersections were found to operate at acceptable LOS during the AM and PM peak hours. The only exception is the intersection of San Luis Road and I-680 southbound on-ramp/off-ramp, which operates at LOS F during the AM peak hour due to high traffic volumes entering the I-680 southbound freeway on-ramp from the eastbound right-turn and westbound left-turn movements on San Luis Road.

Table 3.13-1: Intersection Level of Service under Existing Condition

Intersection	Control[1]	AM Peak Hour		PM Peak Hour	
		Delay[2]	LOS[2]	Delay[2]	LOS[2]
1. Larkey Lane / Alfred Avenue	TWYC	9.2	A	9.2	A
2. San Luis Road / Larkey Lane	TWSC	10.5	B	9.5	A
3. San Luis Road / Buena Vista Avenue	AWSC	28.4	D	10.9	B
4. San Luis Road / I-680 Southbound On- and Off-Ramps	TWSC	**>50**	**F**	6.0	A
5. San Luis Road / North Main Street	Signalized	30.3	C	42.4	D
6. North Main Street / Penniman Way	Signalized	13.1	B	18.0	B
7. North Main Street / Parkside Drive	Signalized	34.4	C	37.8	D
8. Parkside Drive / Lawrence Way	Signalized	9.4	A	19.7	B
9. Penniman Way / I-680 Northbound On-Ramp	Signalized	9.9	A	18.4	B
10. Acalanes Road / Mt. Diablo Boulevard	Signalized	16.1	B	18.4	B
11. Mt. Diablo Boulevard / Lafayette WTP Driveway	TWSC	0.0	A	10.8	B

Source: CHS Consulting Group, 2022

[1] AWSC = all-way stop-controlled intersection; TWSC = two-way stop-controlled intersection; TWYC = two-way yield-controlled intersection; OWSC = one-way stop-controlled intersection; LWT = Lafayette Water Treatment driveway

[2] The LOS and delay (in seconds per vehicle) for two-way stop-controlled intersections represent conditions for the critical approach, and the LOS and delay for all-way stop-controlled or signalized intersections represent conditions for the overall intersection.

Transit Network

The County Connection operates two bus routes (Routes 9 and 98X) in the vicinity of the Walnut Creek WTP and two school routes (Routes 625 and 626) in the vicinity of the Lafayette WTP. **Figure 3.13-5** and **Figure 3.13-6** show the existing transit routes and stop locations near the Walnut Creek WTP and Lafayette WTP, respectively.

Figure 3.13-5: Walnut Creek WTP – Transit Routes

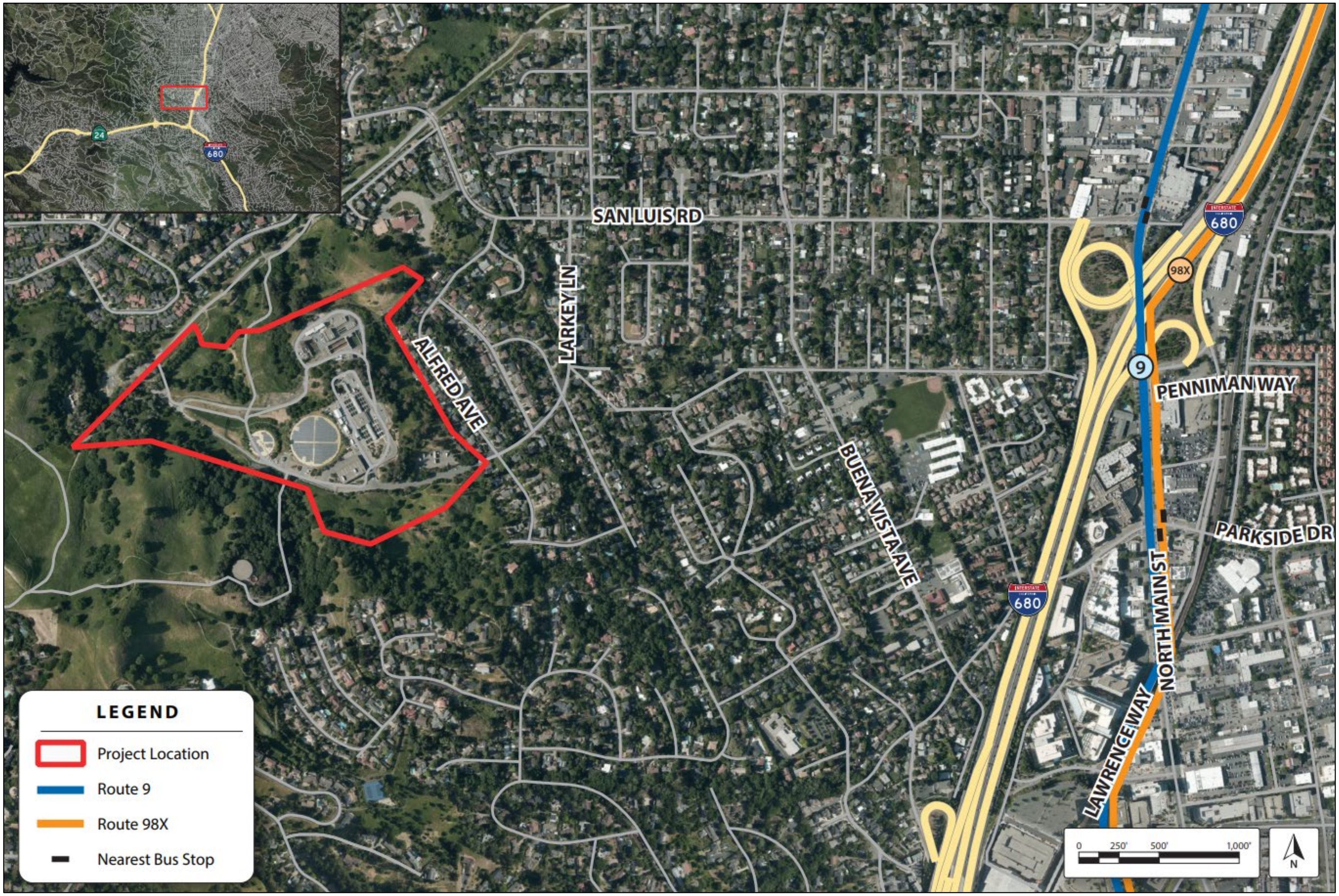
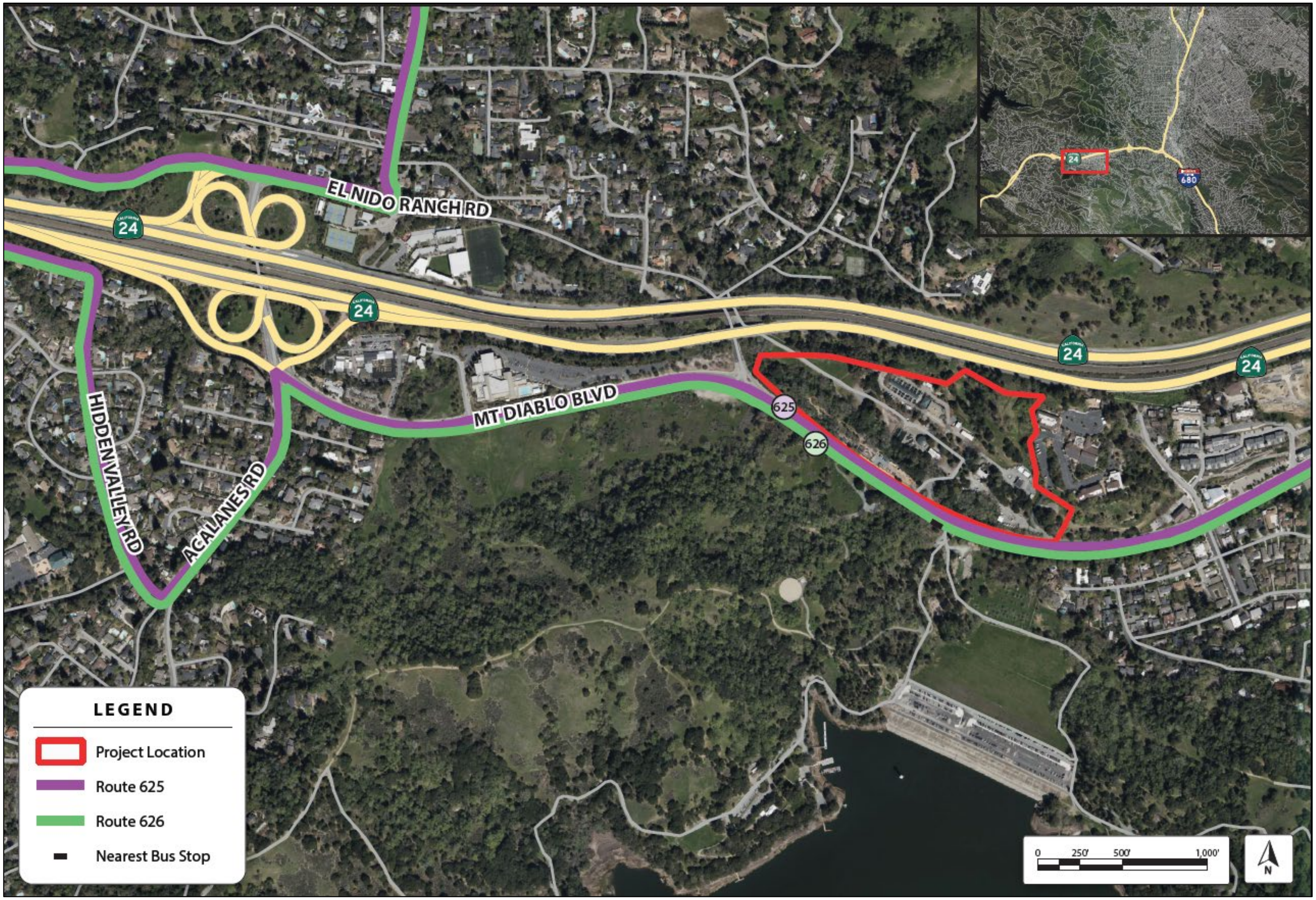


Figure 3.13-6: Lafayette WTP – Transit Routes



Route 9 operates between Diablo Valley College in the City of Pleasant Hill and the Walnut Creek BART Station. Hourly service is provided from 6:00 a.m. to 8:00 p.m. throughout the day. The nearest bus stop to the Walnut Creek WTP for Route 9 is located at the intersection of San Luis Road and North Main Street, approximately one mile northeast of the Walnut Creek WTP site. Route 98X operates between the Amtrak Station in the City of Martinez and the Walnut Creek BART Station. Service is provided every 45 minutes from 5:40 a.m. to 6:30 p.m. throughout the day. The nearest bus stop to the Walnut Creek WTP for Route 98X is located at the intersection of North Main Street and Parkside Drive, approximately 0.9 miles east of the Walnut Creek WTP site.

Routes 625 and 626 operate along Mt. Diablo Boulevard in the City of Lafayette, providing service to Acalanes High School, Miramonte High School, Orinda Middle School, Saint Mary's College, and Stanley Middle School. The nearest bus stop to the Lafayette WTP is located along the south side of Mt. Diablo Boulevard near the entrance to the Lafayette Reservoir Recreational Area (approximately 600 feet south of the Lafayette WTP). Routes 625 and 626 make two stops a day, around 8:00 a.m. and 4:00 p.m. on a typical weekday.

Regional transit service is primarily provided by BART at the Walnut Creek BART Station, located approximately one mile southeast of the Walnut Creek WTP, and the Lafayette BART Station, located approximately one mile east of the Lafayette WTP.

Bicycle Network

Bikeways are typically classified as Class I, Class II, or Class III facilities. Class I bikeways are bike paths with exclusive rights-of-way for use by bicyclists, with minimal cross flow by motorized vehicles. Class II bikeways are bike lanes striped within the paved areas of roadways and established for the exclusive use of bicyclists. Class III bikeways are signed bike routes that enable bicycles to share streets with vehicles.

Figure 3.13-7 shows the existing bicycle facilities near the Walnut Creek WTP as identified based on direct observations of each street. In the vicinity of the Walnut Creek WTP, there are Class III bike routes along San Luis Road between Larkey Lane and North Main Street, along Buena Vista Avenue between Parkside Drive and San Luis Road, and along Parkside Drive between Buena Vista Avenue and Riviera Avenue.

In the vicinity of the Lafayette WTP, there are Class II bicycle lanes along Mt. Diablo Boulevard between Acalanes Road and Mt. Diablo Court, and along Acalanes Road between Mt. Diablo Boulevard and Glorietta Boulevard (see **Figure 3.13-8**) described in the City of Lafayette Bikeways Master Plan (City of Lafayette, 2006). In addition, the City of Lafayette Bikeways Master Plan includes a proposed bicycle facility along both sides of Acalanes Road between El Nido Ranch Road and Mt. Diablo Boulevard; this proposed facility has not been implemented as of October 2022.

In the vicinity of the Walnut Creek and Lafayette WTPs, bicycle volumes are generally low. Based on bicycle counts collected on Thursday March 24, 2022, there were no bicyclists along Larkey Lane or Mt. Diablo Boulevard during the weekday AM (7:00 a.m. to 9:00 a.m.) or PM (4:00 p.m. to 6:00 p.m.) peak period. The highest volume of bicyclists (6 bicyclists) occurred in the vicinity of the Walnut Creek WTP at the intersection of Buena Vista Avenue and San Luis Road during the AM peak hour.

Figure 3.13-7: Walnut Creek WTP – Bicycle and Pedestrian Facilities

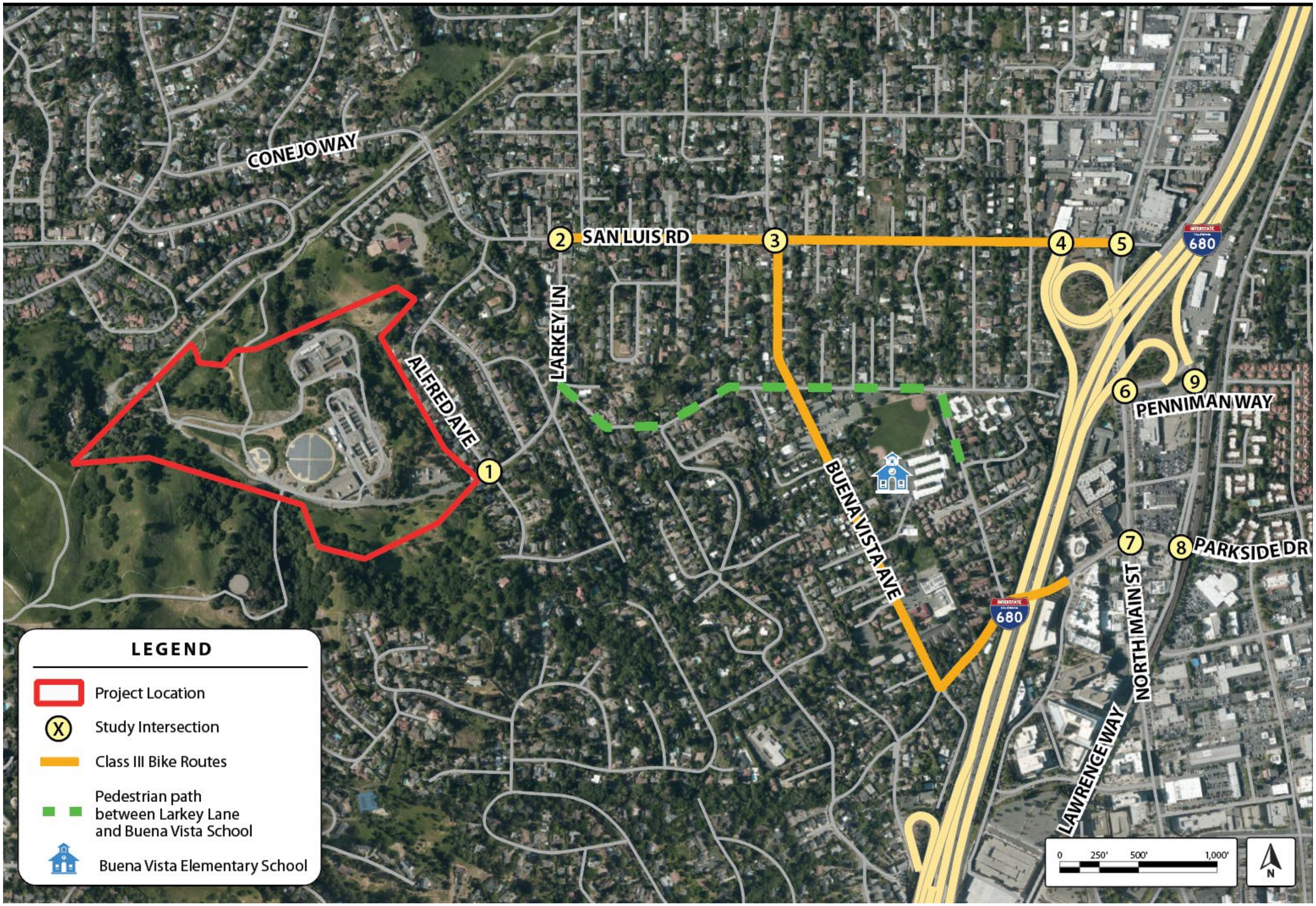
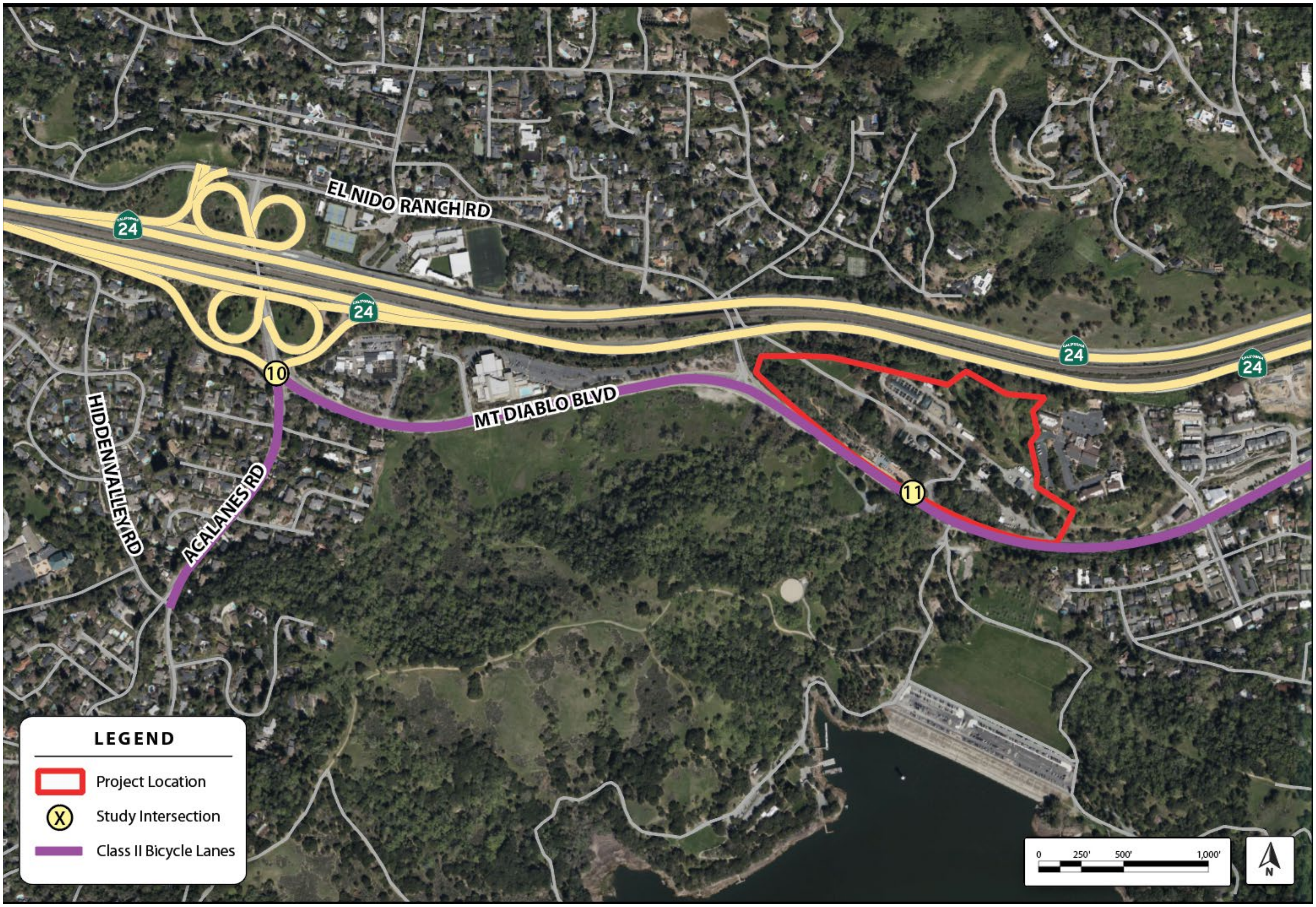


Figure 3.13-8: Lafayette WTP – Bicycle Facilities



Pedestrian Circulation

Pedestrian facilities are limited near the Walnut Creek WTP with intermittent sidewalks and no marked crosswalks on Larkey Lane. There are concrete sidewalks on both sides of Larkey Lane from the Walnut Creek WTP site up to approximately 100 feet north of Alvarado Avenue and then no sidewalks north to San Luis Road. There are intermittent concrete sidewalks along San Luis Road. There is an east-west pedestrian path on Alvarado Avenue located approximately 0.5 miles east of the Walnut Creek WTP that is used by local residents and students walking east to Buena Vista Elementary School, transit facilities or downtown Walnut Creek. There is no marked crosswalk at Larkey Lane where the pedestrian path begins on Alvarado Avenue, so residents jaywalk across Larkey Lane where convenient. In the vicinity of the Lafayette WTP, there is a sidewalk along the south side of Mt. Diablo Boulevard only.

Pedestrian counts were collected at the 11 study intersections listed in **Table 3.13-1** on Thursday March 24, 2022. **Appendix J** includes detailed count sheets for all 11 intersections.

In the vicinity of the Walnut Creek WTP, there were five pedestrians at the Larkey Lane and Alfred Avenue intersection during the weekday AM (7:00 a.m. to 9:00 a.m.) peak hour and three pedestrians during the PM (4:00 p.m. to 6:00 p.m.) peak hour. There is no marked crosswalk at this location. The highest pedestrian volumes occurred at the North Main Street and Parkside Drive intersection, with approximately 73 pedestrians during the weekday AM peak hour and approximately 48 pedestrians during the PM peak hour. This intersection has crosswalks and crossing lights to manage the pedestrian traffic.

In the vicinity of the Lafayette WTP, there were 12 pedestrians walking along the south side of Mt. Diablo Boulevard, one person walking along the north side of Mount Diablo, and one person jaywalking across Mt. Diablo Boulevard during the weekday AM peak hour. During the PM peak hour, there were 15 pedestrians walking along the south side of Mt. Diablo Boulevard and one person jaywalking across Mt. Diablo Boulevard.

3.13.2 Regulatory Framework

This section describes transportation-related laws and regulations that may apply to the Project.

Federal Policies and Regulations

No transportation-related federal policies or regulations apply to the Project.

State Policies and Regulations

California Vehicle Code

According to the Caltrans Transportation Permits Manual Chapter 5 Section 502.2, the movements of permit vehicles and/or loads in excess of 10 feet in width are restricted on San Francisco vicinity freeways between the hours of 7:00 a.m. and 9:00 a.m. and between the hours of 4:00 p.m. and 6:00 p.m. Monday through Friday.

Local Policies and Regulations

Under Section 53091 of the California Government Code, building and zoning ordinances of cities and counties do not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water. However, EBMUD's practice is to work with local jurisdictions and neighboring communities during project planning and to consider local environmental protection policies for guidance.

