FONTAINE PUMPING PLANT REPLACEMENT PROJECT

OAKLAND, CALIFORNIA

MITIGATED NEGATIVE DECLARATION



EBMUD

EAST BAY MUNICIPAL UTILITY DISTRICT

October 2021

October 14, 2021

NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION
Fontaine Pumping Plant Replacement Project

Project Title: Fontaine Pumping Plant Replacement Project (Project)

Lead Agency: East Bay Municipal Utility District (EBMUD)

Project Location: 8445 Ney Avenue and 9601 MacArthur Boulevard, City of Oakland

Project Description: EBMUD's existing 20 million gallon per day (mgd) Fontaine Pumping Plant (PP), located at 8445 Ney Avenue, Oakland, would be replaced with a new 20 mgd PP on EBMUD-owned property at 9601 MacArthur Boulevard, Oakland. A new rate control station (RCS) will be constructed at the new Fontaine PP site and approximately 4,750 feet of new 30-inch suction and discharge pipelines would be constructed to connect the new Fontaine PP and RCS to the distribution system. Upon construction completion and successful testing of the new PP, pipelines and RCS, the existing PP would be demolished and approximately 2,100 feet of existing buried pipelines would be abandoned in place.

Project Objective: The Project is designed to replace aging infrastructure and improve water service reliability by relocating the existing PP outside of an active fault and landslide area and constructing a new RCS which can deliver water to other parts of the distribution system during planned and unplanned facility and pipeline outages.

Environmental Determination: Pursuant to the requirements of the California Environmental Quality Act, an Initial Study was prepared for the Project. Based on the results of the Initial Study, it was determined that project-related construction work could potentially generate environmental impacts to aesthetics and transportation. Long-term PP, pipeline and RCS operation would not generate significant impacts. Proposed mitigations would be implemented into the Project to ensure that the Project would not generate a significant adverse impact on the environment. Based on this assessment, a "Mitigated Negative Declaration" has been prepared.

Environmental Mitigation: All impacts would be reduced to Less than Significant levels by implementation of proposed mitigation measures.

Public Comment/Review: The Mitigated Negative Declaration is available for review at:

- East Bay Municipal Utility District, 375 11th Street, Oakland, CA 94607 (by appointment)
- EBMUD website (www.ebmud.com/FontainePP)
- City of Oakland Public Library, 125 14th Street, Oakland, CA 94612

Public Meeting: A virtual Zoom public meeting is scheduled for October 27, 2021 at 6:00 p.m. to review the Mitigated Negative Declaration. Zoom information will be available 72 hours before meeting on the Project website (www.ebmud.com/FontainePP).

Deadlines: In accordance with Section 15073 of the California Environmental Quality Act Guidelines, this Mitigated Negative Declaration is available for public review from October 14, 2021 through November 15, 2021. Written comments on this proposed Mitigated Negative Declaration must be received no later than 4:30 p.m. on November 15, 2021. Please address comments to East Bay Municipal Utility District, Daniel Jones, Associate Civil Engineer, 375 11th Street, M/S 701, Oakland, California 94607, or email to FontainePP@ebmud.com. Action on this Mitigated Negative Declaration is currently scheduled to be taken by the EBMUD Board of Directors at a regularly scheduled Board meeting in May 2022 at 375 11th Street, Oakland, CA.

10/14/2021
Date

Olujimi O.Yoloye
Director of Engineering and Construction

TABLE OF CONTENTS

CHAPTER 1 – SUMMARY 1-1

1.1. Project Objective 1-1
1.2. Purpose of Mitigated Negative Declaration 1-4
1.3. Summary of Environmental Considerations 1-4
1.4. List of Referenced Studies by Environmental Topic 1-4
1.5. Circulation of the MND 1-5

CHAPTER 2 – PROJECT DESCRIPTION 2-1

2.1. Overview 2-1
2.2. Condition of the Existing Pumping Plant 2-2
2.3. Proposed Project 2-3
2.4. Environmental Setting 2-8
2.5. Construction Activities 2-9
2.6. Operations and Maintenance 2-14
2.7. Project Schedule 2-14
2.8. EBMUD Practices and Procedures 2-14
2.9. Permits and Approvals 2-15

CHAPTER 3 – ENVIRONMENTAL ANALYSIS 3-1

3.1. Project Information 3-1
3.2. Environmental Factors Potentially Affected 3-3
3.3. Environmental Determination 3-3
3.4. Evaluation of Environmental Impacts and Initial Study Checklist 3-4

TABLES

2.1 Construction Activities Associated with the Project 2-13
2.2 Agency-Required Approvals and Permits 2-17
3.4.3-1 Unmitigated Average Daily Construction Emissions 3-17
3.4.3-2 Construction Risk Impacts at Nearest Sensitive Receptor – New PP and New Pipelines 3-21
3.4.3-3 Construction Risk Impacts at Nearest Sensitive Receptor – Existing PP and Existing Pipeline Abandonments 3-21
3.4.4-1 Sensitive Species Known to Occur in the Project Vicinity 3-28
3.4.4-2 Federal Endangered and Threatened Species that may Occur in Project Area .. 3-29
3.4.8-1 Estimated GHG Emissions from Construction 3-58
3.4.13-1 Summary of City Construction Noise Standards 3-89
3.4.13-2 Summary of City Operational Noise Standards 3-89
3.4.13-3 Construction Equipment 50-foot Noise Emission Levels 3-92

3.4.13-4 Calculated Construction Noise Levels at the PP Sites (Long-term Construction Noise Thresholds) 3-101
3.4.13-5 Calculated Construction Noise Levels for Pipeline Construction and Abandonment (Short-term Construction Noise Thresholds) 3-102
3.4.13-6 Calculated Operational Noise Levels at Nearest Noise Receptor 3-105
3.4.13-7 Vibration Levels for Construction Equipment at Various Distances 3-107
3.4.17-1 Project One-Way Trip Generation Estimates 3-113
3.4.17-2 Existing Plus Project Intersection Operations 3-121
3.4.17-3 Construction-Year Plus Project Peak Hour Intersection Levels of Service 3-123

FIGURES

1-1 East Bay Municipal Utility District Service Area 1-2
1-2 Project Vicinity Map 1-3
2-1 Project Location Map 2-2
2-2 Aerial View of Existing PP at 8445 Ney Avenue in Oakland 2-3
2-3 Conceptual Site Plan for New Fontaine PP Site 2-4
2-4 Example Security Chain Link Fence 2-5
2-5 Proposed Landscaping Plan 2-6
2-6 New Pipeline Location 2-7
2-7 Existing Pipeline Abandonment 2-8
2-8 Site Plan for Existing Fontaine PP Site 2-9
2-9 Pipeline Construction Activities 2-12
3.4.1-1 New PP Site Architecture and Landscaping 3-9
3.4.7-1 New PP Site and New Pipelines 3-47
3.4.7-2 Existing PP and Existing Pipeline Abandonment Disconnection Sites 3-49
3.4.17-1 Worker and Truck Trip Distribution for New PP and New Pipeline Alignment Construction 3-115
3.4.17-2 Worker and Truck Trip Distribution for Existing PP Construction and Existing Pipeline Abandonments 3-116
3.4.17-3 Truck Routing Plan for New PP Construction and New Pipeline Alignment 3-117
3.4.17-4 Truck Routing Plan for Existing PP Demolition and Existing Pipeline Abandonment 3-118
3.4.17-5 Existing Peak Hour Intersection Volumes, Lane Configurations and Traffic Controls 3-122
3.4.17-6 Construction-Year Peak Hour Intersection Volumes, Lane Configurations and Traffic Controls 3-124

APPENDICES

A Mitigation Monitoring and Reporting Program
B EBMUD Practices and Procedures Monitoring and Reporting Plan

CHAPTER 1
SUMMARY

East Bay Municipal Utility District (EBMUD) provides water service to 20 incorporated cities and 15 unincorporated areas in Alameda and Contra Costa Counties (Figure 1-1). The water distribution system is comprised of six water treatment plants, over 4,200 miles of potable (treated water) distribution and transmission pipes, 167 potable water reservoirs, 131 pumping plants, and numerous accessory structures that altogether provide water service to EBMUD's approximately 1.4 million customers.