City of Walnut Creek General Plan

The City of Walnut Creek General Plan establishes the following minimum acceptable peak hour level of service standards for streets and intersections:

- Residential local streets and intersections: LOS B (v/c ratio = 0.60 to 0.69) [1]
- Collector streets and intersections: LOS D (v/c = 0.80 to 0.84)
- Arterial streets and intersections: LOS D (v/c = 0.85 to 0.89)
- Core Area Roadways and intersections: LOS low E (v/c ratio = 0.9 to 0.94)[2]

In addition, the Walnut Creek General Plan lays out goals related to transit, bicycle and pedestrian circulation. However, the General Plan's transit goals are not applicable to the Project because they are primarily focused on increasing transit ridership and service to employment for permanent land use development projects rather than temporary construction projects.[3] Applicable goals related to bicycle and pedestrian circulation from the General Plan are listed below.

Goal 4: Protect residential neighborhoods from through traffic, speeding, and nonresidential parking

Goal 5: Provide a safe and attractive environment for bicycle travel throughout the community

Goal 6: Provide a safe and attractive walking environment accessible to all

Goal 12: Provide convenient and adequate parking.

City of Walnut Creek Municipal Codes

The City of Walnut Creek Municipal Code Title 3, Chapter 5 establishes regulations related to traffic safety. Article 13 includes designated Truck Routes. In the vicinity of the Walnut Creek WTP, Lawrence Way and North Main Street are designated as Truck Routes, and vehicles weighing more than 3 tons are not permitted on Parkside Drive, Buena Vista Avenue, and San Luis Road. However, exemptions apply to any vehicle owned by a utility or licensed contractor while necessarily in use in the construction, maintenance, installation, or repair of any utility or public works project. Oversized load permits are required for vehicles that are wider than 8.5 feet, taller than 14 feet, longer than 65 feet, or a single vehicle 40 feet in length and heavier than 80,000 pounds, with truck travel typically permitted between 9:00 a.m. and 3:30 p.m. on weekdays only unless provided with a written approval from the City of Walnut Creek (City of Walnut Creek, n.d.).

[1] The v/c (volume-to-capacity) ratio indicates a ratio of hourly volume of traffic to capacity as a measure of congestion.
[2] The Core Area is bounded by I-680, Iron Horse Trail, and Walden Road.
[3] Transit-related goal in the General Plan (Goal 7) states "Increase transit ridership and service to employment, schools, shopping and recreation."

City of Lafayette General Plan

The City of Lafayette General Plan establishes the following minimum acceptable peak hour level of service standards for intersections:

- Downtown Intersections: LOS D (v/c = 0.85 to 0.89)
- Intersections Outside of Downtown: LOS D (v/c = 0.80 to 0.84)

EBMUD Standard Construction Specifications

EBMUD's Standard Construction Specifications and Procedures apply to all contractors completing work for EBMUD, and to work completed by EBMUD staff. The following EBMUD practices and procedures are applicable to transportation:

- **EBMUD Standard Construction Specification 01 32 36, Video Monitoring and Documentation**

  This section requires the Contractor to provide documentation of both pre- and post-construction pavement conditions in the project vicinity, and includes provisions for long-term transportation safety (EBMUD, 2022).

- **EBMUD Standard Construction Specification 01 55 26, Traffic Regulation**

  EBMUD Standard Construction Specification 01 55 26, Traffic Regulation (EBMUD, 2017) requires compliance with the California Manual on Uniform Traffic Control Devices. Standard Construction Specification 01 55 26 also requires preparation of a Traffic Control Plan, which would include implementation of various measures, depending on Project-specific construction impacts; the characteristics of the existing transportation network; and daily and peak hour vehicle, pedestrian, and bicycle volumes. As outlined in Standard Construction Specification 01 55 26, the Project's Traffic Control Plan would include, but would not necessarily be limited to, the following measures:

  - Circulation and detour plans to minimize impacts to local street circulation and use of haul routes to minimize truck traffic on local roadways to the extent possible (Section 1.2 (A.1)).
  - A description of emergency response vehicle access. If the road or area is completely blocked, preventing access by an emergency responder, a contingency plan must be included. (Section 1.2 (A.2))
  - When leaving a work area and entering a roadway carrying public traffic, the Contractor's equipment, whether empty or loaded, shall in all cases yield to public traffic (Section 3.1 D)
  - Flaggers shall perform their duties and shall be provided with the necessary equipment in accordance with the current Caltrans "Flagging Instruction Handbook" (Section 3.3 (A.1)).
  - Where alternating one-way traffic has been authorized, the following shall be posted at each end of the one-way traffic section at least one week prior to start of work (Section 3.2 (A)):
    - The approximate beginning and ending dates that traffic delays will be encountered

- The maximum time that traffic will be delayed

- o Traffic signs, flashing lights, barricades and other traffic safety devices used to control traffic shall conform to the requirements of the most recently adopted edition of the MUTCD and the agency having jurisdiction (Section 2.1 (A)).
- o Designated Contractor must designate staging areas for storage of all equipment and materials, in such a manner to minimize obstruction to traffic (Section 1.2 (A.4)).

3.13.3 Impact Analysis

Methodology for Analysis

Transportation impacts are evaluated for the Existing plus Project condition during the short-term construction period and for long-term operations at the Walnut Creek and Lafayette WTPs. The Existing plus Project conditions represent the existing conditions "on the ground" at the commencement of environmental review with the added traffic generated during the Project construction period and operations.

Short-Term Construction Trip Generation

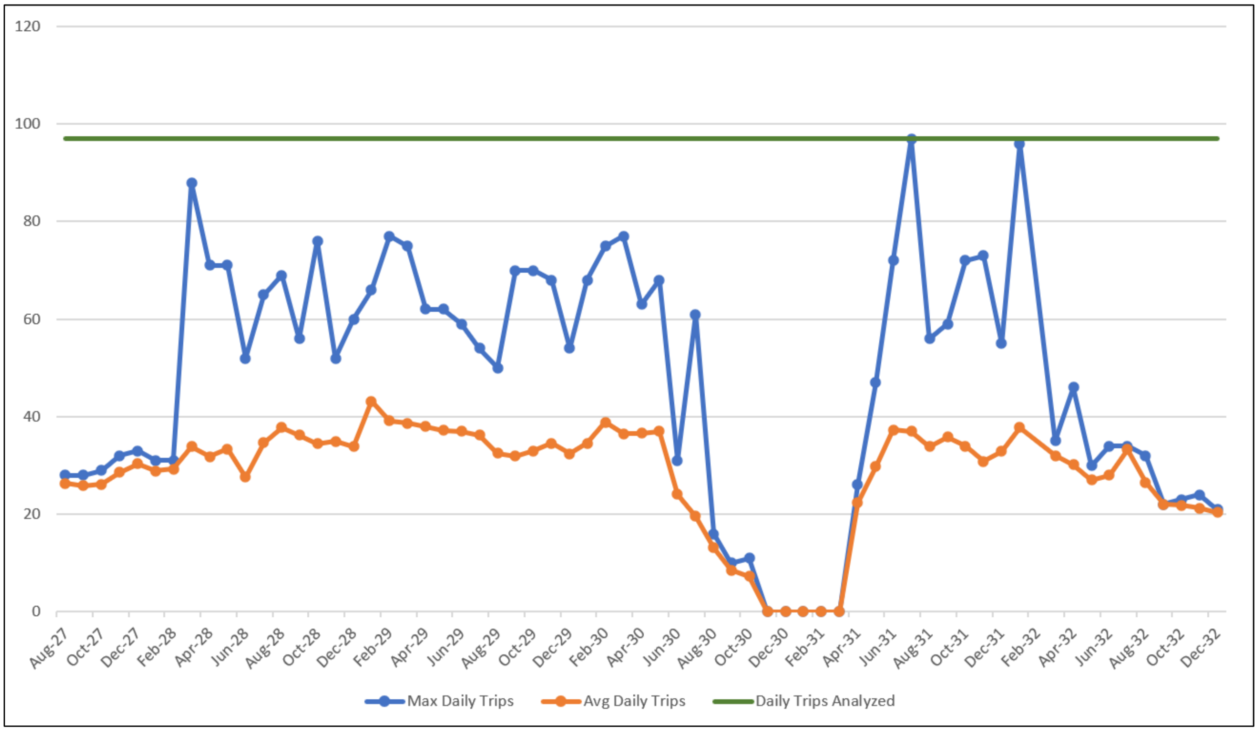
Walnut Creek WTP

Construction of Phase 1 is expected to take between about 3 ¼ to 5 years. Phase 2 is estimated to take approximately 2 years but may be longer. Given the potential range in construction duration, the shorter construction durations for Phase 1 and Phase 2 are used in the impact analysis to capture a worst-case scenario where construction activities are most intense. Average and maximum numbers of worker vehicles and truck trips were estimated for each day during Phase 1, which is scheduled to occur between August 2027 and October 2030 and Phase 2, which has not been scheduled yet, but is assumed to occur between April 2031 and November 2032 for the EIR analysis.

Construction typically would occur between 7:00 a.m. and 6:00 p.m., Monday through Friday. Construction personnel may arrive and depart 30 minutes before or after regular construction work times but would generally arrive on site during the morning commute peak period (7:00 a.m. to 9:00 a.m.) and leave the site at different times, with most workers leaving the site during the evening commute peak period (4:00 p.m. to 6:00 p.m.). Large haul trucks (soil and demolition off-haul and heavy equipment delivery truck trips) would occur during typical construction hours. Concrete delivery trucks would be allowed to access the Walnut Creek WTP site from 6:00 a.m. to 6:00 p.m. to accommodate extended concrete pours. There will be approximately 40 extended concrete pour days during Phase 1, and approximately 15 extended concrete pour days during Phase 2.

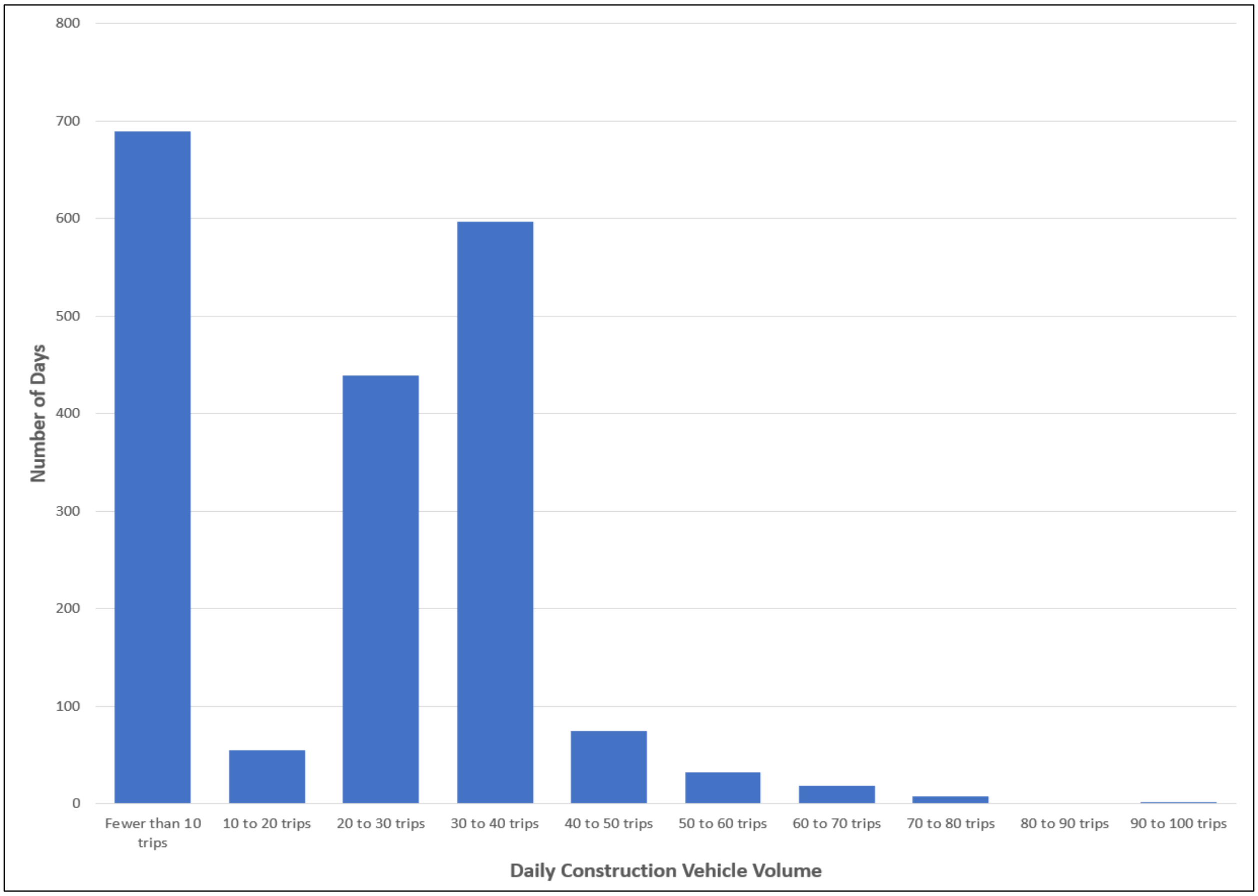
Figure 3.13-9 presents the fluctuation in estimated daily vehicle and truck trips during Phases 1 and 2, based on the average and the maximum daily vehicle and truck trip volumes. Approximately 40 or fewer worker vehicles and truck trips will occur on average each day. The highest estimated vehicle volume period would occur during Phase 2, when extended concrete pours are required for onsite construction, with total of approximately 97 daily worker vehicle and heavy truck trips on a single day. [4] **Figure 3.13-10** presents the frequency (number of days) by vehicle and truck trip volumes for Phases 1 and 2 combined.

Figure 3.13-9: Estimated Construction Trip Generation over Time for Phases 1 and 2 at Walnut Creek WTP



[4] Each trip represents 1 round trip, including 1 inbound trip and 1 outbound trip.

Figure 3.13-10: Frequency of Estimated Construction Vehicle and Truck Trip Volumes for Phases 1 and 2 Combined at Walnut Creek WTP



For the purpose of a conservative traffic analysis, the estimated traffic volume generated during the highest single day volume period was analyzed. During the highest estimated traffic volume period in Phase 2, the Project would generate approximately 97 daily vehicle trips to and from the Walnut Creek WTP, including 22 worker vehicle commute trips and 75 truck trips:

- Worker Trips – Approximately 22 workers would make daily vehicle trips to and from the Walnut Creek WTP on the highest traffic day in Phase 2. Workers would generally arrive during the morning commute peak period (7:00 a.m. to 9:00 a.m.) and leave the site at different times, with most workers leaving the site during the evening commute peak period (4:00 p.m. to 6:00 p.m.)
- Truck Trips – Approximately 75 truck trips (comprised of concrete, haul, and delivery trucks) would be required on the highest traffic day for a large concrete pour during Phase 2. During the days of large concrete pours, concrete trucks would arrive between 6:00 a.m. and 5:00 p.m. and are assumed to be evenly spread throughout the day with approximately 4 trucks per hour (4 inbound and 4 outbound). Delivery and haul trucks would start arriving after 7:00 a.m. and on the peak construction day total truck trips (concrete trucks plus haul and delivery trucks) would be about 8 trucks per hour (8 inbound and 8 outbound)

Table 3.13-2 presents the summary of estimated daily and peak hour vehicle and truck trips generated from and to the Walnut Creek WTP during the highest traffic volume period of construction. The estimated peak construction day would generate approximately 22 worker trips and 8 truck trips per hour during the AM and PM peak hours. During the midday period, the Project would generate approximately 8 truck trips per hour at the Walnut Creek WTP. Construction traffic volumes at Walnut Creek WTP would be substantially lower for most of the time, with fewer than 40 daily trips on average as presented in **Figure 3.13-9** and **Figure 3.13-10** above.

Table 3.13-2: Estimated Construction Peak Worker Vehicle and Truck Trip Generation at Walnut Creek WTP

	Daily		AM Peak Hour		Midday Peak Hour		PM Peak Hour	
	In	Out	In	Out	In	Out	In	Out
Worker Trip	22	22	22	-	-	-	-	22
Truck Trip	75	75	8	8	8	8	8	8
Total	97	97	30	8	8	8	8	30

Lafayette WTP

Construction activities at the Lafayette WTP would occur during Phase 1 construction from 2027 to 2030. Construction typically would occur between 7:00 a.m. and 6:00 p.m., Monday through Friday. Construction personnel may arrive and depart 30 minutes before or after regular construction work times but would generally arrive on site during the morning commute peak period (7:00 a.m. to 9:00 a.m.) and leave the site at different times, with most workers leaving the site during the evening commute peak period (4:00 p.m. to 6:00 p.m.). Large haul trucks (soil and demolition off-haul and heavy equipment delivery truck trips) would occur during typical construction hours.

For a conservative trip generation analysis, traffic from the estimated peak construction day at Lafayette WTP (which would be a single day when concrete would be poured for the new weir) was used. It is assumed that approximately 42 trucks and 5 workers would comprise the peak number of daily roundtrips to the Lafayette WTP during construction.

Table 3.13-3 presents the summary of estimated daily and peak hour vehicle and truck trips generated from and to the Lafayette WTP during the highest traffic volume period. The estimated peak construction day would generate approximately 5 worker trips and 4 truck trips per hour at the Lafayette WTP during the AM and PM peak hours. During the midday period of peak construction, the Project would generate approximately 4 truck trips per hour at the Lafayette WTP.

Table 3.13-3: Estimated Construction Peak Worker Vehicle and Truck Trip Generation at Lafayette WTP

	Daily		AM Peak Hour		Midday Peak Hour		PM Peak Hour	
	In	Out	In	Out	In	Out	In	Out
Worker Trip	5	5	5	-	-	-	-	5
Truck Trip	42	42	4	4	4	4	4	4
Total	47	47	9	4	4	4	4	9

Long-Term Operational Trip Generation

Walnut Creek WTP

Currently, there are typically a total of 36 daily workers at the Walnut Creek WTP, including 29 Facilities Maintenance and Construction (FMC) workers from 7:00 a.m. to 4:00 p.m., 3 operators from 8:00 a.m. to 4:00 p.m., 3 operators from 4:00 p.m. to midnight, and 1 operator from midnight to 8:00 a.m. After Project completion, there could be approximately 4 additional workers reporting, generally between 8:00 a.m. and 4:00 p.m. Therefore, the Project would generate approximately 4 additional worker vehicle trips during the AM and PM peak hours. Ongoing maintenance activities would continue to be conducted by staff already on site.

After Project completion, the Walnut Creek WTP would require new deliveries of various chemicals (alum, polymer, microsand, hydrogen peroxide, and liquid oxygen) to treat the range of water quality entering the Walnut Creek WTP. As a result, the chemical delivery truck trips would increase from approximately 2 weekly trips (existing) to approximately 4 weekly trips. In addition, during solids handling the number of hauling truck trips would also increase from approximately 2 daily trips to approximately 3 daily trips due to increased solids production after Project completion. Solids production and haul truck trips could substantially increase to approximately 21 daily truck trips during periods of lower water quality or high turbidity; however, this would be a rare occurrence.

Lafayette WTP

There would be no staffing changes or new chemical deliveries at the Lafayette WTP. Therefore, the Lafayette WTP would not generate any new trips after Project completion.

Significance Criteria

Consistent with Appendix G of the *CEQA Guidelines,* an impact on transportation/traffic would be considered significant if the Project would:

1. Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.
2. Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b).
3. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
4. Result in inadequate emergency access.

Impacts and Mitigation Measures

Impact TRA-1: Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. (Criterion 1)

The City of Walnut Creek General Plan establishes the intersection performance standards of LOS B for residential streets and LOS D for Arterial and Collector streets. The General Plan also set goals of providing a safe and attractive environment for bicycle travel (Goal 5) and protecting residential neighborhoods from nonresidential parking (Goal 4). Trucks weighing more than 3 tons are required to travel on designated truck routes only unless the trucks are used for utility or public works projects. The City of Walnut Creek also requires an Oversized Load Permit for vehicles that are wider than 8.5 feet, taller than 14 feet, longer than 65 feet, or a single vehicle 40 feet in length and heavier than 80,000 pounds, with truck travel typically permitted between 9:00 a.m. and 3:30 p.m. on weekdays (City of Walnut Creek, n.d.).

The City of Lafayette establishes LOS D as the minimum acceptable peak hour standards for intersections.

Walnut Creek WTP Phases 1 and 2 Construction and Lafayette WTP Construction

Background traffic volumes are generally higher during the AM and PM peak commute periods, and the Project would generate a higher volume of traffic during the commute periods. Therefore, traffic conditions with added Project-generated trips were evaluated for the AM and PM peak periods. Project-generated construction peak worker vehicle and truck trips for the Walnut Creek WTP were added to Walnut Creek WTP study intersections 1-9, and construction peak worker vehicle and truck trips for the Lafayette WTP were added to Lafayette WTP study intersections 10-11. **Table 3.13-4** presents the projected LOS and delay at the study intersections under the Existing plus Project condition. With the addition of Project-generated trips, all study intersections would continue to operate above both the City of Walnut Creek and the City of Lafayette's standards of LOS for study intersections during the AM and PM peak hours, except for the intersection of San Luis Road and the I-680 southbound on-ramp/off-ramp during the AM peak period.

Table 3.13-4: Intersection Level of Service under Existing Plus Peak Project Condition

Intersection	AM Peak Hour				PM Peak Hour			
	Existing		Existing plus Project		Existing		Existing plus Project	
	Delay 2	LOS2	Delay 2	LOS2	Delay 2	LOS2	Delay 2	LOS2
1. Larkey Lane / Alfred Avenue	9.2	A	9.5	A	9.2	A	9.5	A
2. San Luis Road / Larkey Lane	10.5	B	10.8	B	9.5	A	9.7	A
3. San Luis Road / Buena Vista Avenue	28.4	D	33.2	D	10.9	B	11.4	B
4. San Luis Road / I-680 Southbound On- and Off-Ramps	**>50**	**F**	**>50**	**F**	6.0	A	9.5	A
5. San Luis Road / North Main Street	30.3	C	30.6	C	42.4	D	42.1	D
6. North Main Street / Penniman Way	13.1	B	13.3	B	18.0	B	18.0	B
7. North Main Street / Parkside Drive	34.4	C	34.5	C	37.8	D	37.7	D
8. Parkside Drive / Lawrence Way	9.4	A	9.4	A	19.7	B	10.1	B
9. Penniman Way / I-680 Northbound On-Ramp	9.9	A	10.0	A	18.4	B	20.3	C
10. Acalanes Road / Mt. Diablo Boulevard	16.1	B	16.1	B	18.4	B	18.4	B
11. Mt. Diablo Boulevard / Lafayette WTP Driveway	0.0	A	0.0	A	10.8	B	10.9	B

Source: CHS Consulting Group, 2022

[1] Intersections #1, #2, and #4 are two-way stop-controlled; Intersections #3 is all-way stop-controlled; Intersection #5 through #10 are signalized; and Intersection #11 is uncontrolled.

[2] The LOS and delay (in seconds per vehicle) for two-way stop-controlled intersections represent conditions for the critical approach, and the LOS and delay for all-way stop-controlled or signalized intersections represent conditions for the overall intersection. Note that intersection delays are calculated as “seconds of delay per vehicle.” Thus, adding a very small number of trips to an approach can reduce delays “per vehicle” or not cause any change in delays at all.

The San Luis Road and I-680 southbound on-ramp/off-ramp intersection would continue to operate at LOS F during the AM peak period due to the high volume of background traffic entering the I-680 on-ramp from the eastbound right-turn and westbound left-turn movements on San Luis Road. The Project would add approximately 4 trips (approximately one percent) to the eastbound right-turn movement during the AM peak hour when large concrete pours with extended workdays are required at the Walnut Creek WTP. These extended workdays are expected to occur for approximately 40 workdays at Walnut Creek WTP during Phase 1 and 15 workdays at Walnut Creek WTP during Phase 2. For the remainder of construction days, construction traffic volumes would be substantially lower and most trucks would arrive and leave outside of the AM and PM commute periods. The San Luis Road and I-680 southbound on-ramp/off-ramp intersection would operate at LOS F with or without the additional Project trips, and the Project would not contribute considerably to the already congested operating condition at the intersection.