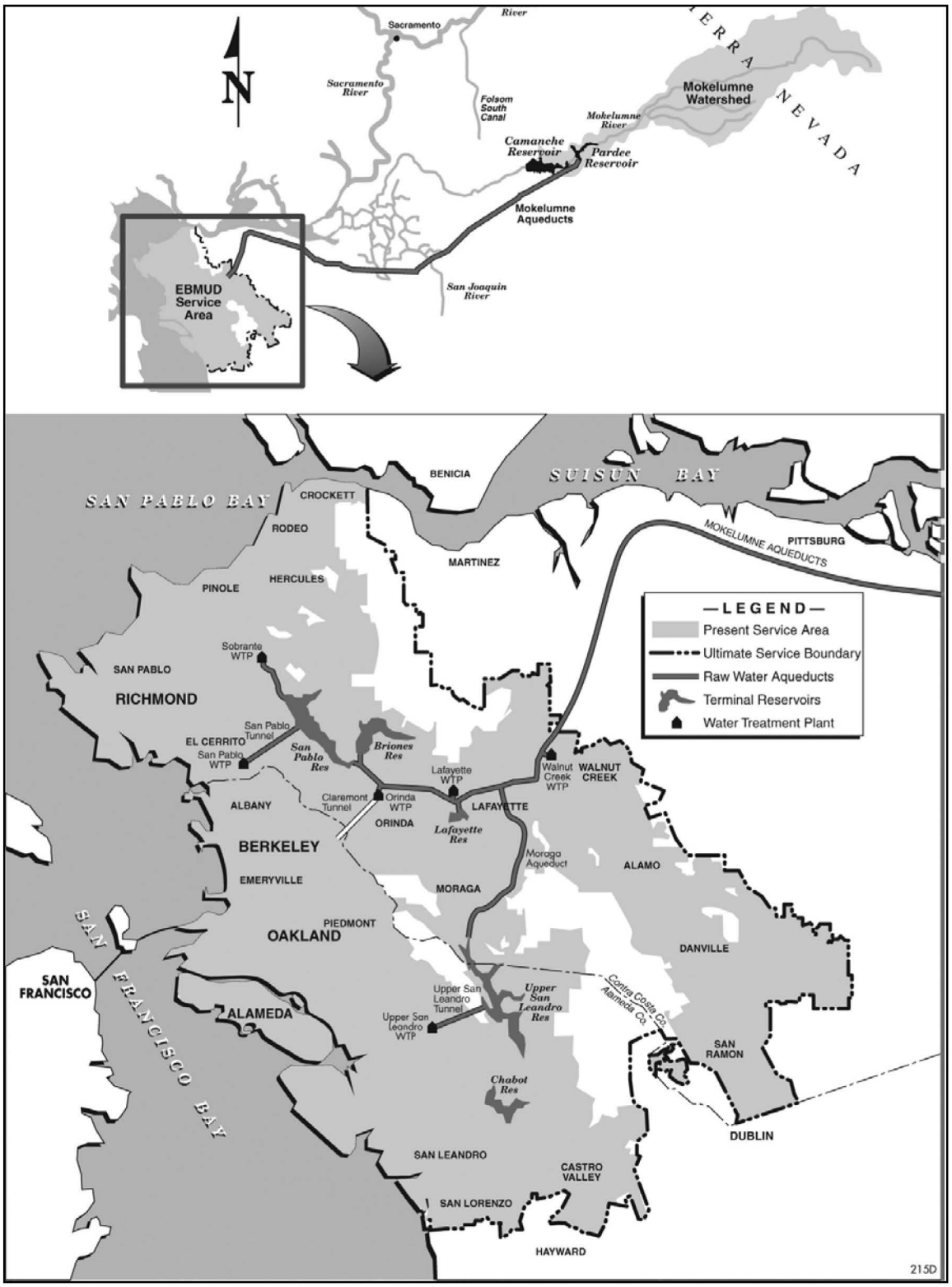
1.1. Project Objective

The Fontaine Pumping Plant (PP) Replacement Project (Project) would construct a new PP and rate control station (RCS) at a new site to replace the existing Fontaine PP, construct new pipelines, abandon existing pipelines, and demolish the existing Fontaine PP. The existing PP was identified as a high priority for replacement in the West of Hills Master Plan and Infrastructure Rehabilitation Master Plan For Distribution Pumping Plants 2012 Update (update to the Infrastructure Rehabilitation Master Plan For Distribution Pumping Plants, 2008). The Project would replace aging infrastructure and improve water service reliability by relocating the existing PP outside of an active fault and landslide area and constructing a new RCS which can deliver water to other parts of the distribution system during planned and unplanned facility and pipeline outages.

The existing PP, constructed in 1963 and located in the City of Oakland (City), has a capacity of 20 million gallons per day (mgd) and is the primary supply to customers when one of EBMUD's water treatment plants is out of service. The existing PP is located in a deep-seated landslide zone adjacent to the main trace of the Hayward Fault and is at the end of its useful life with outdated electrical equipment and mechanical deficiencies that limit the capacity during high demand periods.

The Project includes construction of a new 20 mgd PP and RCS at 9601 MacArthur Boulevard and approximately 4,750 feet of new 30-inch pipelines to connect the new PP to the existing water distribution system. Upon construction completion and successful testing of the new PP and pipelines, the existing PP building would be demolished, and approximately 2,100 feet of existing buried pipelines would be abandoned in place.

Figure 1-2 shows a Project vicinity map, including the existing PP site, the new PP site, and the new pipeline alignments.



East Bay Municipal Utility District Service Area

Figure 1-1



Project Vicinity Map
Figure 1-2

1.2. Purpose of Mitigated Negative Declaration

This Mitigated Negative Declaration (MND) assesses the potential environmental impacts related to the Project proposed by EBMUD and has been prepared in accordance with the California Environmental Quality Act (CEQA) statutes and guidelines in which EBMUD is the lead agency. EBMUD has incorporated mitigations into the Project to mitigate the potentially significant impacts identified in the Initial Study such that no significant impacts would occur. These mitigations are summarized in the attached Mitigation Monitoring and Reporting Program (MMRP), see Appendix A

1.3. Summary of Environmental Considerations

Based on the results of the Initial Study, project-related construction work could potentially generate environmental impacts to aesthetics and transportation. Mitigation measures incorporated into the Project that would reduce impacts to Less than Significant levels are discussed in Chapter 3 of this MND. Long-term PP operation would not generate any significant impacts. EBMUD determined that an MND is the appropriate level of CEQA review for this Project. The mitigations that have been incorporated in the Project are summarized in the attached MMRP, see Appendix A.

1.4. List of Referenced Studies by Environmental Topic

A list of studies referenced in this MND is provided below.

Aesthetics – Panorama, September 2021. Fontaine Pumping Plant Replacement Project Aesthetics Conceptual Design Report.

Air Quality – Panorama, September 2021. Fontaine Pumping Plant Replacement Project Air Quality Technical Report.

Biological Resources – EBMUD, March 2019. Fontaine Pumping Plant Replacement Project Biological Resources Assessment. Prepared by EBMUD Fisheries and Wildlife Service Division.

Greenhouse Gas Emissions – Panorama, September 2021. Fontaine Pumping Plant Replacement Project Greenhouse Gas Emissions Technical Report.

Hazards and Hazardous Materials – Panorama, September 2021. Fontaine Pumping Plant Replacement Project Hazards and Hazardous Materials Technical Report.

Noise – Panorama, September 2021. Fontaine Pumping Plant Replacement Project Noise Technical Report.

Transportation – Panorama, September 2021. Fontaine Pumping Plant Replacement Project Transportation and Traffic Technical Report.

1.5. Circulation of the MND

In accordance with CEQA, a good faith effort has been made by EBMUD during the preparation of the Initial Study and MND to contact affected agencies, organizations and persons who may have an interest in the Project. In reviewing the Initial Study and MND, affected persons and public agencies should focus on the sufficiency of the document in identifying and analyzing the possible impacts on the environment and the ways in which the significant effects of the Project were avoided or mitigated.

Comments on the Initial Study and MND may be made in writing before the end of the comment period. A 30-day review and comment period has been established in accordance with §15205(d) of the CEQA Guidelines. Following the close of the public comment period, which ends on November 15, 2021 at 4:30 p.m., EBMUD will consider this Initial Study and MND and comments thereto in determining whether to approve the proposed Project.

The Initial Study and MND are available online on EBMUD's webpage (https://www.ebmud.com/fontainepp). Written comments should be sent to EBMUD's street address or email address as follows:

East Bay Municipal Utility District
Daniel Jones, Associate Civil Engineer
375 11th Street, M/S 701
Oakland, CA 94607