While the Project-generated traffic volumes are minimal, traffic could be noticeable to local residents and pedestrians and bicyclists along the local roads due to the low existing traffic volumes along these roadways. As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including EBMUD Standard Construction Specification 01 55 26, Traffic Regulation, which would require the contractor to prepare a Traffic Control Plan to minimize impacts on bicycle and pedestrian circulation on local streets (see *Section 3.13.2*), and EBMUD

Standard Construction Specification 01 32 36, Video Monitoring and Documentation, which would require documentation of both pre- and post-construction pavement conditions in the project vicinity. The Traffic Control Plan would identify specific measures to be implemented during construction activities, which may include installing signs, flashing lights, barricades, and other traffic safety and slowing devices to maintain bicycle and pedestrian safety on roadways near both the Walnut Creek and Lafayette WTPs. The Traffic Control Plan may also require truck drivers to yield to traffic, bicyclists, and pedestrians when traveling to and from the Project sites. Standard Construction Specification 01 32 36, Video Monitoring and Documentation, requires pre- and post-construction surveys and requires the contractor to repair any damage or defect not documented as existing prior to construction.

The Project-generated vehicle trips would not be subject to the City of Walnut Creek's 3-ton truck limit along San Luis Road because the Project involves the construction and maintenance of a utility project. However, if Project construction requires the use of oversized vehicles outside the truck travel hours specified by the City of Walnut Creek, this could create a conflict with City of Walnut Creek policies for oversized vehicles. Therefore, **Mitigation Measure TRA-1** would be implemented, which requires the contractor to limit soil and demolition off-haul and large equipment delivery trucks to between 9:00 a.m. to 3:30 p.m. at the Walnut Creek WTP. **MM TRA-1** also restricts soil and demolition off-haul and large equipment delivery trucks to outside the AM and PM peak traffic periods.

It is assumed that freeways and major arterials were designed and constructed to handle a mix of vehicle types, including heavy trucks, but that pavement conditions on smaller collector and residential streets may be potentially impacted by increased construction traffic. Heavy truck traffic on the access route to the Walnut Creek WTP via San Luis Road (a collector street) and Larkey Lane (a residential street) could result in degradation of local roads. Therefore, a second part of **Mitigation Measure TRA-1** is proposed to mitigate potential impacts on pavement conditions on roadways and would require video documentation of pre- and post-Project pavement conditions on San Luis Road and Larkey Lane, roadways to be used to transport construction-related equipment and materials to the Walnut Creek WTP. **Mitigation Measure TRA-1** would require that pavement damaged by Project construction traffic be structurally repaired to pre-Project conditions. By limiting soil and demolition off-haul and large equipment delivery trucks to between 9:00 a.m. to 3:30 p.m., and assessing pavement conditions before and after construction on San Luis Road and Larkey Lane, the potential for conflict with applicable plans and policies would be less than significant at the Walnut Creek WTP.

At the Walnut Creek WTP, the Project would develop three new staging areas and use an existing parking area for temporary storage of construction equipment and worker parking. All construction staging and parking demand would be contained within the Walnut Creek WTP and would not occur along the adjacent streets such as Larkey Lane.

At the Lafayette WTP, no new staging areas are required, and all construction staging and parking demand would be contained within the Lafayette WTP. It is assumed that Mt. Diablo Boulevard, a major arterial, was designed and constructed to handle a mix of vehicle types, including heavy trucks, so **Mitigation Measure TRA-1** is not needed and would not apply at the access roads to and from the Lafayette WTP.

The Project would not worsen LOS at key intersections for both WTPs and on-site staging areas would accommodate the staging and parking needs during Project construction, and implementation of EBMUD Standard Construction Specification 01 55 26, Traffic Regulation, would require adherence to the Traffic Control Plan (TCP) and existing traffic rules to minimize the potential for conflicts with bicycle and pedestrian circulation. The Traffic Control Plan would include measures such as signs (e.g., “Road Work Ahead” warning signs, speed control signs, and signage to direct vehicles around the construction work zones), flashing lights, barricades, flaggers, and other traffic safety devices to minimize impacts on circulation on the streets surrounding the Walnut Creek WTP site. **Mitigation Measure TRA-1** implements additional TCP measures for heavy construction vehicle traffic safety monitoring, including requiring the contractor to: distribute written traffic safety requirements to all heavy construction vehicle drivers, obtain drivers’ written acknowledgement of the traffic safety requirements, and provide radar speed feedback signs on Larkey Lane to reduce vehicle speeds. Implementation of EBMUD Standard Construction Specification 00 01 32 36, Video Monitoring and Documentation, and **Mitigation Measure TRA-1** would ensure that San Luis Road and Larkey Lane are restored to pre-construction condition if damaged. Additionally, **Mitigation Measure TRA-1** would ensure that soil and demolition off-haul and large equipment delivery trucks to and from the Walnut Creek WTP will be restricted to between the hours of 9:00 a.m. to 3:30 p.m., and would not conflict with applicable plans or policies. Therefore, Project construction would not conflict with an applicable plan or policy related to transit, bicycle, or pedestrian circulation, or parking impacts, and impacts would be less than significant. The EBMUD Practices and Procedures Monitoring Plan (**Appendix E**) lists the applicable standard specifications language.

Operation and Maintenance

After construction is completed, the Walnut Creek WTP would generate approximately 4 new daily vehicle trips for workers. Weekly truck trips could increase from approximately 2 per week to approximately 4 per week for chemical deliveries. Solids handling truck trips could increase from approximately 2 per day to approximately 3 per day during typical periods of solids handling. There would be no staffing changes or truck delivery trips at the Lafayette WTP. Because the Project would generate very few additional operation and maintenance vehicle trips (far fewer than during construction period), the ongoing Project-generated trips are not likely to worsen the intersection operating conditions along local roads or adversely affect pedestrian and bicycle circulation. The minimal increased operation and maintenance traffic would not be expected to adversely affect pavement conditions on local roads. Therefore, Project operation and maintenance would not conflict with a program, plan, ordinance, or policy addressing the circulation system, and the impact would be less than significant.

Significance Determination Before Mitigation

Potentially significant.

Mitigation Measures

Mitigation Measure TRA-1: Minimize Impacts of Heavy Truck Traffic at the Walnut Creek WTP

- Use of soil and demolition off-haul and large equipment delivery trucks to and from the Walnut Creek WTP will be restricted to between the hours of 9:00 a.m. to 3:30 p.m.
- The required Traffic Control Plan shall include the following measures:

  - EBMUD's Contractor shall distribute written traffic safety requirements to all Contractor heavy construction vehicle drivers. All drivers shall provide signed acknowledgement of having read and understood all traffic safety requirements and consequences of non-compliance.
  - Written traffic safety requirements shall include:
    - Construction work hours specifying when construction traffic would be allowed to access the Walnut Creek WTP and staging areas.
    - Construction haul routes and associated speed limits.
    - Designated parking and queuing locations.
  - Contractor shall provide Project sticker or equivalent to drivers who have provided written acknowledgement of traffic safety requirements.
    - Project sticker shall be made available upon request by EBMUD during the construction contract period.
  - Contractor heavy construction vehicle drivers shall conform to designated construction hours, including no driving, queuing, idling or parking on local roadways outside of designated construction hours as outlined in written traffic safety requirements.
  - Contractor heavy construction vehicle drivers shall use only designated construction traffic haul routes.
  - Contractor shall provide Radar Speed Feedback Signs along Larkey Lane for the entire Project duration (two, one in each direction of traffic on Larkey Lane) to deter speeding by heavy construction vehicles on construction traffic routes.
  - Contractor heavy construction vehicle drivers shall comply with roadway traffic safety rules as outlined in written traffic safety requirements, including, but not limited to:
    - Stoplight signals and stop signs.
    - Roadway speed limits (reduced speeds in construction zones and near schools).

- Prior to Project construction, EBMUD shall require the contractor(s) to video document pavement conditions on San Luis Road between Casa Way and Larkey Lane and on Larkey Lane between San Luis Road and Alfred Avenue that will be used by Project-related vehicles. Pavement conditions shall also be documented after Project construction is complete. If there is visible deterioration in the pavement condition, any pavement damaged by Project construction-related traffic shall be repaired to a structural condition equal to that which existed prior to Project construction activity.

Significance Determination After Mitigation

Less than significant.

Impact TRA-2: Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b). (Criterion 2)

Per CEQA Guidelines section 15064.3 subdivision (b) Criterion 1 (Land Use Projects), projects that involve VMT exceeding an applicable threshold of significance may indicate a significant impact. The Technical Advisory on Evaluating Transportation Impacts in CEQA (Governor's Office of Planning and Research 2018) provides the following guidance for evaluating projects that include heavy truck traffic: ***Vehicle Types****. Proposed Section 15064.3, subdivision (a), states, "For the purposes of this section, 'vehicle miles traveled' refers to the amount and distance of automobile travel attributable to a project." Here, the term "automobile" refers to on-road passenger vehicles, specifically cars and light trucks.*

The technical advisory also provides a screening threshold for small projects, stating that: "… projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less-than-significant transportation impact."

The advisory thus indicates that heavy truck trips, such as haul truck trips generated by the Project, are not subject to VMT analysis, thresholds, or reduction requirements as part of the CEQA review process. Rather, VMT analysis for the purposes of identifying potentially significant impacts under CEQA are for use in evaluating office, residential, and retail projects. Therefore, Project truck trips, by definition, do not create an inconsistency with CEQA Guidelines section 15064.3(b) and do not create a significant impact with regards to VMT.

Walnut Creek WTP Phases 1 and 2 Construction and Lafayette WTP Construction

During the highest volume period at each site, the Project would generate approximately 97 daily vehicle trips to and from the Walnut Creek WTP and approximately 47 daily vehicle trips to and from the Lafayette WTP, temporarily increasing the VMT during construction. However, construction vehicle trips would only occur for limited durations during both Phases at the Walnut Creek WTP, and during Phase 1 at the Lafayette WTP and would result in minimal increases in VMT. The Project is a temporary construction project with minimal increases in permanent VMT following construction, rather than a long-term land use project. Therefore, the Project would not conflict with or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b) and impacts would be less than significant during Project construction.

Operation and Maintenance

The Project would generate very few additional vehicle trips (approximately 4 daily trips at Walnut Creek WTP and no additional trips at Lafayette WTP) for operation and maintenance, which would not result in a significant increase in VMT. Therefore, Project operation and maintenance would have less than significant impacts related to VMT.

Significance Determination Before Mitigation

Less than significant.

Mitigation Measures

None required.

Impact TRA-3: Substantially increase hazards due to a design feature or incompatible uses. (Criterion 3)

Walnut Creek WTP Phases 1 and 2 Construction and Lafayette WTP Construction

The existing driveways and site access roads at the Walnut Creek and Lafayette WTPs currently accommodate the movements of large trucks, including the maintenance and delivery trucks for both WTP sites. Because the existing driveways leading to the entrances of the Walnut Creek and Lafayette WTPs extend beyond Larkey Lane and Mt. Diablo Boulevard, respectively, vehicles entering the sites would not block the approaching traffic on the adjacent roadways or cause a hazardous condition.

As noted previously, pedestrian facilities are limited near the Walnut Creek WTP with unmarked crosswalks and non-continuous sidewalks on Larkey Lane. Students or local residences walking in the neighborhood jaywalk across Larkey Lane where convenient to cross. The stretch of Larkey Lane from Rachele Road to Alvarado Avenue has a long, sweeping curve that can obscure the sightlines of vehicles traveling along Larkey Lane. The northbound lane faces downhill which influences the speed of vehicles. This is the area where an east-west pedestrian path starts on Alvarado Avenue that is used by local residents and students walking east to Buena Vista Elementary School, transit facilities, or to downtown Walnut Creek. Road, sidewalk, crosswalk, and traffic slowing design decisions on Larkey Lane, along with traffic safety, are the responsibility of the City of Walnut Creek. While EBMUD vehicles and delivery trucks add to the local traffic, local residents, garbage pickup, and package/mail delivery vehicles also use these roads on a daily basis.

As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including Standard Construction Specification 01 55 26, Traffic Regulation, which would require the contractor to prepare a Traffic Control Plan to minimize impacts on bicycle and pedestrian circulation on local streets (see *Section 3.13.2*). EBMUD Standard Construction Specification 01 55 26 would require contractor vehicles to yield to public traffic, would require the contractor to use traffic safety and slowing devices such as signs, barricades, and other traffic safety devices, and would require the contractor to maintain safe access around the project limit at all times.

Even with the incorporation of EBMUD's standard practices and procedures for traffic control measures, the Project's construction traffic along Larkey Lane may impact vehicle, bicyclist, and pedestrian safety as described above, due to the temporary increase in the number of vehicles which would constitute a potentially significant impact. However, **Mitigation Measure TRA-1** implements additional TCP measures for heavy construction vehicle traffic safety monitoring, including requiring the contractor to: distribute written traffic safety requirements to all heavy construction vehicle drivers, obtain drivers' written acknowledgement of the traffic safety requirements, and provide radar speed feedback signs on Larkey Lane to reduce vehicle speeds. Additionally, implementation of **Mitigation Measure TRA-2** would reduce the Project's impacts related to traffic hazards along Larkey Lane to a level of less than significant through providing traffic control flaggers in coordination with local school schedules during extended workdays with large concrete pours at the Walnut Creek WTP.

Project construction traffic would create potential safety hazards on Larkey Lane. However, because the Project would accommodate safe movements of trucks entering and exiting the sites without blocking the approaching traffic on Larkey Lane or Mt. Diablo Boulevard, and because EBMUD Standard Construction Specification 01 55 26, Traffic Regulation, and Mitigation Measures TRA-1 and TRA-2 would be implemented, requiring adherence to the Traffic Control Plan with additional safety measures to minimize potential conflicts between Project trips and the traveling public along local roads, the Project's impacts would be reduced to less than significant impacts related to hazardous condition. The EBMUD Practices and Procedures Monitoring Plan (**Appendix E**) lists the applicable standard specifications language.

Operation and Maintenance

The Project's long-term operation and maintenance activities would be contained within the Walnut Creek and Lafayette WTP sites and there would be no changes to public roadways. The Project would not include any design features that present hazards at the Walnut Creek WTP entrance/exit at Larkey Lane or the Lafayette WTP driveway at Mt. Diablo Boulevard. Therefore, the Project operation and maintenance would have less than significant impacts related to hazardous conditions.

Significance Determination Before Mitigation

Potentially significant.

Mitigation Measures

Mitigation Measure TRA-1: Minimize Impacts of Heavy Truck Traffic at the Walnut Creek WTP

(Refer to Impact TRA-1 above for the full text of Mitigation Measure TRA-1)

Mitigation Measure TRA-2: Additional Flagger Requirements at Larkey Lane for Walnut Creek WTP

Contractors shall implement the following measures as part of the Traffic Control Plan in Walnut Creek:

- On extended workdays with large concrete pours and days with soil off-hauling at the Walnut Creek WTP, provide a traffic control flagger at the intersection of Larkey Lane and Alvarado Avenue during school start and dismissal times with a buffer before school starts and after school ends.
- The construction contractor shall confirm with the Contra Costa Christian Schools (2721 Larkey Lane, Walnut Creek) and Buena Vista Elementary School (2355 San Juan Avenue, Walnut Creek) the typical start and dismissal times, school events, and irregular start and dismissal times prior to the beginning of each school year.

Significance Determination After Mitigation

Less than significant.

Impact TRA-4: Result in inadequate emergency access. (Criterion 4)

Walnut Creek WTP Phases 1 and 2 Construction and Lafayette WTP Construction

Construction activities for the Project would primarily be confined to the Walnut Creek and Lafayette WTPs and would not cause any lane or roadway closures. Construction and staging and parking spaces would be contained within the three new designated staging areas as well as an existing parking area. Therefore, construction activities and staging would not block the site entrance/exit and would be planned to maintain adequate emergency access to and from the sites at all times. In the event of emergencies, vehicles would continue to use the main entrance/exit off Larkey Lane at the Walnut Creek WTP and off Mt. Diablo Boulevard at the Lafayette WTP. As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including Standard Construction Specification 01 55 26, Traffic Regulation, which requires a Traffic Control Plan, including a description of emergency response vehicle access. The Traffic Control Plan would include specific measures to control traffic where alternating one-way traffic is necessary and provide guidance to motorists as to when and how to safely move around the Project site during construction. Open trenches would be covered (plated) at the end of each day to provide access. Impacts on emergency access would be less than significant because the Traffic Control Plan would include a description of emergency response vehicle access to ensure that emergency responders have access during the construction period. Therefore, the Project construction would have less than significant impacts related to emergency access. The EBMUD Practices and Procedures Monitoring Plan (**Appendix E**) lists the applicable standard specifications language.

Operation and Maintenance

The Project would continue to use the existing Walnut Creek WTP access point on Larkey Lane, as well as the existing Lafayette WTP driveway at Mt. Diablo Boulevard. Therefore, Project operation and maintenance would have less than significant impacts related to emergency access.

Significance Determination Before Mitigation

Less than significant.

Mitigation Measures

None required.

Cumulative Impact Analysis

One EBMUD project (i.e., Larkey Pumping Plant Rehabilitation Project) would overlap with the Project construction at the Walnut Creek WTP, and two EBMUD projects (i.e., Lafayette No. 1 Aqueduct Relining Project and Lafayette WTP Interim Disinfection and Residuals Improvements Project) would overlap with the Project construction at the Lafayette WTP. These cumulative projects would potentially increase travel demand to and from the respective WTPs. However, because the EBMUD standard practices and procedures, applicable to all EBMUD projects, would have been incorporated into cumulative projects, and because the Project would generate minimal vehicle trips with the long-term use of the sites in the future, the impacts of the Project in combination with other projects would not be cumulatively considerable and would result in less than-significant cumulative impacts.

3.13.4 References

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3.14 Tribal Cultural Resources

This section describes the physical, environmental, and regulatory setting for tribal cultural resources relevant to the Project, identifies the significance criteria for determining environmental impacts, and evaluates the potential impacts on tribal cultural resources that could result from implementation of the Project.

3.14.1 Environmental Setting

Tribal cultural resources are defined as site features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either on or eligible for the California Register of Historical Resources (California Register) or that a local historic register, or the lead agency, at its discretion, chooses to treat as tribal cultural resources. *Section 3.4, Cultural Resources,* describes the natural and cultural background for cultural resources and tribal cultural resources as well as a summary of the background research, survey effort, and an evaluation of potential tribal cultural resources (refer to *Section 3.4.1, Environmental Setting*).

3.14.2 Regulatory Framework

This section describes federal, state, and local policies and regulations related to tribal cultural resources that may apply to the Project.

Federal Policies and Regulations

No applicable federal regulations specifically address tribal cultural resources.

State Policies and Regulations

Assembly Bill 52

Assembly Bill (AB) 52 took effect July 1, 2015 and established a formal consultation process for California Native American Tribes. The AB 52 amendments to CEQA specify that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource, as defined in Public Resources Code (PRC) Section 21074, is one that may have a significant effect on the environment. In particular, AB 52 now requires lead agencies to analyze project impacts on "tribal cultural resources" separately from archaeological resources (PRC Section 21074, 21083.09). The bill defines "tribal cultural resources" in a new section of the PRC Section 21074. AB 52 requires a lead agency to begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of a proposed project, if the tribe requested to the lead agency, in writing, to be informed by the lead agency of proposed projects in that geographic area and the tribe requests consultation, prior to determining which form of CEQA documentation is required for a project (PRC Sections 21080.3.1, 20180.3.2, 21082.3). Consultation may include discussion of issues such as the appropriate level of environmental review for a proposed project, the significance of a proposed project's potential impacts to tribal cultural resources, and the availability of mitigation measures of project alternatives that could lessen effects of a project, if any, on tribal cultural resources. EBMUD has received no requests from Native American tribes for consultation under AB 52 for this Project.

Local Policies and Regulations

No applicable local regulations specifically address tribal cultural resources.

EBMUD Standard Construction Specifications

EBMUD's Standard Construction Specifications and Procedures apply to all contractors completing work for EBMUD, and to work completed by EBMUD staff. The following EBMUD practices and procedures are applicable to tribal cultural resources:

- **EBMUD Standard Construction Specification 01 35 45, Biological, Cultural, and Paleontological Resource Requirements, Section 3.3**

  EBMUD Standard Construction Specification 01 35 45 (Biological, Cultural, and Paleontological Resource Requirements), sets forth the contract requirements for environmental compliance to which construction crews must adhere. Section 3.3, Protection of Cultural and Paleontological Resources, defines provisions for protection of cultural resources during construction. The contractor would be required to comply with the following (EBMUD, 2023):

  - Conform to the requirements of statutes as they relate to the protection and preservation of cultural resources. Unauthorized collection of prehistoric or historic artifacts or fossils along the Work Area, or at Work facilities, is strictly prohibited.
  - Before beginning construction, all Contractor construction personnel involved in ground disturbing activities shall attend a cultural resources training course provided by the EBMUD of up to two-hours for site supervisors, foreman, project managers, and non-supervisory contractor personnel. The training program will be completed in person or by watching a video, at an EBMUD designated location, conducted by a qualified archaeologist provided by EBMUD or EBMUD staff. The program will discuss cultural resources awareness within the project work limits, including the responsibilities of Contractor's construction personnel, applicable mitigation measures, confidentiality, and notification requirements. The Contractor is responsible for ensuring that all workers requiring training are identified to EBMUD. Prior to accessing or performing construction work, all Contractor personnel involved in ground disturbing activities shall sign an attendance sheet by the Engineer verifying that they have attended the appropriate level of training; have read and understood the contents of the training. The program will discuss cultural and paleontological resources awareness within the project work limits, including the responsibilities of Contractor's construction personnel, applicable mitigation measures, confidentiality, and notification requirements.
  - In the event that potential cultural resources are discovered at the site of construction, the following procedures shall be instituted:
    - Discovery of prehistoric or historic-era archaeological resources requires that all construction activities shall immediately cease at the location of discovery and within 100 feet of the discovery.
      - The Contractor shall immediately allow EBMUD to evaluate the find. The Contractor is responsible for stopping work and notifying the

Engineer and shall not recommence work until authorized to do so by the Engineer.

- EBMUD will retain a qualified archaeologist to inspect the findings within 24 hours of discovery. If it is determined that the Project could damage a historical resource as defined by CEQA (or a historic property as defined by the National Historic Preservation Act of 1966, as amended), construction shall cease in an area determined by the archaeologist until a mitigation plan has been prepared, approved by EBMUD, and implemented to the satisfaction of the archaeologist (and Native American representative if the resource is prehistoric, who shall be identified by the Native American Heritage Commission [NAHC]). In consultation with EBMUD, the archaeologist (and Native American representative) will determine when construction can resume.

▪ Discovery of human remains requires that all construction activities immediately cease at the location of discovery, and within 100 feet of the discovery.

- The Contractor shall immediately notify the Engineer who will engage qualified archaeologist provided by EBMUD to evaluate the find. The Contractor is responsible for stopping work and notifying the proper personnel and shall not recommence work until authorized to do so by the Engineer.
- EBMUD will contact the County Coroner to determine whether or not the remains are Native American. If the remains are determined to be Native American, the Coroner will contact the NAHC. The NAHC will then identify the person or persons it believes to be the most likely descendant from the deceased Native American, who in turn would make recommendations to EBMUD for the appropriate means of treating the human remains and any associated funerary objects.

o If EBMUD determines that the find requires further evaluation, at the direction of Engineer, Contractor shall suspend all construction activities at the location of the find and within a larger radius, as required.

3.14.3 Impact Analysis

Methodology for Analysis

Tribal Cultural Resources

Impacts on tribal cultural resources are assessed in consultation with affiliated Native American tribes that have requested consultation in accordance with PRC Section 21080.3. This CEQA analysis considers whether the Project would cause damaging effects to any tribal cultural resource, including archaeological resources and human remains.

Significance Criteria

Consistent with Appendix G of the *CEQA Guidelines* an impact on tribal cultural resources would be considered significant if the Project would:

1. 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:
   a. 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
   b. 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.