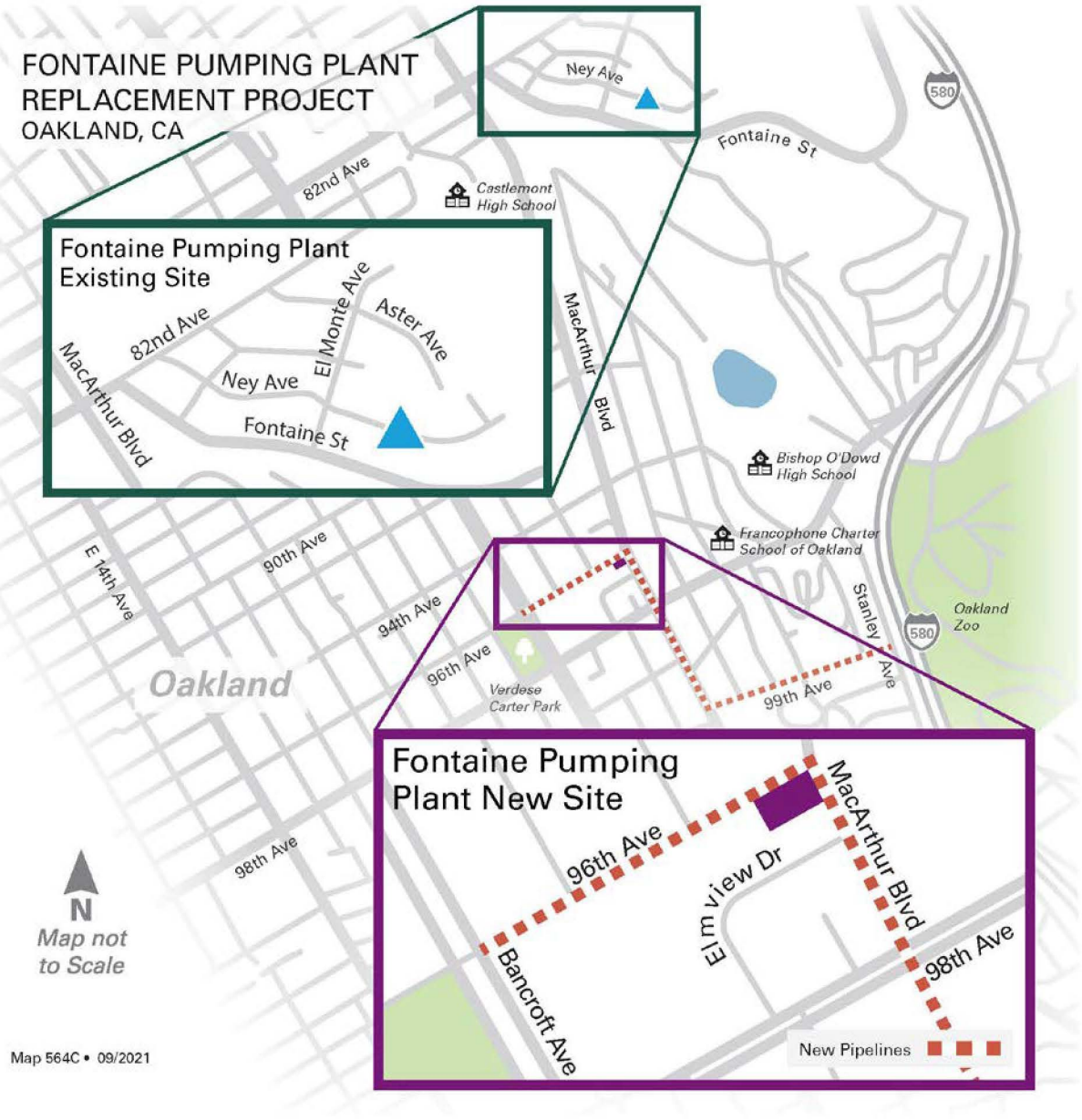
or

FontainePP@ebmud.com

CHAPTER 2
PROJECT DESCRIPTION

2.1. Overview

EBMUD's existing Fontaine PP, located at 8445 Ney Avenue in Oakland, is the primary supply to customers with elevations over 100 feet in portions of the cities of Castro Valley, Hayward, Oakland, and San Leandro when the Upper San Leandro (USL) Water Treatment Plant (WTP) is out of service. The existing PP is at the end of its useful life, has major electrical and mechanical deficiencies, and is located in a deep-seated landslide zone adjacent to the main trace of the Hayward Fault. Therefore, the Project includes constructing a new PP and RCS approximately three quarters of a mile away at 9601 MacArthur Boulevard in Oakland to replace the existing PP as shown in Figure 2-1. Approximately 4,750 feet of new 30-inch water pipelines would connect the new PP to EBMUD's existing water distribution system. Upon construction completion and successful testing of the new PP, RCS and pipelines, the existing PP building would be demolished and existing buried pipelines would be abandoned in place.

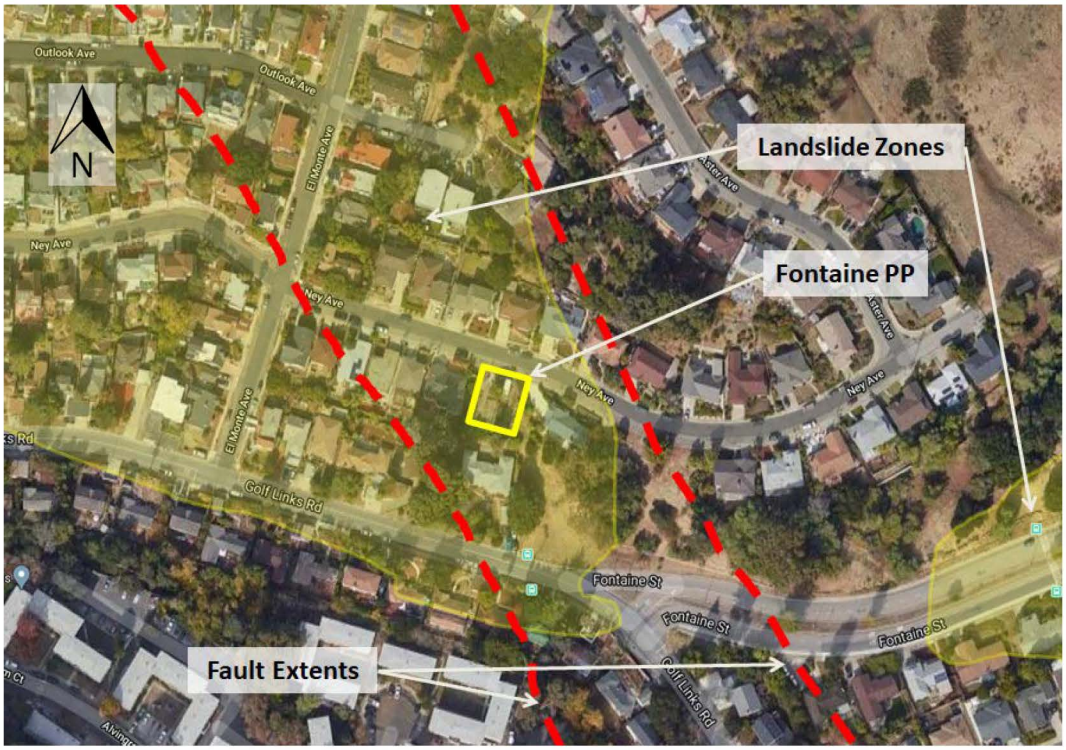


Project Location Map
Figure 2-1

2.2. Condition of the Existing PP

EBMUD's existing Fontaine PP is a 20 mgd PP (see Figure 2-2 Aerial View) constructed in 1963 containing three pump units. EBMUD recommends relocation of the existing PP due to deficiencies and because the PP is located on an active landslide near to the main trace of the Hayward Fault. An assessment of the PP was conducted in June 2012 and noted numerous deficiencies. The deficiencies of the existing PP include:

- The PP is over 57 years old and near the end of its useful life.
- The associated suction and discharge pipelines are susceptible to damage by fault rupture and/or landslide.
- The PP capacity is limited to approximately 15 mgd during high demand periods due to inefficient pumps.
- The PP contains obsolete electrical equipment, and no spare parts are available.
- The ventilation system is outdated, which results in high humidity in the building and contributes to corrosion found on welded steel piping.