Impacts and Mitigation Measures

Impact TC-1: Cause a substantial adverse change in the significance of a tribal cultural resource as defined in PRC 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. (Criterion 1)

Walnut Creek WTP Construction Phase 1 and Phase 2, Lafayette WTP Construction

As summarized in *Section 3.4, Cultural Resources,* archival and field reviews were conducted in 2022 to assess the potential for cultural and tribal cultural resources to occur in work areas within the Walnut Creek WTP and Lafayette WTP Project sites. The reviews consisted of a Northwest Information Center Database Search and pedestrian field surveys of the sites. Archival and field reviews indicate that there are no known archaeological tribal cultural resources within the Walnut Creek WTP or Lafayette WTP Project sites and that there is a low potential to uncover resources during Project implementation. EBMUD has not received any requests for AB 52 consultation related to the Project. On January 3, 2022, EBMUD contacted the NAHC for a review of the Sacred Land Files and to generate a list of tribal contacts for additional outreach. A response was received from the NAHC on January 21, 2022, that provided a list of sixteen Contra Costa County Native American representatives. EBMUD contacted the sixteen Native American representatives by letter on February 28, 2022, informing them of the Project. Follow-up letters to the Native American representatives were made on July 19, 2022, to clarify that the Sacred Lands File check was positive for the Project. Despite the low archaeological sensitivity, the possibility of inadvertent discovery during minor excavation activities cannot be entirely discounted and could result in a potentially significant impact.

As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including EBMUD's Standard Construction Specification 01 35 45, Biological, Cultural, and Paleontological Resource Requirements. Section 3.3, Protection of Cultural and Paleontological Resources, which includes appropriate cultural resources management practices and complies with statutory requirements, outlines the following procedures:

- Preconstruction cultural resources training is required for all construction personnel.
- In the event that a cultural resource is identified during preconstruction activities or during excavation for construction activities, all work within 100 feet of the resource shall be halted until a qualified archaeologist can review, identify, and evaluate the resource for its significance. Should the archaeologist determine that an archaeological resource has the potential to be a tribal cultural resource, a Native American monitor shall be retained by EBMUD to monitor work in the area where the tribal cultural resource was discovered.

Because EBMUD's Standard Construction Specification 01 35 45, Section 3.3, Protection of Cultural and Paleontological Resources, requires implementation of cultural resources procedures that address the inadvertent discovery of tribal cultural resources and ensures compliance with legal requirements regarding the protection of such resources, the Project's impacts on tribal cultural resources would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (**Appendix E**) lists the applicable standard specifications language.

Operation and Maintenance

Ongoing activities associated with Project operation and maintenance at the Walnut Creek WTP and Lafayette WTP would not involve excavation or other ground disturbing activities. Because operation and maintenance activities would not involve ground disturbing activities, no operational impacts related to tribal cultural resources are anticipated.

Significance Determination Before Mitigation

Less than significant.

Mitigation Measures

None required.

Cumulative Impact Analysis

The Project would not contribute to significant tribal cultural impacts. The geographic scope of analysis for cumulative impacts on tribal cultural resources encompasses planned future projects at the Walnut Creek WTP and Lafayette WTP. A cumulatively significant impact could result if incremental effects of the Project, after implementation of EBMUD's Standard Construction Specifications, combined with the impacts of planned projects, after implementation of their mitigation as applicable, cause a substantial adverse effect on the same cultural resource. There are no known tribal cultural resources within the Project sites; therefore, the Project would not contribute to a significant cumulative effect on cultural resources.

Federal, state, and local laws can generally protect cultural resources, including tribal cultural resources, in most instances. Future development at the Walnut Creek WTP and Lafayette WTP sites would be required to comply with the same provisions of CEQA and implement measures similar to those identified above (EBMUD's Standard Construction Specification 01 35 45, Biological, Cultural, and Paleontological Resource Requirements, Section 3.3, Protections of Cultural and Paleontological Resources). These measures would require protocols for responding in the event of inadvertent discovery of tribal cultural resources.

Through compliance with applicable regulations and implementation of standard construction specifications and mitigation measures, the Project would not have a cumulatively considerable contribution to adverse effects on tribal cultural resources. This cumulative impact would be less than significant.

3.14.4 References

EBMUD. 2023. Standard Construction Specification 01 35 45, Biological, Cultural, and Paleontological Resource Requirements. February 2023.

Kleinfelder, Inc. 2022. Confidential Cultural Resources Assessment Report. Walnut Creek Water Treatment Plant Pretreatment Project.

U.S. Department of the Interior. 1995. How to Apply the National Register Criteria for Evaluation. Available online at: https://www.nps.gov/subjects/nationalregister/upload/NRB-15_web508.pdf. Accessed on August 15, 2022.

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3.15 Wildfire

This section describes the physical, environmental, and regulatory setting for wildfire conditions of the Project sites and vicinities, identifies the significance criteria for determining environmental impacts and evaluates the potential impacts related to wildfire that could result from implementation of the Project. Also provided in this section is a map of lands classified as High Fire Hazard Severity Zones in the Project area.

3.15.1 Environmental Setting

Wildfire Background

A wildfire is any uncontrolled fire occurring on undeveloped land that requires fire suppression. Wildfires can be ignited by lightning or by human activity such as smoking, campfires, equipment use, and arson (Contra Costa County, 2018).

Fire hazards present a considerable risk to human life, vegetation, and wildlife habitats. Short-term loss caused by a wildfire can include the destruction of timber, wildlife habitat, scenic vistas, and watersheds. Long-term effects include smaller timber harvests, reduced access to affected recreational areas, and destruction of cultural and economic resources and community infrastructure. In addition, vulnerability to flooding and high-turbidity runoff can increase due to the destruction of watersheds. The potential for significant damage to life and residential property exists in areas designated as “wildland urban interface areas,” where development is adjacent to densely vegetated areas (Contra Costa County, 2018).

Topography, type and condition of fuel, and weather patterns can all play a role in fire behavior. Topography includes slope and elevation of landforms and can influence the speed at which a fire spreads (fire spreads more easily uphill than downhill) (Contra Costa County, 2018).

Fuel may include wooden structures, living and dead vegetation on the ground, along the surface as brush and small trees, and above the ground in tree canopies. Lighter fuels such as grasses, leaves, and needles burn rapidly, while heavier fuels such as tree branches, logs, and tree trunks take longer to ignite (Contra Costa County, 2018).

Weather conditions affecting the potential for fire include temperature, relative humidity, wind speed and direction, cloud cover, precipitation amount and duration, and the stability of the atmosphere. Of particular importance for wildfire activity are wind and thunderstorms. Strong, dry winds produce extreme fire conditions. Lighting events can ignite fires, and high winds can cause fires to spread swiftly (Contra Costa County, 2018).

Site Conditions

The topography, weather patterns, and vegetation in the East Bay area provide ideal conditions for recurring wildfires.

Topography

Rugged topography can contribute to wildfire spread and intensify fire effects. The landscape can also make access difficult during fire responses. The Walnut Creek Water Treatment Plant (WTP) is situated on the northeastern flank of a northwest trending ridge atop a smaller, northerly trending spur. There are slopes along the eastern, western, and northern portions of the

Walnut Creek WTP (Ninyo & Moore, 2022). The Lafayette WTP site is relatively flat, largely due to grading completed with prior development. However, the Lafayette WTP site is on a larger, south facing slope grading down towards Mt. Diablo Boulevard.

Fuels

Vegetation at the Walnut Creek and Lafayette WTPs sites and surrounding areas consist of a variety of vegetation communities, including primarily non-native grassland, non-native grassland/ruderal, mixed oak/Aleppo pine (*Pinus halepensis*), mixed oak woodland, riparian woodland, and developed areas with ornamental landscaping. See *Section 3.3, Biological Resources* for more information. EBMUD deploy goats for weed control and fire safety, as well as arborists for the removal of trees, as needed. The majority of low-lying vegetation (annual non-native grassland) is mowed or maintained by use of goats through the summer season.

The Walnut Creek WTP is bounded to the east by single-family residential properties, and to the north, south, and west by undeveloped open space featuring several public trail areas. The Acalanes Ridge Open Space, a 171-acre preserve, is positioned to the south and west of the Walnut Creek WTP. The Briones to Mt Diablo Regional Trail, managed by the East Bay Regional Park District (Park District), extends along the northern border of the site. Additional residential properties are present to the north, south, and west beyond the trails and open space areas directly adjacent to the Walnut Creek WTP property.

Vegetation communities at the Lafayette WTP include non-native grasslands, oak trees, and developed areas with ornamental landscaping. EBMUD deploy goats for weed control and fire safety. The Lafayette WTP is bounded by Mt. Diablo Boulevard to the south and west, Temple Isaiah to the east, and State Route 24 (SR-24) to the north. There are no residences adjacent to the site. The surrounding area to the northwest is characterized by hills and canyons, which could pose a potential fire hazard to the area.

Weather

Dry summers, low precipitation, and seasonal gusty winds generally make for fire-prone conditions in Contra Costa County, including at the Walnut Creek and Lafayette WTPs sites. The area is subject to hot, dry, northeasterly winds, known as “Diablo winds” in reference to the nearby Diablo mountain range. Diablo winds typically occur during the fall, can have a high velocity (up to 40 miles per hour or more), and can cause significant fire spread (Park District, 2010). June is the windiest month on average in the cities of Walnut Creek and Lafayette, with an average hourly wind speed of 9.9 miles per hour and 9.6 miles per hour, respectively (Weather Spark, 2022). When weather forecasts call for conditions such as low relative humidity and strong winds, which could lead to sudden increases in wildfire activity, “Red Flag” warnings are issued by the National Weather Service. Red Flag warnings serve to alert firefighters and the public to take extra steps to prevent wildfires.

Fire Hazard Severity Zones

Fire hazards in Contra Costa County are present in both developed areas and undeveloped areas. Interface areas are areas susceptible to wildfires and where wildland vegetation and urban or suburban development occur together. In undeveloped areas, large brush and grass fires can occur, which, due to their distance from firefighting resources, can be difficult to contain. The areas of Contra Costa County most susceptible to wildfire are the East Bay Hills in the cities of Lafayette, Moraga, and Orinda. Parts of Walnut Creek, especially the area surrounding the

Rossmoor community (located to the southwest of Interstate 680 [I 680] and south of SR-24), are also vulnerable to wildfires (CAL FIRE, 2022).

The California Department of Forestry and Fire Protection (CAL FIRE) has developed a fire hazard severity scale based on specific fire hazard criteria: vegetation (fuels), fire weather (winds, temperatures, humidity levels, and fuel moisture contents) and topography. Areas are classified as Very High, High, or Moderate Fire Hazard Severity Zones (FHSZs).

Neither the Walnut Creek WTP nor the Lafayette WTP sites are located in designated FHSZs (**Figure 3.15-1**). However, Very High FHSZs exist in surrounding areas, including to the west of the Walnut Creek WTP site, near Briones Regional Park, and to the south of the Walnut Creek WTP site, to the south of the Acalanes Ridge Open Space Area. There are also larger areas designated as Very High FHSZs located to the north of the Lafayette WTP site, north of SR-24, and to the west of the Lafayette WTP site, west of the Lafayette Reservoir Recreation Area, south of Mt. Diablo Boulevard (CAL FIRE, 2007).

The City of Walnut Creek General Plan, however, identifies the "threat to people from wildland fire" at the Walnut Creek WTP site as "Very High" (Walnut Creek General Plan, 2006 - Figure 7 Wildland-Urban Interface Fire Threat), because of the proximity to wildland areas in the Acalanes Ridge Open Space (City of Walnut Creek, 2006). The City of Lafayette General Plan does not include a map of areas subject to high threat of fire.

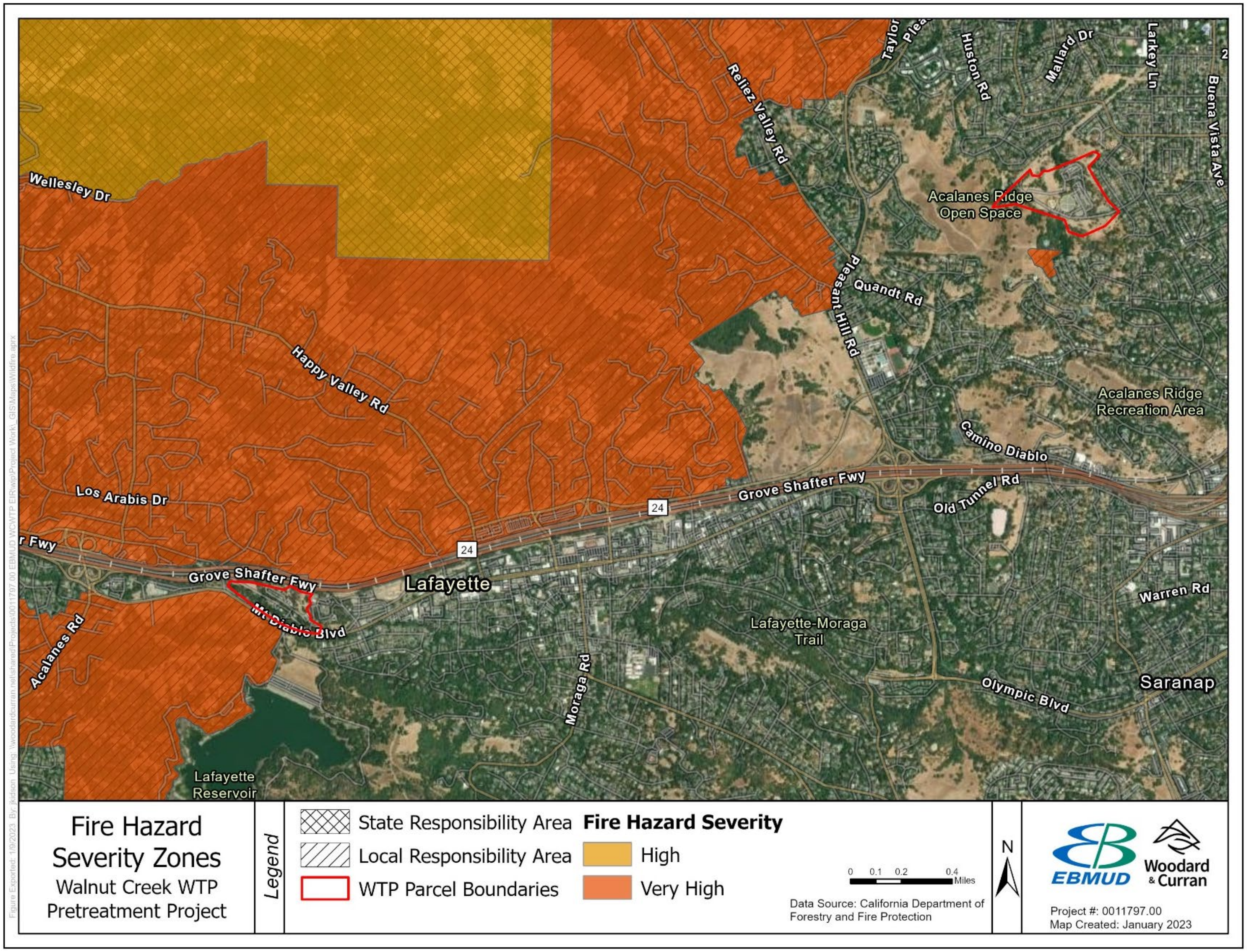
CAL FIRE also identifies the agency responsible for fire response in the area (federal, State, or local). CAL FIRE is responsible for fire prevention and suppression in their "State Responsibility Areas" (SRAs), while local entities are responsible for fire response in "Local Responsibility Areas" (LRAs). Public Resources Code Section 4012 defines SRAs as areas of California in which the financial responsibility of preventing and suppressing fires has been determined to be primarily the responsibility of the State. Lands that are state- and privately-owned forest, watershed, and rangeland are classified as SRA. Lands within city boundaries or in federal ownership are not in the SRA. LRAs are incorporated cities, urban regions, agriculture lands, and portions of the desert where the local government is responsible for wildfire protection. Wildfire protection in LRAs is typically provided by city fire departments, fire protection districts, counties, and by CAL FIRE under contract.

Both the Walnut Creek and Lafayette WTPs Project sites are designated as LRAs, indicating that all jurisdictions are responsible for wildfire management in that area. The Walnut Creek and Lafayette WTPs sites are within the Contra Costa County Fire Protection District (CCCFPD) service area.

Fire History

Contra Costa County has experienced 27,322 acres burned due to wildfires since record keeping began in 1878, through 2015 (Contra Costa County, 2018). Contra Costa County historically experiences wildfires every two to three years. With drought conditions in recent years, wildfires have occurred annually. None of the fires in the CCCFPD service area have caused sufficient damage to trigger a state or federal disaster declaration. On June 11, 2010, the Vista Fire burned 186 acres east of Walnut Creek, in the Shell Ridge Recreation Area. Several other wildfires burning over 10 acres have been recorded in or near Contra Costa County in recent years (Contra Costa County, 2018).

Figure 3.15-1: Fire Hazard Severity Zones



Over the past few years, California has experienced a dramatic rise in both the number and severity of wildland fires. Six of the 20 largest fires in California's recorded history have burned in the last five years and 10 of California's most destructive wildfires have occurred since 2015 (Contra Costa County, 2022). The largest wildfire to occur in Contra Costa County, the Santa Clara Unit (SCU) Lightning Complex, occurred in 2020. The SCU Lightning Complex burned 396,624 acres and destroyed 222 structures in Santa Clara, Contra Costa, Alameda, Stanislaus, and San Joaquin Counties (CCCFPD, 2021).

Emergency Response

As referenced above, the Walnut Creek and Lafayette WTPs sites are within the CCCFPD service area. The CCCFPD is responsible for providing emergency fire-protection, first-responder emergency and medical services, and fire prevention services to the cities of Walnut Creek and Lafayette, as well as the 12 other cities and unincorporated areas across their 304 square-mile jurisdiction in Contra Costa County (CCCFPD, 2022).

The CCCFPD deploys from 30 staffed fire stations located throughout its service area (CCCFPD, 2022). Firefighting response time to suburban portions of the service area is 12 minutes, 90 percent of the time (CCCFPD, 2021).

3.15.2 Regulatory Framework

This section describes policies and regulations related to wildfire that may apply to the Project.

Federal Policies and Regulations

Disaster Mitigation Act of 2000

The Disaster Mitigation Act of 2000 amended the existing statutes (the Stafford Act and the Public Works Act) to require local governments to prepare hazard mitigation plans as a condition of receiving funding from the Federal Emergency Management Agency (FEMA) Hazard Mitigation Grant Program. The general purpose of the Disaster Mitigation Act was to reduce preventable, repetitive disaster losses by encouraging states and local jurisdictions to plan more wisely through mitigation of natural hazards, vulnerability, and risk.

State Policies and Regulations

California Fire Code

The California Fire Code (Part 9 of Title 24 of the California Code of Regulations [CCR]) includes provisions and standards for numerous aspects of fire prevention and response, including emergency planning and preparedness, fire service features, fire protection and life safety systems, means of egress, fire safety during construction and demolition, hazardous materials, fire flow and fire hydrant requirements, and vegetation clearance in wildfire hazard areas.

Among the California Fire Code's regulations for hazardous materials are specific requirements for the safe storage and handling of flammable and combustible liquids. The California Fire Code, Article 80, includes specific requirements for the safe storage and handling of hazardous materials. These requirements reduce the potential for a release of hazardous materials and for the mixing of incompatible chemicals and specify secondary containment, separation of incompatible materials and spill response procedures to reduce the potential for a release of hazardous materials that could affect public health or the environment.

California Public Resources Code

Section 4291 et seq. of the Public Resources Code includes requirements for defensible space in mountainous areas, forest-covered lands, shrub-covered lands, grass-covered lands, or land that is covered with flammable material. Property owners are required to remove flammable vegetation and brush within 100 feet of buildings, with more stringent fuel reductions required within 30 feet of a structure.

California Multi-Hazard Mitigation Plan

The 2018 California State Hazard Mitigation Plan represents the state's primary hazard mitigation guidance document (State of California, 2018). California is required to review and revise its State Hazard Mitigation Plan and resubmit for FEMA approval at least once every five years to ensure continued funding eligibility for certain FEMA grant programs. The 2018 plan includes: an updated statewide risk assessment, disaster history, and statistics; recent mitigation progress, success stories, and best practices; updated state hazard mitigation goals, objectives, and strategies; and updated climate mitigation progress and adaptation strategies. The plan is intended to reduce the effects of disasters in the state, including fires, earthquakes and geologic hazards, floods, and others. The plan sets mitigation priorities, strategies, and actions, such as reducing loss of life and property and protecting the environment.

Local Policies and Regulations

Contra Costa County Fire Ordinance

The Contra Costs County Fire Ordinance (Ordinance No. 2019-37), adopted in 2019 by Contra Costa County and the CCCFPD, establishes the provisions of the California Fire Code (California Code of Regulations, Title 24, Part 9), as amended, to be controlling and enforceable within the limits of local jurisdiction.

Contra Costa County Local Hazard Mitigation Plan

Over the past two decades, local hazard mitigation planning has been driven by the federal Disaster Mitigation Act of 2000. To meet the requirements of the Disaster Mitigation Act, Contra Costa County maintains a Local Hazard Mitigation Plan (LHMP) which is updated at regular intervals dictated by FEMA (every five years). The LHMP includes recommended mitigation actions to help achieve the goals of the LHMP (Contra Costa County, 2018). Actions that address wildfire are listed below.

Action #CW-1: Continue to maintain a County-wide hazard mitigation website that will store the hazard mitigation plan and provide the public an opportunity to monitor plan implementation progress.

Action #CW-2: Leverage public outreach partnering capabilities in the planning area to promote a uniform and consistent message on the importance of proactive hazard mitigation.

Action #CW-3: Coordinate mitigation planning and project efforts in the planning area to leverage all resources available to the planning partnership.

Action #CW-4: Where appropriate, support retrofitting, purchase, or relocation of structures in hazard-prone areas to protect the structures from future damage, with repetitive loss and severe repetitive loss properties as a priority. Seek opportunities to leverage partnerships in the planning area in these pursuits.

Action #CW-5: Continue to update hazard mapping with best available data and science as it evolves, within the capabilities of the partnership. Support FEMA's RiskMAP initiative.

Action #CW-6: To the extent possible based on available resources, provide coordination and technical assistance in applying for grant funding.

Action #CW-7: A steering committee will remain as a working body over time to monitor progress of the hazard mitigation plan, provide technical assistance to planning partners, manage data, and oversee the update of the plan according to schedule. This body will continue to operate under the ground rules established at its inception.

Contra Costa County Emergency Operations Plan

The Contra Costa County Emergency Operations Plan is intended to provide the basis for a coordinated response before, during and after an emergency affecting Contra Costa County. The Contra Costa County Emergency Operations Plan applies to all emergencies in unincorporated areas of Contra Costa County that generate situations requiring planned, coordinated responses. Contra Costa County Emergency Operations Plan also applies to emergencies that occur within incorporated areas, to the extent that those emergencies require multi-agency coordination at the operational area level (Contra Costa County, 2015).

Community Wildfire Protection Plan

The Community Wildfire Protection Plan for Contra Costa County, most recently updated in 2019, is intended to help agencies, communities, and local homeowners define, plan, and prioritize types of actions that will limit the damage associated with wildland fires (Diablo Firesafe Council, 2019). The plan analyzes fire hazard and risk in the wildland-urban interface and identifies actions to mitigate wildfire effects. Actions in the plan fall into several broad categories, including education and planning, enhanced suppression capability and emergency preparedness, fuel management, and structure retrofits.

Walnut Creek General Plan

The City of Walnut Creek General Plan is a long-range policy document intended to guide physical, economic, and environmental growth in the City of Walnut Creek. The City of Walnut Creek General Plan contains citywide elements, including a Safety and Noise element, which contains goals and objectives to reduce dangers from wildfires. The City of Walnut Creek General Plan, which was adopted in 2006 has a timeframe that extends to the year 2025. Applicable goals and objectives from the general plan are listed below.

Goal 6-4. Strive to prevent and reduce damage related to fire hazards.

> **Policy 6-4.1.** Regulate projects in high-risk areas.
>
> **Policy 6-4.2.** Work with the Contra Costa County Fire Protection District to ensure adequate fire response times and address other fire-related issues in the Planning Area.

Goal 6-6. Provide quick response to disasters.

Policy 6-6.1. In the event of a disaster, strive to reduce injury, loss of life, and property damage.

Policy 6-6.2. Safeguard the city's critical facilities and make any repairs as quickly as possible.