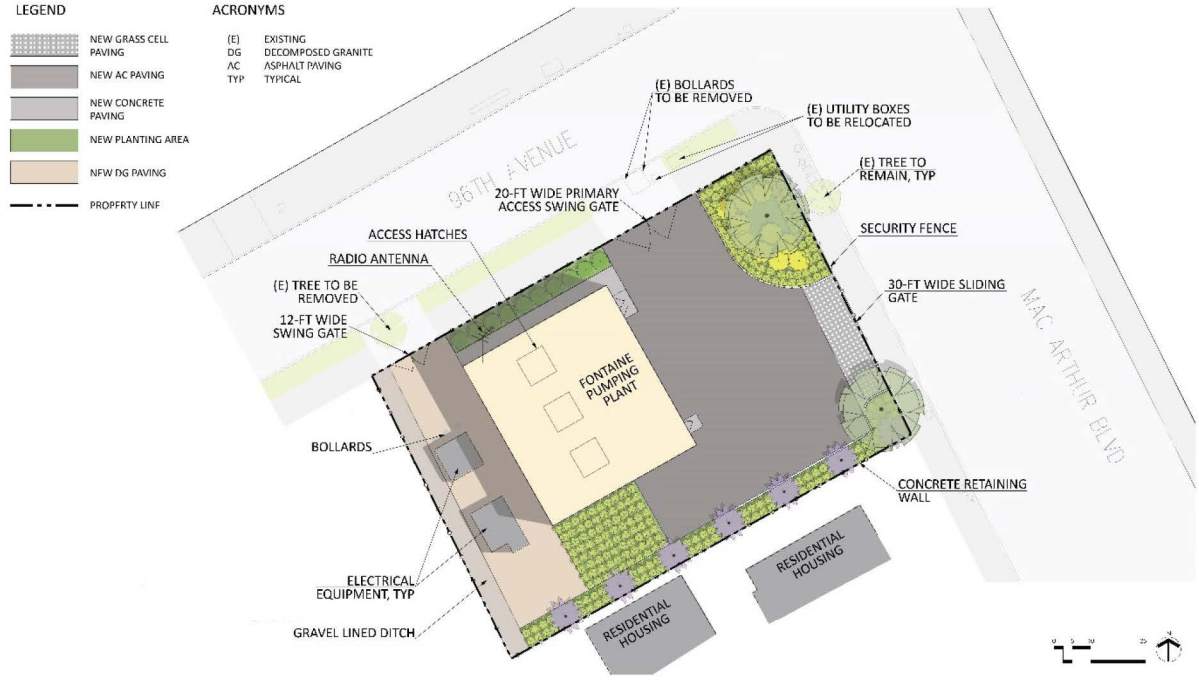


Aerial View of Existing PP at 8445 Ney Avenue in Oakland
Figure 2-2

2.3. Proposed Project

New PP

The Project includes the replacement of the existing PP with a new PP and RCS on an EBMUD owned site located at the southwest corner of the intersection of MacArthur Boulevard and 96th Avenue in Oakland, approximately 0.75 miles away from the Hayward Fault and on a site with no known landslides. The new PP would include three 10 mgd vertical turbine pumps with a total capacity of approximately 20 mgd (accounting for one standby pump unit). The Project also includes a 10 mgd RCS[1], to be located in the new PP building, which would increase overall water system operational flexibility and reliability by delivering water from the USL WTP to other parts of the distribution system during planned and unplanned facility and pipeline outages. Figure 2-3 shows a conceptual site plan depicting major Project components at the new PP site and further described below.



Conceptual Site Plan for New Fontaine PP Site
Figure 2-3

The new PP building would be oriented such that the front of the building faces MacArthur Boulevard. The new PP building would be approximately 45-feet by 50-feet with a footprint of

[1] A Rate Control Station is a remotely operated valve that can be opened or closed to allow flow from a higher-pressure pipeline to a lower pressure pipeline.

approximately 2,250 square feet. The architecture of the new PP would be a residential design concept that utilizes building materials, colors, and features that blend the facility into the predominantly mixed use residential and commercial neighborhood (see Figure 3.4.1-1). The building features beige stucco cladding with contrasting trim overcast-in-place concrete walls, covered by a steel-framed gable roof with brown asphalt shingles. The roof would be gable form, sloped at 3:12, with the ridgeline (i.e., high point) height approximately 24-feet from ground elevation. Roofing material is built-up, asphalt shingles over an exposed steel beam structure. The PP building material would be poured-in-place reinforced concrete construction with form liners. To maintain a high level of security and noise control, there are no windows in the walls or doors of the PP building. Lockable access hatches are required in the roof above each pump unit to facilitate the installation and removal of pump units vertically through the roof for future maintenance. Power for the PP would be supplied by Pacific Gas & Electric (PG&E) and would require the installation of an outdoor transformer and switchgear electrical equipment. EBMUD would remotely operate and monitor the PP, requiring installation of an antenna attached to the building's roof approximately 25-feet in height from ground elevation.

The north, west, and south sides of the building would be partially buried to retain the gently sloping ground from west to east and around the building. The south and west sides of the site would have a retaining wall approximately three feet tall. An eight-foot-high, black-vinyl-coated security chain link fence and gates would enclose the site and would be installed immediately adjacent to the existing redwood fence to the south and west side of the property. An example of the eight-foot-high, black-vinyl-coated security chain link fence installed at an EBMUD reservoir site is shown below in Figure 2-4. The site would include paved areas for access and parking for operation and maintenance of the PP, including space for an emergency generator or emergency pump.



Example Security Chain Link Fence

Figure 2-4

The site would include a primary access gate off of 96th Avenue for regular operation and maintenance. To accommodate the primary access gate installation, two existing, above-ground AT&T telecommunications boxes would be relocated along the sidewalk on 96th Avenue to avoid conflict with the primary gate. A secondary access gate off of MacArthur Boulevard would allow for delivery of equipment such as portable pumps or generators in the event of a planned or unplanned outage of the new PP. A third dedicated PG&E access gate along 96th Avenue is required to allow PG&E maintenance of the transformer. One existing tree within the City's public right-of-way would need to be removed for the construction of the PG&E access gate.