Goal 6-7. Work with the water districts to ensure safe and adequate water supplies for the Planning Area.

Policy 6-7.1. Work with water agencies to secure water supplies to serve the Planning Area's growing number of residents and employees.

Lafayette General Plan

The City of Lafayette General Plan is a long-range policy document intended to guide physical, economic, and environmental growth in the City of Lafayette. The City of Lafayette General Plan contains citywide elements, including a Safety element. The City of Lafayette General Plan, which was adopted in 2002 and most recently amended in 2020, has a timeframe that extends to the year 2040. Applicable goals and objectives from the general plan are listed below.

Goal S-4. Minimize risks to Lafayette residents and property from fire hazards.

Policy S-4.1. Adequate Fire Protection: Enforce regulations and standards which contribute to adequate fire protection.

Policy S-4.2. Reducing Fire Risk From Development: Take measures to reduce fire risks from new and existing development as well as natural fire hazards.

Policy S-4.5. Vegetation Management Plan: Require development in a high fire risk area to have an approved vegetation management plan that includes native, drought tolerant, and fire resistant species.

Goal S-9. Maintain an effective medical emergency response system.

Policy S-9.1 Emergency Medical Service: Work to improve emergency medical response service in Lafayette.

East Bay Regional Park District Wildfire Hazard Reduction and Resource Management Plan

The Park District manages over 110,000 acres in Alameda and Contra Costa counties, including the Briones to Mt. Diablo Regional Trail, which is adjacent to the northern edge of the Walnut Creek WTP. The Park District Wildfire Hazard Reduction and Resource Management Plan is intended to assess the needs and recommended priorities for vegetation management to protect lives, property, and natural resources from catastrophic wildfire (EBRPD, 2010). The Wildfire Hazard Reduction and Resource Management Plan provides specific goals, objectives, guidelines, and best management practices to guide wildfire hazard reduction and resource management activities to be carried out by the Park District. Goals and guidelines focus on reducing fire hazards on Park District-owned lands in the wildland-urban interface and include:

- Reducing fuel loads to a level that would produce no greater than an 8-foot flame within 200 feet of structures during a fire incident (which represents a nationally recognized standard).

- Treating trees and shrubs on ridgetops along the wildland-urban interface to reduce the potential for wildfire to reach the crowns of trees (which can lead to burning materials being carried long distances).
- Prioritizing treatment areas, with preference given to maintenance of previously treated areas. New treatment areas are prioritized based on risk of spreading wildfire to adjacent urban properties, location near high-value facilities, strategic locations for firefighting operations, and evacuation and access routes.
- Supporting roadside clearance projects.

EBMUD Local Hazard Mitigation Plan

Hazard Mitigation is commonly defined as "sustained action taken to reduce or eliminate long-term risk to human life and property from hazards." A hazard mitigation plan identifies the hazards a community or region faces, assesses their vulnerability to the hazards, and identifies mitigation actions that can be taken to reduce the risk. EBMUD's current Local Hazard Mitigation Plan was adopted in 2018, and an update to the Local Hazard Mitigation Plan is in draft form as of early 2023. The Local Hazard Mitigation Plan describes wildfire hazards, past wildfire events, and future potential for wildfire events, focusing primarily on EBMUD watershed lands. The Local Hazard Mitigation Plan summarizes past actions taken to mitigate wildfire hazards, and identifies future projects to mitigate hazards. The Project is identified in the Local Hazard Mitigation Plan as one that would help alleviate wildfire impacts associated with water quality changes (EBMUD, 2018).

EBMUD Emergency Action Plans and Fire Prevention Plans

Cal/OSHA requires that both the Walnut Creek WTP and Lafayette WTP maintain an Emergency Action Plan and Fire Prevention Plan. EBMUD maintains a Site Security Emergency Action Plan for the Walnut Creek WTP (EBMUD, n.d.b) and the Lafayette WTP (EBMUD, n.d.a), both of which meet the Cal/OSHA requirement for Emergency Action Plan and Fire Prevention Plan. Both the Lafayette and Walnut Creek WTPs plans describe specific features of the WTP facility that prevent or mitigate hazards and establish initial responsibilities and actions to be taken to protect the health and safety of employees, contractors, vendors, visitors and customers in the event of an emergency (e.g., fire, chemical leaks and spills). The plans include information such as evacuation routes and assembly areas, procedures to follow for reporting fires and other emergencies, staff responsible for controlling accumulation of flammable materials, chemicals, and hazardous waste, and staff responsible for maintaining fire prevention systems.

EBMUD Standard Construction Specifications

EBMUD's Standard Construction Specifications and Procedures apply to all contractors completing work for EBMUD, and to work completed by EBMUD staff. The following EBMUD practices and procedures are applicable to wildfire and post-fire flooding:

- **EBMUD Standard Construction Specification 01 35 24, Project Safety Requirements**

  EBMUD Standard Construction Specifications 01 35 24, Project Safety Requirements (EBMUD, 2020) includes control measures for safety, fire prevention, and emergency response that are applicable to the Project, as described below.

- **Project Health and Safety Plan.** EBMUD Standard Construction Specification 01 35 24 Section 1.3(B) requires that, before the start of construction, the contractor shall prepare a Project Health and Safety Plan approved by EBMUD that addresses anticipated hazards related to hazardous substances, fall protection, confined spaces, and trenches or excavations. The plan must designate a Project Health and Safety Representative, and all personnel who will likely be exposed to hazardous substances must have appropriate training. The plan shall include an Emergency Action Plan in the event of an accident or serious unplanned event that requires notifying any responsive agencies (e.g., fire department, Pacific Gas & Electric, rescue teams). A pre-work project jobsite survey is also required, which includes steps such as documenting weather conditions including increased fire danger.
- **Emergency Action Plan.** EBMUD Standard Construction Specification 01 35 24 Section 1.3(E) requires the contractor to submit an Emergency Action Plan that prepares responses to accidents and injuries, as well as other serious unplanned events, such as fire, which requires notifying any responsible agencies (including fire departments).
- **Fire Prevention and Protection.** EBMUD Standard Construction Specification 01 35 24 Section 3.2(G) dictates fire prevention and protection practices. The fire prevention and protection standard requires the contractor to maintain adequate firefighting equipment on site, and requires compliance with applicable federal, local, and state fire prevention regulations. Earthmoving and portable equipment with internal combustion engines shall be equipped with a properly-maintained spark arrestor to reduce the potential for igniting a wildfire. For all work occurring between April 1 and December 1, or any other periods during which a high fire danger has been identified, restrictions are placed on equipment use. During periods of high fire danger, equipment that could produce a spark, fire, or flame shall not be used within 10 feet of any flammable materials, and portable tools powered by gasoline-fueled internal combustion engines shall not be used within 25 feet of any flammable materials. The standard also requires that 100 feet of defensible space be established around the construction site, including mowing brush and grasses to a height of 4 inches or less, removing dead trees, tree trimming, establishing clearance between structures and trees and all combustible matter. All combustible materials must be stacked away from structures within construction site and have all combustible growth cleared for 15 feet around the stack. During construction, the contractor must maintain an unobstructed horizontal clearance at access drives in accordance with fire code.

- **EBMUD Standard Construction Specification 01 35 44, Environmental Requirements**

  EBMUD Standard Construction Specification 01 35 44 (Environmental Requirements) sets forth the contract requirements for environmental compliance to which construction crews must adhere, including provisions for protection of water quality during construction (EBMUD, 2023).

  The General Requirements of EBMUD Standard Construction Specification 01 35 44 stipulate that the construction crew shall be responsible for maintaining compliance with applicable federal, state, and local requirements. The requirements include preparation of plans that outline procedures to be followed to ensure effective stormwater/non-stormwater management and documentation of compliance. EBMUD reviews submittals for conformance with the requirements of the contract document and specified laws and regulations. Specific planning documents and procedures related to protection of water quality that are required by EBMUD for construction are described below.

- **Controls on Site Activities.** EBMUD Standard Construction Specification 01 35 44 Section 1.1(B), Site Activities, requires that activities on the construction site are controlled to prevent discharge of contaminated stormwater. Applicable requirements include:
  - Protect storm drains and surface waters from impacts of project activity.
  - Store materials and wastes such as demolition material, soil, sand, asphalt, rubbish, paint, cement, concrete or washings thereof, oil or petroleum products, or earthen materials in a manner to prevent it from being washed by rainfall or runoff outside the construction limits.
  - Reuse or dispose of excess material consistent with all applicable legal requirements and disposal facility permits.
  - Clean up all spills and immediately notify the Engineer in the event of a spill.
  - Equip stationary equipment such as motors, pumps, and generators with drip pans.
  - Divert or otherwise control surface water and waters flowing from existing projects, structures, or surrounding areas from coming onto the work and staging areas. The method of diversions or control shall be adequate to ensure the safety of stored materials and of personnel using these areas.
  - Following completion of Work, remove ditches, dikes, or other ground alterations made by the Contractor. The ground surfaces shall be returned to their former condition, or as near as practicable, in the Engineer's opinion.
  - Handle, store, apply, and dispose of any chemical or hazardous material used in the performance of the Work in a manner consistent with all applicable federal, state, and local laws and regulations.
- **Storm Water Management.** EBMUD Standard Construction Specification 01 35 44 Section 1.4(A), requires submittal of a Stormwater Pollution Prevention Plan (SWPPP) that describes measures that shall be implemented to prevent the discharge of contaminated storm water runoff from the jobsite. Contaminants to be addressed include, but are not limited to, soil, sediment, concrete residue, pH less than 6.5 or greater than 8.5, and chlorine residual and all other contaminants known to exist at the jobsite location as described in Document 00 31 24 – Materials Assessment Information. In addition to the State’s General Construction Stormwater Permit, the Contractor shall obtain and comply with regulatory requirements of local storm water permits, such as Contra Costa County’s County Watershed Program to enable the inspection of C.6 construction stormwater BMPs.

3.15.3 Impact Analysis

Methodology for Analysis

Potential impacts related to wildfire are assessed based on a review of information concerning fire risk factors and behavior, Project activities, conditions at the Walnut Creek WTP and Lafayette WTP sites, and applicable regulations.

Significance Criteria

Consistent with Appendix G of the *CEQA Guidelines,* an impact related to wildfire would be considered significant if the Project would be located in or near state responsibility areas or lands classified as Very High FHSZs, and:

1. Substantially impair an adopted emergency response plan or emergency evacuation plan.
2. 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.
3. 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.
4. 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.

Criteria Requiring No Further Evaluation

Criteria listed above that are not applicable to actions associated with the Project are identified below, along with a supporting rationale as to why further consideration is unnecessary and a no-impact determination is appropriate.

- ***Substantially impair an adopted emergency response plan or emergency evacuation plan (Criterion 1).*** Construction and operation activities would take place entirely within the Walnut Creek and Lafayette WTPs and would not interfere with emergency response or emergency evaluation plans. Thus, there would be no impact and Criterion 1 is not discussed further in the analysis presented below.
- ***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 (Criterion 3).*** This criterion addresses associated infrastructure that is ancillary to the project itself. The Project would not require the installation of associated infrastructure that would exacerbate wildfire risks such as roads, firebreaks, power lines or other utilities. Thus, there would be no impact and Criterion 3 is not discussed further in the analysis presented below.

Impacts and Mitigation Measures

Impact WF-1: 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. (Criterion 2)

Construction Phase 1 and Phase 2

Construction activities can exacerbate the risk of wildfire because construction equipment can generate fires from hot exhaust gases or from contact with the hot surfaces of the exhaust system. Walnut Creek and Lafayette WTPs staff and area residents could be exposed to risk of wildfire or associated pollutants in the event of a wildfire at the Walnut Creek or Lafayette WTP sites.

While neither the Walnut Creek WTP nor the Lafayette WTP are located in a Very High FHSZ, weather conditions at both sites are characterized by dry summers, low precipitation, and occasionally gusty winds, which generally make for fire-prone conditions. The Walnut Creek WTP is situated on the northeastern flank of a northwest trending ridge atop a smaller, northerly trending spur. There are slopes along the eastern, western, and northern portions of the Walnut Creek WTP site. The Lafayette WTP site itself is relatively flat, largely due to grading completed with prior development; however, the Lafayette WTP site exists on a larger slope facing towards Mt. Diablo Boulevard. Consistent with existing conditions, sloping topography, prevailing winds and other factors could impact wildfire conditions at both the Walnut Creek and Lafayette WTPs sites.

During Phase 1 and Phase 2 construction, the site operator and/or construction contractor would be required to comply with EBMUD safety specifications for performing work in a fire-safe manner, and supply and maintain on the site adequate fire-fighting equipment capable of extinguishing incipient fires. The site operator or construction contractor would also be required to comply with applicable state and local fire-prevention regulations. Work activities during construction would comply with applicable requirements for vegetation clearance, project safety, and emergency access.

As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including EBMUD Standard Construction Specification 01 35 24, which dictates project safety requirements. EBMUD Standard Construction Specification 01 35 24 Section 1.3(B) requires that, before the start of construction, the contractor shall prepare a Project Health and Safety Plan approved by EBMUD that addresses anticipated hazards related to hazardous substances, fall protection, confined spaces, and trenches or excavations. EBMUD Standard Construction Specification 01 35 24 Section 1.3(E) requires the contractor to submit an Emergency Action Plan that prepares responses to accidents and injuries, as well as other serious unplanned events, such as fire, which requires notifying any responsible agencies (including fire departments). Additionally, EBMUD Standard Construction Specification 01 35 24 Section 3.2(G) requires firefighting equipment on site, requires construction equipment to be properly maintained (including spark arrestors for internal combustion engines), and requires that 100 feet of defensible space be maintained around work sites, including mowing brush and grass to a height of 4 inches or less, and clearing combustible matter such as tree trimmings. Designated areas with combustible materials must be located away from structures and have combustible growth cleared for 15 feet around the combustible materials. During periods of high fire danger, further restrictions would be in place, as stated in EBMUD Standard Construction Specification 01 35 24 Section 3.2(G). For example, during high fire danger, any gas-powered portable tools may not be used within 25 feet of flammable materials.

Construction would require the use of diesel fuel that would be stored at the Walnut Creek WTP and Lafayette WTP sites during construction. The Project would adhere to the California Fire Code, Article 80, which includes specific requirements for the safe storage and handling of flammable and combustible liquids or hazardous materials.

Although construction would temporarily introduce activity and potential ignition sources to the Walnut Creek and Lafayette WTPs sites, compliance with applicable regulations, vegetation management and fire preparedness in accordance with California Fire Code, Article 80, and EBMUD Standard Construction Specifications would reduce the associated wildfire risk.

Because the Project would be required to comply with numerous laws and regulations including the California Fire Code Article 80 and because EBMUD Standard Construction Specification 01 35 24, Project Safety Requirements, has been incorporated into the Project Phase 1 and Phase 2 construction activities and includes measures to store adequate firefighting equipment on site and maintain defensible space around structures and work areas to reduce the potential for wildfire ignition and spread, the risk of wildfire as a result of construction activities is considered low, and the risk of exposing Project occupants to pollutant concentrations from wildfire or uncontrolled spread of a wildfire is less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (**Appendix E**) lists the applicable standard specifications language.

Operation and Maintenance

While operation and maintenance of water treatment plant facilities does not entail high fire risk, both the Walnut Creek and Lafayette WTPs have an Emergency Action Plan and Fire Prevention Plan as required by Cal/OSHA (as described in *Section 3.8, Hazards and Hazardous Materials*) (EBMUD, n.d.a and EBMUD, n.d.b). These plans require specific maintenance and inspection activities for fire prevention. Long-term site maintenance would continue, and would involve vegetation management on site, keeping the site clean and free of debris, and trimming shrubbery and trees for both fire prevention and public safety.

The ozone generation building at the Walnut Creek WTP would include adjacent liquid oxygen storage tanks on a concrete pad and surrounding concrete wall. The electrical facilities building at the Walnut Creek WTP would include on-site fuel storage for the emergency back-up generators. Diesel for the emergency backup generators would be stored in tanks with secondary containment. Both the ozone and diesel storage tanks would be operated, maintained, and tested in accordance with applicable regulations. The California Fire Code, Article 80, includes specific requirements for the safe storage and handling of flammable and combustible liquids or hazardous materials, which would be adhered to during operational activities at the Walnut Creek WTP. The site-specific Emergency Action Plan and Fire Prevention Plan would be updated after the completion of the Project to address the potential fire safety impacts associated with fuel storage, ozone and liquid oxygen facilities, and ensure that safety measures are included in ongoing operations. Ongoing maintenance activities would continue to be conducted by staff already on site. Fire risk at the Walnut Creek WTP site would be comparable to the existing operations.

Because the Project would be required to comply with numerous laws and regulations, including the California Fire Code, Article 80, and long-term site maintenance would continue, including measures to maintain defensible space, operation and maintenance activities would not exacerbate wildfire risk and expose people to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire, and impacts would be less than significant.

The Project does not include operation or maintenance changes at the Lafayette WTP site that would affect fire risk, including the storage or handling of flammable or combustible materials.

Significance Determination Before Mitigation

Less than significant.

Mitigation Measures

None required.

Impact WF-2: 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. (Criterion 4)

Walnut Creek WTP Construction Phase 1 and Phase 2

The Project includes the construction of new structures and paved areas including new paved roads and parking spaces, which would increase impervious surface area and potentially create opportunity for additional runoff or drainage changes that could expose people or structures to risk from downslope flooding. New and proposed roads and parking spots at the Walnut Creek WTP were shown previously in **Figure 2-3**. Rainfall from areas where new impervious surface is created would be directed to existing and new storm drain pipelines, v-ditches, bio-swales, and energy dissipators. New bioretention facilities would be constructed around the Walnut Creek WTP site as needed to accommodate the additional runoff from new impervious areas. The Project would include both treatment and flow controls for stormwater runoff. The treatment and flow controls would ensure that runoff from the new facilities does not degrade or erode receiving waters once runoff leaves the site. Stormwater generated from the new facilities constructed under Phase 1 would be directed to new and existing stormwater drains and three new bioretention basins that would be constructed north of the gravity thickeners and in the northwest and southeast corners of the water treatment plant site (see **Figure 2-3**). As described in the Project Description, the approximate 9,000-square-foot bioretention basin would be excavated to a total depth of approximately 3 to 5-feet. A perforated pipeline would be installed at the base of the bioretention basin and would be directed to the existing storm water discharge locations on site. The bioretention basin would be filled with a layer of permeable gravel and a layer of native topsoil material, excavated on site. The bioretention basin then would be planted with shrubs and hydroseed. No off-site drainage system improvements would be required. Thus, post-fire flooding and drainage changes would not be expected at the Walnut Creek WTP as a result of the Project.

The Project would additionally implement erosion control measures in accordance with the Stormwater Pollution Prevention Plan (SWPPP). Stormwater controls would be subject to local drainage and flood control requirements that minimize changes in hydrologic conditions in the watershed and avoid flooding and erosion and sedimentation to off-site areas.

As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including EBMUD Standard Construction Specification 01 35 44, which dictates environmental requirements. EBMUD Standard Construction Specification 01 35 24 Section 1.1(B), Controls on Site Activities, includes provisions for preventing soil erosion and loss during construction, including the diversion of surface waters and maintenance of the construction site to minimize erosion and loss of soil. EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements, Section 1.4(A), Storm Water Management, requires implementation of BMPs for erosion and sediment controls through a SWPPP.

Because the Project would include the construction of new bioretention facilities and flow controls for stormwater runoff, and because EBMUD Standard Construction Specification 01 35 44 has been incorporated into the Project and includes measures to prevent stormwater discharge, the risk of downslope flooding at the Walnut Creek WTP site as a result of runoff, post-fire slope instability, or drainage changes is low, and impacts are considered less than significant.

As presented in *Section 3.6, Geology, Soils and Seismicity*, several landslides exist on the slopes along the easterly, western, and northern portions of the Walnut Creek WTP site (shown previously in **Figure 3.6-5**) (Ninyo & Moore, 2022). However, with the exception of the southern Intermediate Ozone Contactor, the mapped landslides do not overlap with the proposed facilities. The southern Intermediate Ozone Contactor overlaps with a mapped landslide extending down the adjacent slope to the southeast but with the estimated pad grade for the tank at 20 to 27 feet below the existing grade and is anticipated would be on formational material, below the colluvium prone to sliding (Ninyo & Moore, 2022).

A wildfire at the Walnut Creek WTP site would not be anticipated to result in slope instability. A slope stability analysis performed by Ninyo & Moore (2022) to evaluate the impact of the proposed construction on existing slopes at the Walnut Creek WTP indicated that slope stability, as modified by Project construction, is adequate under static conditions (Ninyo & Moore, 2022). Because the modified slopes at the Walnut Creek WTP are anticipated to be stable with the proposed improvements, and the southern Intermediate Ozone Contractor would be sited on formational material below the soils prone to sliding, the risk of landslide at the Walnut Creek WTP as a result of post-fire slope instability would be less than significant.

The Project would include the construction of new bioretention facilities as well as treatment and flow controls for stormwater runoff, and EBMUD Standard Construction Specification 01 35 44 has been incorporated into the Project and includes measures to prevent stormwater discharge. Also, modified slopes at the Walnut Creek WTP are anticipated to be stable with the proposed improvements. Therefore, the Project is not anticipated to contribute to runoff, post-fire slope instability, or drainage changes that would expose people or structures to significant risks, including flooding or landslides, after a wildfire, and would result in a less-than-significant impact. The EBMUD Practices and Procedures Monitoring and Reporting Plan (**Appendix E**) lists the applicable standard specifications language.

Lafayette WTP Construction

In the event of a fire at the Lafayette WTP, post-fire slope instability or drainage changes could contribute to downstream flooding or landslides. The Lafayette WTP is not located in a Very High FHSZ and there are no structures directly downslope of the Lafayette WTP that would be subject to significant risks from runoff, post-fire slope instability or drainage changes.

The Project would not significantly add impervious surface or alter drainage at the Lafayette WTP, and thus would not have the potential to create additional runoff or drainage changes that could expose people or structures to risk.

As presented in *Section 3.6, Geology, Soils and Seismicity*, the 24-acre Delaplane landslide located along SR-24 to the east of the El Nido Ranch Road overpass is actively moving with an overall direction to the south across SR-24, and potentially to the eastern part of the Lafayette WTP site. The landslide toe appears to be constrained to north of Mt. Diablo Boulevard (Lettis Consultants International, 2021). Improvements at the Lafayette WTP include raising one existing weir, replacing one existing weir and construction of new pipelines. As part of the Project, a geotechnical investigation would be conducted at the Lafayette WTP to gather subgrade information and address seismic-related impacts including slope stability. New facilities would be designed and constructed per applicable design criteria and recommendations presented in the geotechnical study that will be conducted at the Lafayette WTP site.

Because the Project would not significantly add impervious surface or alter drainage at the Lafayette WTP, and because new facilities would be designed and constructed in accordance with applicable recommendations presented in the geotechnical study, all new structures would be built such that the risk of landslide as a result of the Project is low, and the impacts are considered less than significant.

Operation and Maintenance

Operation and maintenance activities associated with the Project are not anticipated to increase the risk of flooding or landslide as a result of post-fire conditions. All proposed facilities would require specific maintenance and inspection activities. Long-term site maintenance would continue, and would involve vegetation management on site, keeping the site clean and free of debris, and trimming shrubbery and trees for both fire prevention and public safety. Ongoing maintenance activities would continue to be conducted by staff already on site.

Following construction, the potential for substantial runoff or erosion at the Walnut Creek WTP site would be minimized through erosion control/site stabilization measures that would reduce the risk of flooding. As described in *Section 2.5.26, Stormwater Facilities*, and *Section 2.7.5, Stormwater Management*, new drainage facilities would be constructed as part of the Project to capture and retain stormwater from proposed facilities which would include a bioretention basin, storm drain pipelines, and rip rap lined v-ditches, which would provide treatment and flow control for runoff associated with the proposed facilities. In addition, exposed soils at the Walnut Creek WTP would be hydroseeded with EBMUD's standard hydroseed mix upon the completion of construction to prevent erosion of topsoil. Because the Project would construct new bioretention facilities at the Walnut Creek WTP site and would revegetate exposed soils, enhanced drainage would help to further prevent runoff in the event of post-fire slope instability, and the impact of flooding and erosion in post-fire conditions would be less than significant.

Improvements at the Lafayette WTP include raising one existing weir, replacing one existing weir and construction of new pipelines. Following construction, the potential for substantial runoff or soil erosion at the Lafayette WTP site would be minimized as revegetation for erosion control/site stabilization would be established. After demolition of the existing Lafayette Weir No. 1, the area would be revegetated using EBMUD's standard hydroseed mix. A retaining wall would be constructed downslope of the proposed Lafayette Weir No. 1,which would provide stability to the slope. The area south of the proposed retaining wall would be planted with new oak plantings, with hydroseeding underneath the new tree plantings. Because disturbed areas at the Lafayette WTP would be revegetated with trees and hydroseeding, and a retaining wall would provide slope stability, impacts of flooding and erosion in post-fire conditions would be less than significant.

Operation and maintenance activities at both sites would be similar to existing operations and would not be expected to exacerbate wildfire risk, and erosion control/site stabilization measures at both sites would reduce the risk of flooding. Also, the new bioretention facilities would enhance drainage and reduce runoff. Therefore, the risk of flooding and landslide as a result of runoff, post-fire slope instability, or drainage changes is considered low, and the impact is less than significant.

Significance Determination Before Mitigation

Less than significant.

Mitigation Measures

None required.

Cumulative Impact Analysis

The Project combined with existing and remaining planned development and/or redevelopment at the Walnut Creek and Lafayette WTPs would not be anticipated to increase fire risk because new development and redevelopment at both the Walnut Creek and Lafayette WTPs sites would be required to comply with applicable fire and building codes, which include fire prevention and safety features. Compliance with applicable regulations would lower the chance of a fire igniting and would lower the chance of a fire spreading to off-site areas.

Although the Project is expected to temporarily increase the level of activity and introduce potential ignition sources during construction; the potential impacts related to construction activities are considered cumulatively less than significant because vegetation management and fire preparedness measures would be implemented in accordance with the numerous laws and regulations, including the California Fire Code, Article 80 and EBMUD Standard Construction Specifications. Construction activities at the Walnut Creek and Lafayette WTPs sites are not anticipated to increase the potential for wildfire or cause additional people and structures to be exposed to wildfire risk and are considered cumulatively less than significant.

Because both the Walnut Creek and Lafayette WTPs have an Emergency Action Plan and Fire Prevention Plan as required by Cal/OSHA, which require specific maintenance and inspection activities for fire prevention, and because long-term site maintenance would continue, operational activities at the Walnut Creek and Lafayette WTPs sites are not anticipated to increase the potential for wildfire or cause additional people and structures to be exposed to wildfire risk and are considered cumulatively less than significant.

Construction and operation and maintenance activities would take place entirely within the Walnut Creek and Lafayette WTPs and would not interfere with emergency response or emergency evaluation plans. Thus, there would be no cumulative impacts related to wildfire hazards and emergency access.

Construction and operation and maintenance activities would not 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. Thus, there would be no cumulative impacts related to wildfire risk due to associated infrastructure.

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Chapter 4 Alternatives

This chapter evaluates alternatives to the Walnut Creek Water Treatment Plant (WTP) Pretreatment Project (Project) and examines the potential environmental impacts associated with each alternative. Alternatives are compared to the No Project Alternative and the relative environmental advantages and disadvantages of each alternative are identified.

4.1 Alternatives Analysis Approach

4.1.1 Consideration of Alternatives under CEQA

The California Environmental Quality Act (CEQA) Guidelines Section 15126.6 requires Environmental Impact Reports (EIRs) to evaluate a range of reasonable alternatives to a project, or to the location of a project that would feasibly attain most of the basic project objectives and avoid or substantially lessen significant effects of the project. The following criteria for selecting alternatives are set forth in the CEQA Guidelines:

- An EIR must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. The range of alternatives addressed in an EIR should be governed by a rule of reason. An EIR need not consider every conceivable alternative to a project, and an EIR is not required to consider alternatives which are infeasible (CEQA Guidelines Section 15126.6(a)). When addressing feasibility, factors that may be taken into account include site suitability, economic viability, availability of infrastructure, general plan consistencies, other plans or regulatory limitations, jurisdictional boundaries, and the proponent's ability to reasonably acquire, control, or otherwise have access to an alternative site. (CEQA Guidelines Section 15126.6(f)(1)).
- Evaluation should focus on those alternatives capable of avoiding or substantially lessening any significant environmental effects of the project, even if the alternative would impede, to some degree, the attainment of the project objectives, which are identified in *Chapter 2, Project Description*, or would be costlier. At the same time, among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are (i) failure to meet most of the basic project objectives; (ii) infeasibility, or (iii) inability to avoid significant environmental impacts (CEQA Guidelines Section 15126.6(c)).
- The EIR should identify alternatives that were considered by the lead agency but were rejected as infeasible and the reasons for the lead agency's determination (Section 15126.6(c)).
- A "No Project" alternative must be evaluated, and the EIR must also identify an environmentally superior alternative (Section 15126.6(e)).
- The discussion should not consider those alternatives whose implementation is remote or speculative, and the analysis need not be presented in the same level of detail as the assessment of a proposed project.

Based on the CEQA Guidelines, several factors should be considered in determining the range of alternatives to be analyzed in an EIR and the level of analytical detail that should be provided for each alternative. These factors include:

1. The potential for the proposed project to result in significant impacts;
2. The ability of alternatives to reduce or avoid the significant impacts associated with the proposed project;
3. The ability of the alternatives to meet the objectives of the proposed project; and
4. The feasibility of the alternatives.

4.1.2 Approach to Analysis

Alternatives considered in this analysis include those alternatives identified by the East Bay Municipal Utility District (EBMUD) in its Water Treatment and Transmission Improvements Program EIR (WTTIP EIR, certified in 2006; EBMUD, 2006a), various engineering studies considering alternatives for upgrading treatment at the Walnut Creek WTP (Carollo, 2000; Carollo, 2018; CH2M Hill, 1999) and the Final-Draft Basis of Design Report, Walnut Creek Water Treatment Plant Pretreatment Project (EBMUD, 2020). No significant alternatives to the Project were suggested by members of the public or regulatory agencies during scoping; however, one commenter proposed an alternative location for the hydraulic weirs on the Lafayette Aqueducts.

The environmental analysis in this EIR indicates that the Project would not result in any significant and unavoidable long-term operation and maintenance impacts. The only significant and unavoidable impact would be temporary, early morning haul truck noise associated with 6:00 a.m. start time extended concrete pours at the Walnut Creek WTP, which are expected to occur on approximately 55 work days over the entire construction period for Phases 1 and 2. The alternatives analysis thus focuses on whether there is an alternative that would avoid or reduce the severity and magnitude of the Project's noise impacts during construction because those impacts are of the greatest concern to the residents neighboring the Walnut Creek WTP. *Section 2.3* in *Chapter 2, Project Description*, describes the objectives of the Project.

The EBMUD Board of Directors will review and consider the information contained in this EIR before deciding whether to approve, disapprove, or modify the Project.

4.2 Project Alternatives Development: Water Treatment and Transmission Improvements Program EIR

The WTTIP EIR considered six alternatives, all of which involved improvements at the Walnut Creek WTP. Three of the alternatives were evaluated in detail in the WTTIP EIR, including the project that was approved by the EBMUD Board of Directors in December 2006 (Supply from Walnut Creek and Lafayette WTPs–Alternative 1). The alternatives evaluation contained in the WTTIP EIR is incorporated by reference in this Project EIR. All three alternatives examined in the WTTIP EIR involved adding ultraviolet (UV) disinfection and high-rate sedimentation prior to filtration at the Walnut Creek WTP. Alternatives considered in the WTTIP EIR did not include ozone treatment and thus did not address taste and odor problems resulting from algae and organics in the untreated water and did not include solids handling and dewatering improvements with gravity thickeners, and thus would have higher operational traffic for removal of solids as compared to the Project.

4.3 Project Alternatives Development: Engineering Alternatives for Pretreatment

Since 1999, EBMUD has considered multiple alternatives for adding pretreatment facilities to address changes in untreated water quality. EBMUD considered both on-site alternatives for improvements at the Walnut Creek WTP and off-site alternatives for adding pretreatment at the Bixler Chlorination Facility near Brentwood in Contra Costa County or further upstream at the Camanche Reservoir near Clements in San Joaquin County.

4.3.1 Off-Site Alternatives

Pretreatment of Freeport Water near Camanche

Because water from the Freeport Regional Water Project (Freeport) has higher organics, total dissolved solids, and turbidity[1] than water from the Mokelumne River, EBMUD considered the possibility of pretreating Freeport water at a new pretreatment WTP that would be located near EBMUD's Camanche Reservoir (CH2M Hill, 2002) before the pretreated water is pumped into the Mokelumne Aqueducts through existing pumping plants. Construction of a pretreatment facility would have had potentially significant environmental impacts at the proposed site near the Camanche Reservoir, including substantial added traffic during construction. This pretreatment facility would only pretreat a small portion of the EBMUD water supply that is only used during drought conditions and would not provide pretreatment for the primary water sources coming from the Pardee, nor would it be able to pretreat water stored EBMUD's Briones Reservoir or from the raw water intertie with Contra Costa Water District (CCWD) because they would be downstream of the distant pretreatment facility at Camanche Reservoir. This alternative would also be more costly and would not minimize environmental impacts. Because a pretreatment facility near the Camanche Reservoir would not be able to pretreat water stored in Pardee Reservoir or Briones Reservoir or the CCWD Intertie and would not improve operational flexibility at the Walnut Creek WTP this alternative would not meet Project objectives.

Upcountry Pretreatment at Bixler

Because a pretreatment facility for Freeport water at Camanche Reservoir would not provide pretreatment of water from the Pardee Reservoir, EBMUD considered another offsite alternative for pretreatment before the Mokelumne River water reaches the service area. An alternative for pretreating water at the Bixler Chlorination Facility in Brentwood was evaluated (Carollo, 2018). This alternative requires the construction of a new pretreatment facility and 30,000 horsepower pumping plant to pump the pretreated water to Walnut Creek WTP. Operation of the new pumping plant creates new operational constraints on the Mokelumne Aqueducts, involves high energy usage, and high pressures on the Mokelumne Aqueducts. This alternative also could not pretreat water stored in Briones Reservoir or untreated water from the CCWD intertie, because

[1] Turbidity is the measure of relative clarity of a liquid and is a key test of water quality. It is an optical characteristic of water and is a measurement of the amount of light that is scattered by material in the water when a light is shined through the water sample. The higher the intensity of scattered light, the higher the turbidity (and the poorer the water quality). Turbidity measurements are most commonly presented in Nephelometric Turbidity Units (NTU).

these supplies would enter EBMUD's water system downstream of the pretreatment at the Bixler Chlorination Facility. The pretreatment facility would also have a high cost for construction, estimated to be $770 million in 2018 dollars (Carollo, 2018). Construction of a pretreatment facility at the Bixler Chlorination Facility would have environmental impacts similar to the construction of a facility near the Camanche Reservoir. While this alternative would provide pretreatment for water from the Pardee Reservoir, pretreatment at the Bixler Chlorination Facility would not be able to pretreat water stored in Briones Reservoir or the CCWD Intertie and would not improve operational flexibility at the Walnut Creek WTP and would thus not meet Project objectives.

4.3.2 Alternatives for Pretreatment at the Walnut Creek WTP

Once EBMUD determined that on-site pretreatment at the Walnut Creek WTP was the preferred location to meet water quality objectives, Carollo Engineers was retained to work with EBMUD to develop alternatives for pretreatment at the Walnut Creek WTP. Previously EBMUD had considered pretreatment alternatives to improve flocculation and sedimentation at the Walnut Creek WTP (CH2M Hill, 1999) and this information informed the subsequent assessment of pretreatment alternatives. Alternatives that were considered for on-site water pretreatment are discussed below (Carollo, 2000; Carollo, 2018).

- Direct filtration: addition of upstream flocculation prior to filtration;
- Conventional water treatment process: addition of flocculation and horizontal gravity sedimentation basins prior to filtration;
- High rate sedimentation and UV disinfection: addition of sedimentation prior to filtration with UV for backwash disinfection;
- Direct filtration and ozone: installation of flocculation mixers/tanks upstream of filters, pretreatment with ozone, gravity thickeners and dewatering building;
- Micro/ultrafiltration: membrane filtration with multiple banks of pumps and membrane pressure vessels; and
- Actiflo and ozone: installation of Actiflo high rate sedimentation upstream of filters with both pretreatment and intermediate ozone treatment, gravity thickeners and dewatering building (this is the Project).

Engineering evaluation of these alternatives determined that only micro/ultrafiltration and the Project were capable of pretreating Pardee Reservoir water at the typical range of organics and turbidity levels that have the potential to occur. However, while the Project can pretreat very high turbidity water (greater than 50 NTU) events which could occasionally occur, the micro/ultrafiltration process cannot. The micro/ultrafiltration process also produces a corrosive waste stream, has high energy and capital costs, requires a large footprint, and would not effectively utilize the existing treatment processes. Because the micro/ultrafiltration process would be very expensive to build and operate and cannot pretreat water with very high turbidity, micro/ultrafiltration was not considered further.

4.4 Project Alternatives Development: Facilities Design

After it was determined to proceed with the Project, EBMUD prepared a final-draft Basis of Design Report (BODR) to develop facilities (EBMUD, 2020), which was relied upon in the preparation of the Project Description presented in *Chapter 2* of this EIR. The BODR considered facility alternatives for disposal of additional thickened solids that would be generated by high turbidity events at the new pretreatment facility.

4.4.1 Thickened Solids Treatment

After high turbidity events in the Mokelumne River watershed, there will be an increase in thickened solids to dispose of from the Walnut Creek WTP. The BODR considered sand drying beds, discharge to the sanitary sewer, trucking to the EBMUD wastewater treatment plant, and mechanical dewatering and trucking to a landfill. Mechanical dewatering and trucking of dewatered solids to a landfill was selected as the best alternative as it would result in the lowest volume of solids to off haul and would allow EBMUD to recycle the greatest volume of water back to the reclaim vault at the head of the Walnut Creek WTP. Sand drying beds require a very large area, which is not available at the Walnut Creek WTP site. Discharge to the sanitary sewer has low capital costs, but very high operating costs ($1 million to $3 million/year in sewer fees) and would require a major sewer pipeline replacement project within Larkey Lane. Also, there are elements such as potential restrictions in discharge rate imposed by the Central Contra Costa Sanitary District, which would require increased trucking and risks/liability associated with discharging to a neighborhood sanitary sewer system. The current practice of trucking thickened solids was not considered viable once pretreatment waste streams are added, due to the high solids volumes and corresponding high number of truck trips.

4.5 Alternatives Rejected from Further Consideration

As indicated in the preceding sections, a total of 12 pretreatment alternatives have been considered for the Walnut Creek WTP: three that were considered as part of the WTTIP EIR and related planning efforts, two that were evaluated in determining the location for pretreatment facilities, six that were considered during the engineering evaluation of pretreatment technology alternatives, and one that was developed as part of the 2020 BODR process. The three alternatives addressed in the WTTIP EIR were eliminated from consideration because the alternatives did not meet the Project's primary operational objective to maintain treatment capacity when untreated water quality at Pardee Reservoir or Briones Reservoir is diminished or when supplemental supplies are being introduced and would not include dewatering to reduce the amount of solids that would have to be trucked off site, which does not meet the objective of minimizing greenhouse gas emissions. As noted above, the off-site alternatives were eliminated because the alternatives could not treat all of the water sources that enter the Walnut Creek WTP, are not cost-effective, have substantial environmental impacts, and do not improve operational flexibility at the Walnut Creek WTP. The proposed pretreatment process at the Walnut Creek WTP site using ballasted flocculation and ozone was selected because of the smaller Project footprint and the cost-effectiveness to treat the full range of water quality that might be experienced at the Walnut Creek WTP in the future. The BODR process resulted in selection of the optimum procedure for thickened solids handling and water reuse and for the size and location of the proposed consolidated maintenance building; other alternatives would not have met the needs of the Project.

During scoping a member of the public suggested an alternative to modifying the weirs at the Lafayette WTP. The comment suggested that instead of modifying weirs at the Lafayette WTP, EBMUD should place a new Lafayette Weir No. 1 at the East Portal of the Walnut Creek #1 Tunnel, which is located near the Walnut Creek WTP. The East Portal is located on the EBMUD property on the Aqueduct right-of-way just outside the northwest corner of the Walnut Creek WTP. Access to the portal is provided by the Briones to Mt. Diablo Regional Trail. Construction at this location would require construction and inspection vehicles to travel on the existing gravel access road, likely requiring several weeks of closure of the Briones to Mt. Diablo Regional Trail. Construction traffic would be in close proximity to residents on Quail View Circle. This alternative would not avoid or reduce any significant impacts because modification of weirs at the Lafayette WTP does not entail significant impacts. Because there are no significant impacts associated with construction at the Lafayette WTP and because construction at the East Portal would increase impacts to residents adjacent to the Walnut Creek WTP and would potentially require temporary closure of the Briones to Mt. Diablo Regional Trail, this alternative is not evaluated further.

4.6 No Project Alternative

4.6.1 Alternative Description

Under the No Project Alternative, the proposed pretreatment facilities would not be constructed. The circumstances that have caused EBMUD to move forward with the Project, described in *Section 2.2, Project Background*, (i.e., reduced source water quality due to algae blooms, elevated turbidities from strong rains and from different water quality in the Sacramento River drought supply, fires in the watershed leading to high turbidity runoff, and a more variable climate), are anticipated to continue. Consequently, under the No Project Alternative, the Walnut Creek WTP would be less adaptive to on-going and future changes in source water quality, and therefore EBMUD customers may be required to ration more frequently and experience undesirable taste and odor during periods when untreated water quality is diminished in Pardee Reservoir, during droughts when supplemental supplies are entering EBMUD's water system, and during future high demand periods or during planned or unplanned outages when there is insufficient supply or treatment capacity to meet demands. EBMUD would implement costly and energy intensive short-term measures to mitigate the magnitude and frequency of rationing and address undesirable taste and odor, including backwashing filters more frequently, which requires more pumping, maximizing daily Walnut Creek WTP production by operating distribution pumping plants throughout the day including hours when renewable electricity is not plentiful and electricity costs are higher, and generating a larger volume of solids increasing operational truck trips to haul solids to a landfill for disposal.

The No Project Alternative would require more truck trips for solids removal than the Project because without gravity thickeners and a dewatering building, the volume and moisture content of the solids removed from the Walnut Creek WTP site would be greater than with the Project. The existing Walnut Creek Alternate Emergency Operations Center would continue to be spread over multiple locations at the Walnut Creek WTP, leading to potential inefficiencies during emergencies. Without the proposed Project, EBMUD may be unable to use interconnections with untreated water supplies (if the supply has high turbidity, organics and/or algae) from neighboring agencies, which may also reduce EBMUD's ability to support planned and unplanned outages. Refer to *Section 4.5, Alternatives Rejected from Further Consideration*, regarding other alternatives to expanding operations at the Walnut Creek WTP that have been contemplated since 1999.

4.6.2 Project Objectives

Table 4-1 presents Project objectives and an evaluation of whether the No Project Alternative meets those objectives. As explained in **Table 4-1**, the No Project Alternative would not meet any of the Project-specific objectives. With regard to the secondary objectives, the No Project Alternative would meet the aesthetic objective, because with the No Project there would be no aesthetic changes. However, the No Project Alternative would not meet objectives related to life-cycle costs and extending the useful life of facilities, and could have adverse effects on human beings.

4.6.3 Impact Discussion

If the Project was not implemented, none of the impacts identified in *Chapter 3, Environmental Setting, Impacts, and Mitigation Measures*, would occur. Conditions described in the setting sections presented in *Chapter 3* would persist. The short-term significant impact of construction haul truck noise along San Luis Road at Buena Vista Avenue would be eliminated.

As described in *Section 2.2* of *Chapter 2*, the Project would provide a long-term, cost-effective solution to make the Walnut Creek WTP more adaptive to changes in source water quality that are anticipated to continue due to more variable and warming climate, fires in the watershed, and future droughts. EBMUD is obligated to continue to comply with water quality regulations, as noted in *Section 2.2.3* of *Chapter 2*. In the near term, the Walnut Creek WTP would continue to provide reliable treatment, but the conditions warranting the Project (changing source water quality and the need to maintain capacity to treat water at the Walnut Creek WTP) would persist and could worsen (e.g., if a wildfire in the Mokelumne River watershed were to compromise source water quality). Without pretreatment, the filters and existing settling basin and pump can be quickly overwhelmed by high turbidity, organics, and algae events. If the Project was not implemented, EBMUD would continue to take incremental reactionary steps to address the increase in turbidity by bypassing Walnut Creek WTP during high turbidity and low water quality events but would not add pretreatment processes to the Walnut Creek WTP. Lower quality water supply could lead to decreased WTP capacity due to increased water turbidity, as well as taste and odor issues associated with increased organic material and associated disinfection byproducts. Additionally, the Alternate Emergency Operations Center would continue to be spread over multiple locations at the Walnut Creek WTP, leading to potential inefficiencies during emergencies.

Table 4-1: Project Specific Objectives – No Project Alternative

	Objective	Does the No Project Alternative Achieve Objective?
Primary Operational Objectives	Maintain water treatment capacity at the Walnut Creek WTP when untreated water quality is diminished at Pardee Reservoir or Briones Reservoir due to high rainfall runoff, watershed fire events, droughts, algae blooms, and emerging contaminants.	No. Water treatment capacity would be reduced when water quality is diminished.
	Increase flexibility to treat a broader range of water quality from supplemental water supplies entering EBMUD's water system from the Sacramento River via Freeport Regional Water Project.	No. There would be a limited ability to treat the broader range of water quality from supplemental Freeport water and substantial taste and odor problems due to organics and algae in the water supply.
	Increase flexibility to treat a broader range of water quality from supplemental water supplies entering EBMUD's water system from neighboring water agencies through untreated water agency interties during planned and unplanned outages as well as droughts.	No. There would be a limited ability to treat the broader range of water quality from supplemental water from neighboring agencies and substantial taste and odor problems due to organics and algae in the water supply.
	Increase the water treatment capacity to meet planned future demands, support planned and unplanned outages and rate restrictions at other water treatment plants, recover distribution storage quickly after power outages, allow distribution pumping plants to operate only when renewable electricity is most plentiful and electricity costs are lowest, and accommodate the potential decommissioning of the Lafayette WTP.	No. Water treatment capacity would continue to be constrained by process limitations.
	Continue to meet drinking water and environmental regulations and achieve EBMUD's internal long-term water quality goals.	No. There would be a risk of not meeting water quality regulations and not achieving water quality goals.
Secondary Operational Objectives	Maintain a similar and acceptable aesthetic site environment after construction.	Yes. The Walnut Creek WTP would not be changed aesthetically.
	Minimize life-cycle costs (capital, operating, and maintenance) to EBMUD's customers.	No. Without the Project the costs to treat higher turbidity water will increase dramatically. EBMUD would have to backwash the filters more frequently, have greater solids handling and disposal costs, and would have to replace filters on a more frequent basis.
	Maximize the useful life of existing facilities in a manner that reduces costs for customers.	No. Without the Project the existing gravity filters at the Walnut Creek WTP would not last as long and the useful life of the existing solids handling facilities would be reduced, resulting in higher costs.

	Objective	Does the No Project Alternative Achieve Objective?
	Minimize operational emissions of greenhouse gases.	No. While there would be no operational greenhouse gas emissions increases due to the Project, the No Project Alternative would require more truck trips for solids removal than the Project because without gravity thickeners and a dewatering building, the volume and moisture content of the solids removed from the Walnut Creek WTP site would be greater than with the Project.
Construction Objectives	Minimize environmental impacts on the community during construction. Reuse or recycle building materials on site to the extent feasible, including concrete demolition materials and excavated earth. Maintain water service and emergency flows during construction. Protect the local community from construction hazards. Provide safe construction site conditions.	Not applicable. There would be no construction associated with the No Project Alternative.

4.7 No Dewatering Building Alternative

4.7.1 Alternative Description

This alternative involves eliminating the dewatering building at the Walnut Creek WTP from the Project and reducing the size of the gravity thickeners, which would reduce the overall temporary construction impacts associated with the Project, and long-term visual impacts by not constructing the dewatering building. There would be no change to the facilities that would be constructed at the Lafayette WTP. With no dewatering building and smaller gravity thickeners, the overall construction footprint would be smaller, requiring less earthwork and soil off-haul to construct the facilities.

Without dewatering, the Project would generate a larger volume of wetter solids, because the dewatering building further reduces the overall volume of solids by removing the water and condensing the solids. Water removed from the dewatering operation can then be reused by pumping the water to the combined reclaimed metering vault, which is not possible without a dewatering building. With a higher volume of wetter solids there would need to be more operational truck trips to haul solids to a landfill for disposal and haul water for disposal.

4.7.2 Project Objectives

Table 4-2 presents the Project objectives along with an evaluation of whether the No Dewatering Building Alternative meets those objectives. As shown in **Table 4-2**, the No Dewatering Building Alternative would meet the Project-specific objectives but would not meet secondary operational objectives related to minimizing life cycle costs and minimizing greenhouse gas emissions because solids removal costs would increase without dewatering and there would be greenhouse gas emissions associated with trucking larger volumes of wet solids.

4.7.3 Impact Discussion

Aesthetic impacts of the No Dewatering Building Alternative would be less than those of the Project because the dewatering building would no longer be visible from the Briones to Mt. Diablo Regional Trail (see **Figure 3.1-14** in the *Section 3.1, Aesthetics* for view of the dewatering building as part of the proposed Project). Although the building is only partially visible, without the building the visual impact of the Project would be reduced.

Air quality and GHG impacts during construction would be reduced under the No Dewatering Building Alternative because there would be less grading and fewer emissions from construction equipment because of the reduced extent of construction. Operational haul truck emissions of criteria pollutants and GHGs would be greater with this alternative than with the proposed Project because without dewatering, higher volumes of wetter solids would require more operational truck trips for disposal of solids and associated water, although they would still be expected to be less than significant.

For biological resources, construction activities for smaller gravity thickeners would require less grading and would require less encroachment into the riparian areas along the two intermittent drainages that are located on both sides of the gravity thickeners (see **Figure 3.3-1** in *Section 3.3, Biological Resources* for the location of riparian areas). Fewer trees would need to be removed under the No Dewatering Building Alternative, however the less than significant impact

Table 4-2: Project Objectives: No Dewatering Building Alternative

	Objective	Does the No Dewatering Building Alternative Achieve Objective?
Project-specific Objectives	Maintain water treatment capacity at the Walnut Creek WTP when untreated water quality is diminished at Pardee Reservoir or Briones Reservoir due to high rainfall runoff, watershed fire events, droughts, algae blooms, and emerging contaminants.	Yes, water treatment capacity would be maintained.
	Increase flexibility to treat a broader range of water quality from supplemental water supplies entering EBMUD's water system from the Sacramento River via Freeport Regional Water Project.	Yes, with flocculation and ozone treatment this alternative would be able to treat a broad range of water quality.
	Increase flexibility to treat a broader range of water quality from supplemental water supplies entering EBMUD's water system from neighboring water agencies through untreated water agency interties during planned and unplanned outages as well as droughts.	Yes, with flocculation and ozone treatment this alternative would be able to treat a broad range of water quality.
	Increase the water treatment capacity to meet planned future demands, support planned and unplanned outages and rate restrictions at other water treatment plants, recover distribution storage quickly after power outages, allow distribution pumping plants to operate only when renewable electricity is most plentiful and electricity costs are lowest, and accommodate the potential decommissioning of the Lafayette WTP.	Yes, water treatment capacity would be expanded.
	Continue to meet drinking water and environmental regulations and achieve EBMUD's internal long-term water quality goals.	Yes, removal of dewatering facilities would not impair the ability of this alternative to meet water quality goals for taste and odor.

Secondary Operational Objectives	Maintain a similar and acceptable aesthetic site environment after construction.	Yes. With fewer facilities to be constructed visual changes to the Walnut Creek WTP would be less, and aesthetics of the site would be maintained.
	Minimize life-cycle costs (capital, operating, and maintenance) to EBMUD's customers.	No. Without dewatering the operational costs of removing solids and disposing of them at a landfill would be higher than for the Project. In addition to higher landfill disposal costs, EBMUD would need to purchase additional solids handling trucks to remove the higher volume of solids. Without dewatering, water would be wasted because it would be trucked to a landfill or a wastewater treatment plant instead of being recycled.
	Maximize the useful life of existing facilities in a manner that reduces costs for customers.	Yes. Elimination of dewatering from the Project would not change the useful life of existing water treatment facilities.
	Minimize operational emissions of greenhouse gases.	No. Trucking higher volumes of wet solids resulting from the lack of dewatering would result in increased greenhouse gas emissions from mobile sources.
Construction Objectives	Minimize environmental impacts on the community during construction. Reuse or recycle building materials on site to the extent feasible, including concrete demolition materials and excavated earth. Maintain water service and emergency flows during construction. Protect the local community from construction hazards. Provide safe construction site conditions.	Yes. This alternative would reduce environmental impacts to the community near the Walnut Creek WTP during construction.

associated with loss of trees (Impact BIO-5) would be the same under the No Dewatering Building Alternative.

Cultural resources and tribal cultural resources impacts would be expected to be similar to those of the Project, but with less grading there is a slightly reduced potential to encounter previously unidentified cultural resources within the Walnut Creek WTP site.

Energy use for operation of facilities would be reduced if there was no dewatering building, but transportation energy requirements would be substantially greater because more haul trucks would be required to remove the higher volume of wet solids.

With less grading required, potential impacts associated with geology and soils would be reduced as compared to the Project. The potential for water quality impacts during construction would also be reduced because less grading would result in a lower potential for erosion leading to transport of sediments off site.

Noise impacts associated with construction of the No Dewatering Building Alternative would be less than for the Project because there would be less construction on the northern edge of the Walnut Creek WTP. Construction noise impacts to residences on Quail View Court (Impact NOI-1) would be reduced. There would still be a need for large concrete pours and though there may be fewer days with early morning haul truck traffic, the No Dewatering Building Alternative would not eliminate the significant unavoidable impacts associated with haul truck noise along San Luis Road at Buena Vista Avenue.

Recreation impacts would be slightly reduced under the No Dewatering Building Alternative because the Project footprint for the dewatering building and gravity thickeners would be reduced. A smaller portion of the social footpaths would have to be redirected without the dewatering building and smaller gravity thickeners. However, temporary closures of the social footpaths during construction would still be necessary.

Construction traffic would be slightly less for the No Dewatering Building Alternative as compared to the Project. However, operational traffic would be substantially increased because there would be more haul trucks needed to remove the higher volume of wet solids. The number of trucks would increase by 3 to 4 times as compared to the Project. For typical winter storm events producing elevated turbidity the number of solids hauling truck trips would increase from 3 truck trips/day to 10 truck trips/day. For high turbidity events, the number of solids hauling truck trips would go from roughly 21 truck trips/day (less than 3 trips/hour) to 80 truck trips/day (approximately 10 trips/hour over an 8-hour day). Increasing truck trips from 3 trucks/hour to 10 trucks/hour would not have a significant impact on level of service on local streets. Operational traffic impacts would therefore be less than significant and no mitigation would be needed during high turbidity periods with increased solids off-haul.

Impacts to hazards and hazardous materials would not be expected to change under the No Dewatering Building Alternative because existing structures that may have asbestos and lead-based paint would still need to be demolished. Land use impacts would also be the same as for the Project because new facilities would still be constructed at the existing Walnut Creek WTP site.

All impacts associated with the No Dewatering Building Alternative impacts, except for noise, would remain less than significant, or less than significant with mitigation. There would still be a need for large concrete pours and though there may be fewer days with early morning haul truck traffic, the No Dewatering Building Alternative would not eliminate the significant and unavoidable noise impacts from haul truck noise along San Luis Road at Buena Vista Avenue.

4.8 Comparison of Alternatives

Table 4-3 presents a comparison of the Project, No Project Alternative, and No Dewatering Building Alternative. The No Project Alternative would avoid all of the impacts associated with implementation of the Project. However, as shown in **Table 4-1**, the No Project Alternative would not achieve any of the Project-specific objectives. As shown in **Table 4-2**, the No Dewatering Building Alternative would meet the Project's basic objectives but would not meet the objective associated with minimizing life-cycle costs or minimizing operational emissions of greenhouse gases.

With regard to environmental impacts, both the Project and the No Dewatering Building Alternative would result in few significant environmental impacts, due largely to the fact EBMUD standard practices and procedures reduce almost all impacts to less than significant. Compared to the Project, the No Dewatering Building Alternative would reduce one significant and unavoidable impact (Impact NOI-1) by reducing the number of days with early morning haul truck traffic, but there would still be significant and unavoidable noise impacts associated with early morning haul truck traffic and without mitigation construction noise impacts would still be significant because of the overall extent of construction necessary to build the facilities that are required to meet water quality objectives. The No Dewatering Building Alternative would also reduce significant but mitigable construction traffic impacts (Impacts TRA-1 and TRA-3) because the extent of construction would be reduced, but mitigation would still be required to reduce construction traffic impacts to less than significant.

Long-term operational traffic would be increased under the No Dewatering Building Alternative (Impact TRA-1). Without a dewatering building, post-treatment solids hauling would increase by 3 to 4 times from 3 trucks per day to 10 trucks per day under typical conditions and would increase from 21 trucks per day to 80 trucks per day for high turbidity events, which would be infrequent (estimated to occur only once every 10 years). Traffic impacts would still be less than significant under typical conditions because an increase from 3 trucks to 10 trucks per day would not cause congestion on local roads. An increase to 80 trucks per day would not result in significant impacts because level of service would not be affected, but the increased traffic might be noticeable to local residents on those rare occasions when high turbidity events required a substantial number of truck trips from the Walnut Creek WTP. Operational traffic impacts would be less than significant.

Less than significant impacts to aesthetics (AES-1 and AES-2) would be reduced because elimination of the dewatering building would mean that there would be fewer facilities visible from the Briones to Mt. Diablo Regional Trail. Less than significant impacts to biological resources (BIO-1, BIO-2, BIO-3, BIO-4 and BIO-5) would also be reduced because the extent of construction adjacent to the riparian area at the north of the site would be less. Recreation impacts (REC-2) may be reduced if the reduction in grading allows the location of the existing social footpaths to remain unchanged. However, the severity of less-than-significant impacts related to operational traffic (TRA-1) would be increased because there would be substantially more haul trucks required to remove the greater volume of wetter solids.

Table 4-3: Comparison of Alternatives

Impact Statement	Significance[2] Project	No Project	No Dewatering Building	Analysis
Aesthetics				
Impact AES-1: Have a substantial adverse effect on a scenic vista.	LTS	NI	LTS-	**No Project.** Because nothing would be constructed under the No Project Alternative, there would be no impact on scenic vistas. **No Dewatering Building Alternative.** Eliminating the dewatering building and reducing the footprint of the gravity thickeners would reduce the visual impacts on the scenic vista experienced from viewpoint 5, which is along the Briones to Mt. Diablo Regional Trail. The impact of the Project is less than significant, and with fewer facilities the effect on views would be reduced. The impact would remain less than significant.
Impact AES-2: In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings, or in an urbanized area, conflict with applicable zoning and other regulations governing scenic quality.	LTS	NI	LTS-	**No Project.** Because nothing would be constructed under the No Project Alternative, there would be no impact on the visual character of the site. **No Dewatering Building Alternative.** Eliminating the dewatering building and reducing the footprint of the gravity thickeners would reduce the extent of changes to the existing visual character of the Walnut Creek WTP. Views into the site from the Briones to Mt. Diablo Regional Trail would show fewer changes, and those changes would continue to be screened by trees that would be planted. The impact would remain less than significant.
Impact AES-3: Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.	LTS	NI	LTS-	**No Project.** Because there would be no new lighting installed under the No Project Alternative, there would be no new sources of light or glare. **No Dewatering Building Alternative.** Because lighting is proposed for the dewatering building, eliminating this building would reduce operational lighting impacts. The impact would remain less than significant.
Air Quality				
Impact AIR-1: Conflict with or obstruct implementation of the applicable air quality plan.	LTS	NI	LTS	**No Project.** Because there would be no construction under the No Project Alternative, there would be no impact related to construction emissions conflicting with or obstructing implementation of an air quality plan. Operations at the Walnut Creek WTP would, however, change over time as future high-turbidity events would generate larger volumes of solids, requiring increased operational truck trips to landfills, with resulting increases in mobile source emissions. **No Dewatering Building Alternative.** The extent of construction would be decreased, thereby reducing construction emissions. There would be an increase in operational emissions associated with haul trucks transporting solids to landfills. However, operational mobile source emissions for the Project are minimal (see **Table 3.2-9** in *Section 3.2, Air Quality*), so increased operational emissions associated with 7 additional trucks per day needed to transport solids would not exceed significance criteria; mobile source emissions for all criteria pollutants would still be less than 0.5 pounds per day. Construction and operation of the Project would be consistent with all three criteria identified by the BAAQMD to evaluate consistency with the *2017 Clean Air Plan*, impacts with respect to conflicting with or obstructing implementation of the *2017 Clean Air Plan* would remain less than significant.
Impact AIR-2: Expose sensitive receptors to substantial pollutant concentrations.	LTS	NI	LTS	**No Project.** Because there would be no construction under the No Project Alternative, there would be no impact to sensitive receptors associated with construction emissions. Emissions from operational truck trips would still increase because over time there would be more need to haul solids to landfills. **No Dewatering Building Alternative.** The extent of construction would be decreased, thereby reducing the exposure of sensitive receptors to emissions during construction. Haul truck emissions would increase during operations but would not be expected to expose sensitive receptors to substantial pollutant concentrations because mobile source emissions are small. The impact would remain less than significant.
Impact AIR-3: 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.	LTS	NI	LTS	**No Project.** Because there would be no construction at the Walnut Creek WTP under the No Project Alternative, there would be no increase in the cumulative contribution to criteria air pollutant emissions associated with construction. Increases in operational haul truck emissions would result in a minor contribution to cumulative mobile source emissions. **No Dewatering Building Alternative.** The duration and general construction activities would be reduced as compared with the Project; consequently, daily construction emissions are assumed to be smaller than the Project's and thus below significance thresholds. Although operational mobile source emissions from haul trucks would be greater than with the Project, emissions from these activities would still be minimal and well below the BAAQMD's operational significance thresholds. The impact would remain less than significant.
Biological Resources				
Impact BIO-1: 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 CDFW or USFWS.	LTS	NI	LTS-	**No Project.** Because there would be no construction or change in operations at the Walnut Creek WTP under the No Project Alternative, there would be no impact related to substantial adverse effects on any species identified as a candidate, sensitive, or special-status species. **No Dewatering Building Alternative.** The extent of construction within the riparian areas near the gravity thickeners would be reduced under this alternative, thereby reducing the potential to affect nesting birds, roosting bats, and San Francisco dusky-footed woodrat. The impact would remain less than significant.
Impact BIO-2: 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 CDFW or USFWS.	LTS	NI	LTS-	**No Project.** Because there would be no construction or change in operations at the Walnut Creek WTP under the No Project Alternative, there would be no impact on riparian habitat or other sensitive natural communities. **No Dewatering Building Alternative.** The extent of construction within the riparian areas near the gravity thickeners would be reduced under this alternative and fewer trees would need to be removed, thereby reducing potential adverse effects on sensitive natural communities. The impact would remain less than significant.

[2] NI = no impact; LTS = less than significant impact; LSM = less than significant with mitigation measures identified in this EIR.
(-) or (+) = lower or higher end of impact range, respectively. As noted in the text, the impact significance varies depending on the WTP site analyzed.

Impact Statement	Significance[2]			Analysis
	Project	No Project	No Dewatering Building	
Impact BIO-3: 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.	LTS	NI	LTS-	**No Project.** Because there would be no construction or change in operations at the Walnut Creek WTP under the No Project Alternative, there would be no impact on state or federally protected wetlands. **No Dewatering Building Alternative.** The extent of construction within the riparian areas near the gravity thickeners would be reduced under this alternative, thereby reducing potential indirect effects on wetlands, waters of the U.S. and waters of the state. The impact would remain less than significant.
Impact BIO-4: 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.	LTS	NI	LTS-	**No Project.** . Because there would be no construction or change in operations at the Walnut Creek WTP under the No Project Alternative, there would be no impact on the movement of fish or wildlife species. **No Dewatering Building Alternative.** The extent of construction within the riparian areas near the gravity thickeners would be reduced under this alternative and fewer trees would need to be removed, thereby reducing the potential to affect nesting birds. The impact would remain less than significant.
Impact BIO-5: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	-LTS	NI	LTS-	**No Project.** Because there would be no construction or change in operations at the Walnut Creek WTP under the No Project Alternative, there would be no impact related to conflicting with local policies or ordinances protecting biological resources. **No Dewatering Building Alternative.** The extent of construction within the riparian areas near the gravity thickeners would be reduced under this alternative and fewer trees would need to be removed, thereby reducing conflicts with tree protection policies. However, this alternative would not reduce the need for tree removal at the Lafayette WTP because construction at that site would be the same as with the Project. The impact would remain less than significant.
Cultural Resources				
Impact CUL-1: Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5.	LTS	NI	LTS	**No Project.** Because there would be no construction or demolition under the No Project Alternative, there would be no impact related to having a substantial adverse change in the significance of a historical resource. **No Dewatering Building Alternative.** Although the extent of new construction would be reduced, structures at the Walnut Creek WTP would still have to be demolished. However, the Walnut Creek WTP site is not considered a historical resource under CEQA, and this alternative would not cause a substantial change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5. The impact would remain less than significant.
Impact CUL-2: Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to §15064.5.	LTS	NI	LTS	**No Project.** Because there would be no construction or demolition under the No Project Alternative, there would be no impact related to causing a substantial adverse change in the significance of an archaeological resource. **No Dewatering Building Alternative.** Because the extent of grading would be reduced, the potential for inadvertent exposure of buried prehistoric or historic archaeological materials would be even less with this alternative, as compared to the Project. The impact would remain less than significant.
Impact CUL-3: Disturb any human remains, including those interred outside of dedicated cemeteries.	LTS	NI	LTS	**No Project**. Because there would be no construction or demolition under the No Project Alternative, there would be no ground disturbance, and thus no impact related to disturbing any human remains. **No Dewatering Building Alternative.** Because the extent of grading would be reduced, the potential for inadvertent disturbance of human remains would be even less with this alternative, as compared to the Project. The impact would remain less than significant.
Energy				
Impact EN-1: Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.	LTS	LTS	LTS	**No Project.** Without implementation of the Project, additional energy required for operation of ballasted flocculation, ozone, and mechanical dewatering processes would not be required, but operational energy would be expended during high-turbidity events to backwash filters more frequently and operating distribution pumping plants throughout the day. There would be no energy expended for construction. **No Dewatering Building Alternative.** Because the extent of construction would be reduced, energy use for construction would be less than for the Project. Elimination of the dewatering building would reduce the operational energy requirements associated with solids processing but would increase the transportation energy use due to the increased hauling needed to remove wet solids and transport them to a landfill. Impacts would remain less than significant.
Geology, Soils, and Seismicity				
Impact GEO-1: Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: rupture of a known earthquake fault; strong seismic groundshaking; seismic-related ground failure (liquefaction, lateral spreading); or landslides.	LTS	NI	LTS	**No Project.** Because there would be no construction or change in operations at the Walnut Creek WTP under the No Project Alternative, there would be no impact related to causing potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic groundshaking, seismic-related ground failure, or landslides. **No Dewatering Building Alternative.** Because this alternative would be constructed within the Walnut Creek WTP like the Project, impacts related to strong seismic groundshaking, seismic-related ground failure, or landslides would be similar to those of the Project and would be less than significant.
Impact GEO-2: Result in substantial soil erosion or the loss of topsoil.	LTS	NI	LTS-	**No Project.** Because there would be no construction or demolition under the No Project Alternative, there would be no impact related to soil erosion or loss of topsoil. **No Dewatering Building Alternative.** Because this alternative would require less grading than the Project, impacts related to soil erosion would be slightly less than those of the Project and would remain less than significant.

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Impact Statement	Significance[2]			Analysis
	Project	No Project	No Dewatering Building	
Impact GEO-3: 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.	LTS	NI	LTS	**No Project.** Because there would be no construction or demolition under the No Project Alternative, there would be no impact related to being located on a geologic unit or soil that is unstable or that would become unstable as a result of the Project, and potentially could result in on-site or off-site landslides, lateral spreading, subsidence (i.e., settlement), liquefaction, or collapse. effect related to unstable soils. **No Dewatering Building Alternative.** Because this alternative would be constructed within the Walnut Creek WTP like the Project, impacts related to strong seismic groundshaking, seismic-related ground failure, or landslides would be similar to those of the Project and would be less than significant.
Impact GEO-4: 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.	LTS	NI	LTS	**No Project.** Because there would be no construction or demolition under the No Project Alternative, there would be no impact related to being located on expansive soils. **No Dewatering Building Alternative.** Because this alternative would also be constructed within the Walnut Creek WTP in an area with similar soil characteristics, impacts related to slope stability would be similar to those of the Project and would be less than significant.
Impact GEO-5: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	LTS	NI	LTS-	**No Project.** Because there would be no construction or demolition under the No Project Alternative, there would be no impact related to destroying a unique paleontological resource or site or unique geologic feature. **No Dewatering Building Alternative.** Although this alternative would also be constructed within the Walnut Creek WTP, the extent of excavation would be less, and the potential to encounter paleontological resources therefore would be slightly less than with the Project. The impact would remain less than significant.
Greenhouse Gas Emissions				
Impact GHG-1: Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.	LTS	LTS	LTS	**No Project.** Because there would be no construction under the No Project Alternative, there would be no impact related to generating GHG emissions during construction. Operations at Walnut Creek, would require increased energy to backwash filters more frequently and operate distribution pumping plants throughout the day thereby generating more GHG emissions. Additional truck traffic to transport solids to landfills would also generate additional GHG emissions. **No Dewatering Building Alternative.** The duration and general construction activities would be reduced as compared with the Project; consequently, construction GHG emissions are assumed to be smaller than the Project's and thus below significance thresholds. Operational energy use would be reduced with elimination of the dewatering building, thereby reducing GHG emissions associated with generation of power. Although mobile source GHG emissions from haul trucks would be greater than with the Project, emissions from these activities would still be minimal and well below the BAAQMD's operational significance thresholds. The impact would remain less than significant.
Impact GHG-2: Conflict with a plan, policy, or regulation adopted for the purpose of reducing GHG emissions.	LTS	LTS	LTS	**No Project.** Because there would be no construction under the No Project Alternative, there would be no impact related to conflicting with an applicable plan, policy, or regulation pertaining to GHG emissions. Operational energy efficiency measures would continue to be implemented in accordance with the 2014 Climate Change Monitoring and Response Plan and 2021 Climate Action Plan, thus operational GHG emissions would not conflict with Scoping Plan actions, 2017 Clean Air Plan, or the BAAQMD-recommended CEQA significance thresholds. **No Dewatering Building Alternative.** Under this alternative energy efficiency measures would continue to be implemented in accordance with the 2014 Climate Change Monitoring and Response Plan and 2021 Climate Action Plan, thus operational GHG emissions would not conflict with Scoping Plan actions, 2017 Clean Air Plan, or the BAAQMD-recommended CEQA significance thresholds. The impact would remain less than significant.
Hazards and Hazardous Materials				
Impacts HAZ-1 and HAZ-2: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment.	LTS	NI	LTS	**No Project.** Because there would be no construction or change in operations at the Walnut Creek WTP under the No Project Alternative, there would be no impact related to creating 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 likely release of hazardous materials into the environment. **No Dewatering Building Alternative.** Because construction activities would be slightly less and operations activities for this alternative would be similar to those of the Project, impacts related to creating 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 likely release of hazardous materials into the environment would remain less than significant
Impact HAZ-3: Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.	LTS	NI	LTS	**No Project.** Because there would be no construction or change in operations at the Walnut Creek WTP under the No Project Alternative, there would be no impact related to exposing people or structures to a significant risk of loss, injury, or death involving wildland fires. **No Dewatering Building Alternative.** Because this alternative would be constructed within the Walnut Creek WTP like the Project, and because the Project area is not within a Very High Fire Severity Zone, impacts related to exposing people or structures to a significant risk of loss, injury, or death involving wildland fires would remain less than significant.
Hydrology and Water Quality				
Impact HYD-1: Violate any water quality standards or waste discharge requirements, or otherwise substantially degrade water quality.	LTS	NI	LTS-	**No Project.** Because there would be no construction or change in operations at the Walnut Creek WTP under the No Project Alternative, there would be no impact related to violation of water quality standards. **No Dewatering Building Alternative.** The extent of construction activities would be slightly reduced as there would be less need for grading with elimination of the dewatering building and reducing the footprint of the gravity thickeners. Construction activities would not violate water quality standards or waste discharge requirements, or otherwise substantially degrade water quality, and construction impacts would remain less than significant. While operations would be slightly different without dewatering, this change is not expected to increase the risk of operational activities triggering a violation of water quality standards or waste discharge requirements, or otherwise substantially degrading water quality. The impact would remain less than significant.

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Impact Statement	Significance[2]			Analysis
	Project	No Project	No Dewatering Building	
Impact HYD-2: Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin.	LTS	NI	LTS-	**No Project.** Because there would be no construction or change in operations at the Walnut Creek WTP under the No Project Alternative, there would be no impact related to groundwater resources. **No Dewatering Building Alternative.** With a slight reduction in impervious surface area, there would be less potential for interference with groundwater recharge, and operation would not substantially decrease groundwater supplies or interfere with groundwater recharge such that this alternative would impede sustainable groundwater management. The impact would remain less than significant.
Impact HYD-3: 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 result in substantial erosion or siltation on- or off-site, substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site, or 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.	LTS	NI	LTS-	**No Project.** Because there would be no construction or change in operations at the Walnut Creek WTP under the No Project Alternative, there would be no impact related to altering drainage patterns. **No Dewatering Building Alternative.** Because there would be slightly less grading under this alternative, alteration of drainage patterns would be less than with the Project. With elimination of the dewatering building and a reduction in the footprint of the gravity thickeners, surface runoff would potentially be slightly reduced and discharge into the stormwater drainage system would be less. The impact would remain less than significant.
Impact HYD-4: Conflict with or obstruct implementation of a Water Quality Control Plan or Sustainable Groundwater Management Plan.	LTS	NI	LTS-	**No Project.** Because there would be no construction or change in operations at the Walnut Creek WTP under the No Project Alternative, there would be no impact related to conflicting with or obstructing implementation of a water quality control plan or sustainable groundwater management plan. **No Dewatering Building Alternative.** Construction would be reduced under this alternative so there would be less potential for water quality impacts during construction. With a slight reduction in impervious surface area, there would be less potential for interference with groundwater recharge, and operation of this alternative would not impede sustainable groundwater management. The impact would remain less than significant.
Land Use				
Impact LU-1: 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.	LTS	NI	LTS	**No Project.** Because there would be no construction or change in operations at the Walnut Creek WTP under the No Project Alternative, there would be no land use impact related to a conflict with land use plans or policies. **No Dewatering Building Alternative.** Because this alternative would be constructed within the Walnut Creek WTP like the Project, impacts related to land use would be similar to those of the Project and would be less than significant.
Noise and Vibration				
Impact NOI-1: Result in the 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.	SU	NI	SU-	**No Project.** Because there would be no construction at the Walnut Creek WTP under the No Project Alternative, there would be no change in noise and thus no impact related to an increase in ambient noise levels due to construction. Noise from equipment operations would not increase, but future high-turbidity events would generate larger volumes of solids, requiring increased operational truck trips to landfills and resultant increases in noise from haul trucks. The impact would remain less than significant. **No Dewatering Building Alternative.** Eliminating the dewatering building and reducing the footprint of the gravity thickeners would reduce the extent of construction that would occur in the vicinity of sensitive receptors at Quail View Circle. With the proposed project noise impacts during early morning concrete pours would be potentially significant at Quail View Circle but would be reduced under this alternative. However, the most severe construction noise impacts are associated with the Hydrogen Peroxide Building (#18) and Combined Reclaimed Metering Vault (#7), which would still need to be constructed under the No Dewatering Building Alternative. Impacts of construction at the Walnut Creek WTP would be less than significant with implementation of Mitigation Measure NOI-1, which would require implementation of noise reduction measures during construction. However, impacts associated with early morning off-site haul truck noise would remain significant. The impact would remain significant and unavoidable.
Impact NOI-2: Result in the generation of excessive groundborne vibration or groundborne noise levels.	LTS	NI	LTS	**No Project.** Because there would be no construction or change in operations at the Walnut Creek WTP under the No Project Alternative, there would be no impact related to groundborne vibration or groundborne noise levels. **No Dewatering Building Alternative.** As with the Project, vibration levels at the nearest sensitive receptors would be well below significance thresholds, and operations would not introduce any new sources of perceivable groundborne vibration. The impact would remain less than significant.
Recreation				
Impact REC-1: 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.	LTS	NI	LTS-	**No Project.** Because there would be no construction or change in operations at the Walnut Creek WTP under the No Project Alternative, there would be no impact related to increasing the use of existing neighborhood and regional parks or other recreational facilities. **No Dewatering Building Alternative.** There would be less construction required under this alternative, and impacts related to relocating portions of social footpaths at the Walnut Creek WTP would be less than with the Project. Although trails would still need to be closed during construction, closures are not expected to lead to substantial deterioration of existing recreational areas. The impact would remain less than significant.

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Impact Statement	Significance[2]			Analysis
	Project	No Project	No Dewatering Building	
Impact REC-2: Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.	LTS	NI	LTS-	**No Project.** Because there would be no construction or change in operations at the Walnut Creek WTP under the No Project Alternative, there would be no impact related to construction or expansion of recreational facilities. **No Dewatering Building Alternative.** With a smaller project footprint associated with eliminating the dewatering building and reducing the size of the gravity thickeners, less grading would be required and it may not be necessary to redirect the social footpath adjacent to the existing riparian area. The impact would remain less than significant.
Transportation				
Impact TRA-1: Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.	LSM	LTS	LSM	**No Project.** Because there would be no construction or at the Walnut Creek WTP under the No Project Alternative, there would be no impact related to construction traffic conflicting with a program, plan, ordinance, or policy related to the circulation system. However, operational traffic would increase as high turbidity events would generate larger volumes of haul truck traffic. The impact would remain less than significant. **No Dewatering Building Alternative.** Construction truck traffic would be reduced, but operational traffic would be increased because there would be additional hauling to remove wet solids and truck them to a landfill (10 trucks per day as compared to 3 trucks per day with the Project). Both construction and operational impacts would remain less than significant. However, the No Dewatering Building Alternative would not eliminate the need for oversize trucks to access the Walnut Creek WTP during construction. This impact would be less than significant with implementation of Mitigation Measure TRA-1, which would restrict use of oversized vehicles to allowable hours from 9:00 a.m. to 3:30 p.m. and would address any deterioration of roads caused by construction traffic.
Impact TRA-2: Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b).	LTS	LTS	LTS+	**No Project.** Because there would be no construction at the Walnut Creek WTP under the No Project Alternative, there would be no construction period impact related to conflicting with or being inconsistent with *CEQA Guidelines* Section 15064.3(b). Operational haul truck traffic would increase during high turbidity events but would remain less than significant because VMT analysis is only applicable to passenger vehicles and there would still be fewer than 110 trips per day, which is the threshold for small projects. **No Dewatering Building Alternative.** Although operational haul truck trips for solids removal would be double those expected with the Project, the No Dewatering Building Alternative would still generate very few additional vehicle trips (approximately ten daily truck trips at Walnut Creek WTP for winter storm events with elevated turbidity). During rare high turbidity events operational truck traffic at Walnut Creek WTP would increase to up to 80 trucks per day required for removal of solids; but impacts would remain less than significant because these events would be rare (about once every 10 years), and of short duration. Operational traffic impacts at Walnut Creek WTP would be greater than the Project, but less than significant.
Impact TRA-3: Substantially increase hazards due to a design feature or incompatible uses.	LSM	NI	LSM-	**No Project.** There would be there would be no construction and no change to roadway features under the No Project Alternative, and therefore no impact related to increasing hazards due to a geometric design feature or incompatible uses. **No Dewatering Building Alternative.** Construction traffic would be reduced with elimination of the dewatering building, but construction traffic would still create potential safety hazards on Larkey Lane. However, because Mitigation Measure TRA-2 would be implemented, requiring adherence to the Traffic Control Plan with additional safety measures to minimize potential conflicts between Project trips, impacts of construction traffic would be reduced to less than significant.
Impact TRA-4: Result in inadequate emergency access.	LTS	NI	LTS	**No Project.** Because there would be no construction or change in access associated with operations at the Walnut Creek WTP under the No Project Alternative, there would be no impact on emergency access. **No Dewatering Building Alternative.** Construction truck traffic would be reduced and operational traffic would be increased, but neither would impair emergency access because the access points to the Walnut Creek WTP would be unchanged. The impact would remain less than significant.
Tribal Cultural Resources				
Impact TC-1: 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.	LTS	NI	LTS	**No Project.** Because there would be no construction or change in operations at the Walnut Creek WTP under the No Project Alternative, there would be no impact related to having a substantial adverse change in the significance of a tribal cultural resource. **No Dewatering Building Alternative.** Because this alternative would be constructed within the Walnut Creek WTP like the Project, and because there are no archaeological tribal cultural resources within the Walnut Creek WTP site, and there is a low potential to uncover resources during Project implementation, this impact would remain less than significant.
Wildfire				
Impact WF-1: 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.	LTS	NI	LTS	**No Project.** Because there would be no construction or change in operations at the Walnut Creek WTP under the No Project Alternative, there would be no impact related to exacerbating wildfire risks. **No Dewatering Building Alternative.** Because this alternative would be constructed within the Walnut Creek WTP like the Project, and because the Project area is not within a Very High Fire Severity Zone, impacts related to exposing people or structures to a significant risk of loss, injury, or death involving wildland fires would remain less than significant.
Impact WF-2: 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.	LTS	NI	LTS	**No Project.** Because there would be no construction or change in operations at the Walnut Creek WTP under the No Project Alternative, there would be no impact related to exposing people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of run-off, post-fire slope instability, or drainage changes. **No Dewatering Building Alternative.** Because this alternative would be constructed within the Walnut Creek WTP like the Project, and because the Project area is not within a Very High Fire Severity Zone, impacts related to downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes would remain less than significant.

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(-) or (+) = lower or higher end of impact range, respectively. As noted in the text, the impact significance varies depending on the WTP site analyzed.

4.9 Environmentally Superior Alternative

If the Project was not implemented, none of the impacts identified in *Chapter 3, Environmental Setting, Impacts, and Mitigation Measures,* would occur. However, the No Project Alternative would require more long-term, operational truck trips for solids removal than the Project because without gravity thickeners and a dewatering building, the volume and moisture content of the solids removed from the Walnut Creek WTP site would be greater than with the Project. Both the Project and the No Dewatering Building Alternative would result in a short-term significant and unavoidable construction noise impact due to early morning haul truck traffic noise during a limited number of 6:00 a.m. start time concrete pours. Both the Project and the No Dewatering Building Alternative would result in few significant environmental impacts, due largely to the fact that the EBMUD Standard Construction Specifications, practices and procedures reduce most potential significant impacts to less than significant. The Project was developed to be environmentally sensitive and facilities were designed to have the smallest feasible footprint while still accomplishing all of the Project objectives. Although the No Dewatering Building Alternative would reduce the severity of the significant and unavoidable noise impacts and significant but mitigable construction traffic impacts and would reduce the severity of less-than-significant impacts related to aesthetics, biological resources, recreation and hydrology, operational traffic would be incrementally greater under the No Dewatering Building Alternative as compared to the Project. Because ongoing operational traffic impacts would be permanent and are acknowledged to be of concern to the neighborhood, these permanent impacts are considered to outweigh reductions in construction impacts and the minor improvements in less than significant visual impacts. Because operational traffic impacts of the No Dewatering Building would be greater, the Project, as proposed, is considered to be environmentally superior to the No Dewatering Building Alternative. EBMUD has developed a Project that would provide long-term water supply reliability without any significant long-term operation and maintenance impacts.

4.10 References

CH2M Hill. 1999. Technical Memorandum 2.17, Flocculation and Solids Handling Improvements for In-Line Filtration Plants. March 1999.

CH2M Hill. 2001. Technical Memorandum No. 4 Treatment Plant Siting and Design Criteria

Carollo. 2000. East Bay Municipal Utility District Walnut Creek WTP Improvement Project, Technical Memorandum No. 3, Pretreatment. April 2000

Carollo. 2018. East Bay Municipal Utility District Inline Water Treatment Plants' Pretreatment Upgrades, Technical Memorandum 1, Pretreatment Alternatives

EBMUD (East Bay Municipal Utility District). 2006. Water Treatment and Transmission Improvements Program Environmental Impact Report, SCH # 2005092019. November 2006.

EBMUD. 2020. Walnut Creek Water Treatment Plant Pretreatment Upgrades, Basis of Design Report, Final Draft. January 2020.

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Chapter 5 Other CEQA Considerations

5.1 Significant and Unavoidable Impacts

East Bay Municipal Utility District (EBMUD) will be required to adopt Findings and prepare a Statement of Overriding Considerations for unavoidable, adverse impacts as part of its approval of the Walnut Creek Water Treatment Plant Pretreatment Project (Project). The Project would not entail any significant operation and maintenance impacts, and as described in the Environmental Impact Report (EIR) analysis, the majority of impacts during construction can be reduced to a less-than-significant level. The only significant and unavoidable impact identified for the Project was a temporary construction-period noise impact. The following impact was determined to be significant and unavoidable:

Impact NOI-1: Result in the 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. (Criterion 1)

The City of Walnut Creek noise ordinance does not contain quantified noise limits applicable to construction although it states that construction activities are limited to weekdays between the hours of 7:00 a.m. and 6:00 p.m. It is EBMUD's practice is to consider local environmental protection policies for guidance, however as Walnut Creek does not provide any noise limits, the estimated noise during construction was compared to speech interference and sleep interference indicators. Because the City of Walnut Creek does not impose specific limits on daytime construction noise, the Project's construction noise impacts are compared to the hourly speech interference indicator of 70 dBA L_{eq} to provide a reference point for the analysis. For nighttime construction noise (i.e., early morning concrete pour activities), a significant impact would occur if noise levels exceed the sleep interference indicator of 60 dBA L_{eq} at a receptor location outside the hours of 7:00 a.m. to 6:00 p.m. on weekdays.

Noise from all construction activities on site is either less than significant at nearby sensitive receptors or can be reduced to less than significant through implementation of EBMUD's standard practices and procedures for noise and **Mitigation Measure NOI-1**, which includes installation of noise barriers to reduce exposure of nearby residents to noise. Though on-site construction noise can be mitigated through the use of noise barriers, installation of noise barriers along haul routes is not feasible. Most haul and concrete truck activity would occur between the hours of 7:00 a.m. and 6:00 p.m., and haul and concrete truck noise would not exceed the speech interference indictor of 70 dBA along the haul route. However, during days with large concrete pours concrete trucks could start as early as 6:00 a.m. and to determine whether the early morning haul truck noise would have a significant effect on receptors along the haul route, noise levels were compared to the sleep disturbance indicator of 60 dBA. Even after considering EBMUD standard practices and procedures, which include a range of noise control measures and incorporating **Mitigation Measure NOI-1**, which includes coordination of activities to minimize or eliminate non-essential noise-generating activities between 6:00 a.m. and 7:00 a.m., noise from concrete trucks along San Luis Road at Buena Vista Avenue would be 61 dBA, which exceeds the 60 dBA sleep disturbance indicator. Therefore, noise increases associated with concrete truck traffic during early morning concrete pours are considered to be significant and unavoidable because, after implementation of feasible mitigation, noise levels before 7:00 a.m. would still exceed the sleep interference criterion of 60 dBA. Noise levels would exceed 60 dBA intermittently, and only during the days when there are extended concrete pours, which would occur for about 40 days in Phase 1, and 15 days during Phase 2.

5.1.1 Significance Determination before Mitigation

Significant. Because noise levels associated with concrete truck traffic during early morning concrete pours would exceed 60 dBA, the sleep interference criterion, during concrete deliveries that occur before 7:00 a.m., noise impacts associated with concrete pours would be potentially significant and would require mitigation.

Mitigation Measure NOI-1: Additional Noise Control and Monitoring Plan Measures at the Walnut Creek WTP

The Noise Control and Monitoring Plan required in the Project specifications would include specific measures to reduce noise to ensure that noise at residential receptors does not exceed 60 dBA L_{eq} before 7:00 a.m. in Walnut Creek. The following measures, or their equivalent, would be used in combination to meet the noise limits:

- Coordinate worksite activities to minimize or eliminate non-essential noise-generating activities between 6:00 a.m. and 7:00 a.m.
- Install temporary sound barriers achieving a minimum sound transmission class (STC) 25 to block the line of sight from concrete activities to nearby residences (**Figure 3.11-5**) for the duration of the applicable construction phase(s).
  - To reduce noise by at least 8 dBA from concrete trucks at the Hydrogen Peroxide Station during Phase 1, sound barriers would need to be at minimum 8 feet high and located on the northeast side of the Hydrogen Peroxide Station.
  - To reduce noise by at least 5 dBA from concrete trucks at the Combined Reclaimed Metering Vault during Phase 1, sound barriers would need to be at minimum 9 feet high, and located on the north, northeast, and northwest sides of the vault.
  - To reduce noise by at least 3 dBA from concrete trucks at the Thickened Solids Pumping Plants and Gravity Thickeners during Phases 1 and 2, sound barriers would need to be at minimum 9 feet high and located on the northeast side of the work area.
  - To reduce noise by at least 5 dBA from early morning worker arrivals and parking at Staging Area 4 during Phases 1 and 2, sound barriers would need to be at minimum 6 feet high and located on the east side of the staging area.

5.1.2 Significance Determination after Mitigation

The noise impact described above would be significant and unavoidable for concrete truck traffic that occurs before 7:00 a.m. during extended concrete pours. **Mitigation Measure NOI-1** would reduce noise impacts from on-site construction activities to less than significant levels. However, it is not feasible to construct noise barriers along haul routes, and it is not possible to eliminate the need for trucks to deliver concrete between 6:00 a.m. and 7:00 a.m. during extended concrete pours. Concrete work requires a 6:00 a.m. start time due to the need for setup in the morning to mobilize a pump truck prior to the first delivery of concrete. Pump trucks will typically arrive at 6:00 a.m., ahead of the rest of the concrete crew. Disruptions in the concrete pour can affect the quality of the concrete work and service life of the structure; therefore, it is extremely important that concrete trucks arrive at regular intervals, particularly later in the concrete pour. If concrete truck movement is inhibited by heavy traffic later during afternoon commute hours, the concrete pour operation could be disrupted. In addition, concrete work is affected by temperature. Early start times ensure longer periods of time when temperatures are lower and concrete sets slower and is easier to work with. Consequently, noise from early morning haul trucks during concrete pours would be significant and unavoidable.

5.2 Irreversible and Irretrievable Commitments of Resources

The State of California Environmental Quality Act (CEQA) Guidelines (Section 15126(c)) require that an EIR include a discussion of the significant irreversible environmental changes that would be caused by a project should it be implemented.

Irreversible commitment of resources occurs as a result of the use or destruction of a specific resource (e.g., minerals extraction, destruction of cultural resources) which cannot be replaced or, at a minimum, restored over a long period of time. Irretrievable commitment of resources refers to actions resulting in the loss of production or use of natural resources and represents the effects that the use of nonrenewable resources could have on future generations (e.g., land conversion to new uses; construction of levees preventing the natural flooding of floodplains).

The Project would result in the irreversible and irretrievable commitment of the following resources during construction, operation, and maintenance:

- Construction materials such as asphalt, concrete, and steel;
- Energy resources such as electricity, fuel, oil, and natural gas for construction equipment; and for operation and maintenance of new pretreatment facilities.
- Nonrenewable materials such as gravel and petroleum products.

Similar to any infrastructure project of its size and kind, the Project would require the commitment of material resources to the construction of new facilities. However, it is likely that materials such as steel and concrete would be recycled off site following the life of the Project. No other irreversible permanent changes, such as those that might result from construction of a large-scale mining project, a hydroelectric dam, or other industrial project, would result from development of the Project. Construction of the pretreatment facilities would occur within the footprint of the existing Walnut Creek WTP and Lafayette WTP sites and would not result in the irreversible or irretrievable commitment of the Project area as a land resource.

As noted in *Section 3.5, Energy*, operation and maintenance of the Project would require an increase in electrical power at the Walnut Creek WTP of approximately 2,000 to 5,000 MWh each year depending on untreated water quality. Energy would be required for lighting in the new buildings and for operation of the ballasted flocculation, ozone generation, and mechanical dewatering equipment.

5.3 Growth-Inducing Impacts

CEQA requires the Lead Agency to evaluate whether a Project would directly or indirectly induce growth of population, economic development, or housing construction. Specifically, CEQA Guidelines Section 15126.2(d) states the need to evaluate the potential for a project to "foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth (a major expansion of a wastewater treatment plant might, for example, allow for more construction in service areas)." Directly induced growth is associated with residential or commercial development projects that would result in a population increase or in an increase in the number of employees. Indirectly induced growth is associated with reducing or removing barriers to growth, or creating a condition that encourages additional population or economic activity. Ultimately, both types of growth induction result in population increase, which "may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects" (CEQA Guidelines Section 15126.2[d]). Other potential environmental impacts related to growth include increased traffic, air emissions, and noise; degradation of water quality; loss of sensitive biological and cultural resources; increased demand on public services and infrastructure; and changes in land use and conversion of agricultural or open space to accommodate development.

Under CEQA, growth inducement is not considered necessarily detrimental, beneficial, or of little significance to the environment. Projects are considered to have growth-inducing implications when economic, housing, or population growth would be stimulated, either directly or indirectly.

The Project involves addition of pretreatment and ozone improvements in two separate phases that would allow EBMUD to more reliably treat a broader range of untreated water quality and would increase the capacity to 160 MGD. Increasing the capacity would allow the Walnut Creek WTP to serve planned land use changes and redevelopment projects disclosed and incorporated into relevant land jurisdiction general plans.

The Project would have no potential to directly foster population growth or to result in the construction of additional housing in the service area for the Walnut Creek WTP. Operation and maintenance of the Project would only require two to four new permanent employees who would not be expected to generate a demand for new housing. Project construction would contribute to local economic growth from construction expenditures for labor and materials, but given the existing population of unemployed construction workers, it is expected that all Project construction labor needs would be readily met by current residents of the region. As such, the Project has no potential to directly induce growth.

Local land use plans provide for land use development patterns and growth policies that allow for the orderly expansion of urban development supported by adequate urban public services, such as water supply, roadway infrastructure, sewer service, and solid waste service. Typically, the growth-inducing potential of a project or program would be considered significant if it encourages growth or a concentration of population in excess of what is projected in the adopted general plan of the community in which the project is located, or significantly exceeds the population and employment projections made by regional planning agencies.

Land use agencies in the EBMUD service area, including the cities and counties, develop and adopt long-term planning documents such as general plans for the physical development within their jurisdiction. These planning documents determine the nature and intensity of land uses to be served by EBMUD. Demand associated with land use agency planned growth, as set forth in those approved planning documents, was accounted for in EBMUD's 2050 Demand Study

(EBMUD, 2020), which was used to determine Project sizing and design. Because the Project would serve planned land use changes and redevelopment projects disclosed and incorporated into the land use agency general plans and subsequent amendments thereto, implementation of the Project would not support growth beyond planned levels or in areas not planned for development by the land use agencies. Therefore, any potential growth-inducing impacts from the Project would be less than significant.

5.4 Cumulative Impacts

The cumulative impact analysis for each individual resource topic is included in each resource section.

5.5 References

EBMUD. 2020. 2050 Demand Study

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