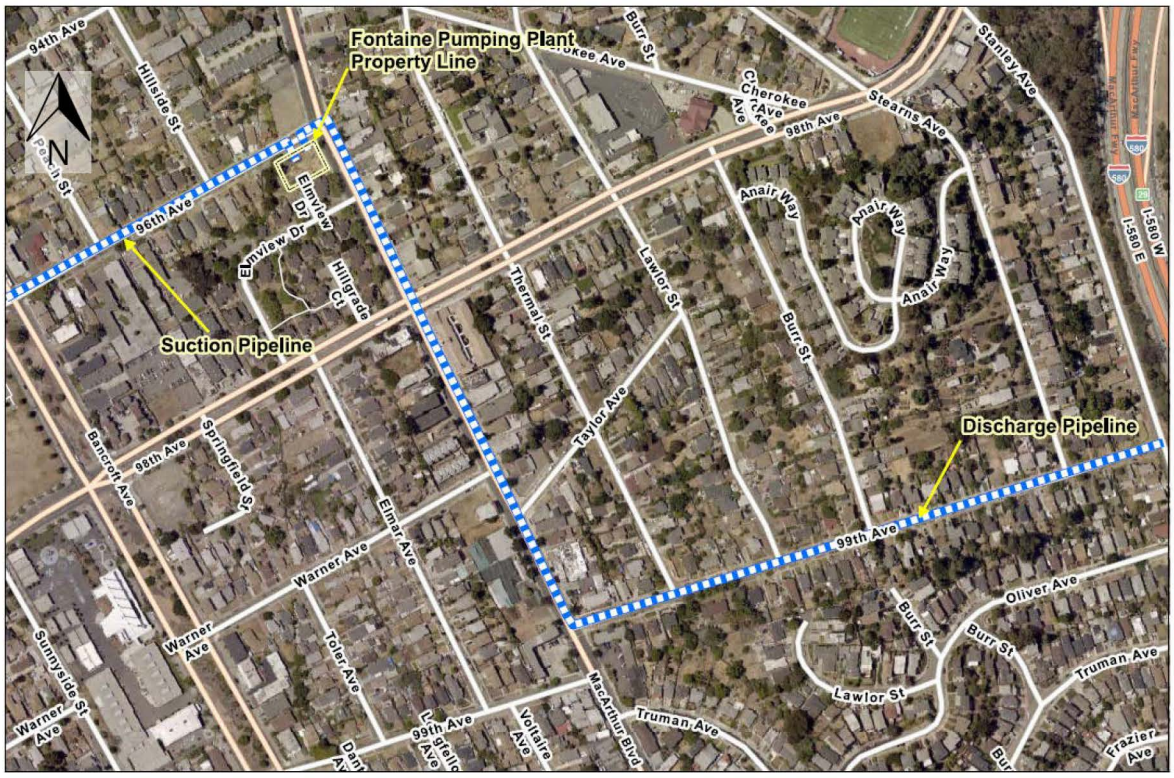
EBMUD would implement the design elements outlined in the Fontaine Pumping Plant Replacement Project Aesthetics Conceptual Design Report, September 2021. The landscape design would utilize trees, shrubs, and groundcover to improve the visual appearance of the property using drought-tolerant plants. Plantings were selected that have fast growth rates with low water use, while ensuring visibility into the property from the perimeter for site security. The site is designed to retain a portion of stormwater runoff through permeable cell pavers and landscape features including maximizing landscaped areas. Any drainage leaving the site would be directed to a gravel v-ditch along the west side of the property and discharged to 96th Avenue for capture in existing storm drain inlets. The proposed landscaping is shown on Figure 2-5.



Proposed Landscaping Plan
Figure 2-5

New Pipelines

Approximately 1,100 feet of 30-inch suction pipeline[2] in 96th Avenue would connect the new PP to EBMUD's existing 48-inch pipeline in Bancroft Avenue. The suction pipeline would turn from 96th Avenue into the new PP site and connect to the suction header of the PP. Approximately 3,650 feet of 30-inch discharge pipeline[3] would connect the new PP to EBMUD's existing 30-inch pipeline in Stanley Avenue at the intersection of 99th Avenue and Stanley Avenue. The discharge pipeline would exit the new PP site on 96th Avenue heading northeast towards MacArthur Boulevard and turn southeast along MacArthur Boulevard until reaching 99th Avenue where it would turn northwest and follow 99th Avenue until reaching Stanley Avenue. Figure 2-6 shows the location of both the new suction and discharge pipelines.



New Pipeline Location
Figure 2-6

Existing PP Demolition

The existing 20 mgd PP located at 8445 Ney Avenue would be demolished. All steel, roofing, stairs, concrete vaults, concrete buildings, concrete foundations, and electrical and mechanical equipment would be removed from the site. Concrete from the demolition of the existing PP would be recycled and reused on site to the extent feasible. The existing underground suction and discharge pipelines at the existing site, totaling approximately 2,100 feet, would be disconnected

[2] A suction pipeline is the pipeline that supplies water to the PP from a water source such as a storage tank.
[3] A discharge pipeline is the pipeline that supplies water from the PP to a storage tank and/or customers.

from service and abandoned by cutting, capping and filling the pipelines with cellular concrete from three disconnection points, as shown in Figure 2-7.



Existing Pipeline Abandonment
Figure 2-7

Upon completion of all demolition work, new retaining walls would be constructed as shown in Figure 2-8 for soil stabilization. Pending a structural evaluation during detailed design, portions of the existing retaining walls that are part of the existing building may be replaced with new retaining walls or remain. Retaining walls would range in height from approximately five feet tall near the East property line up to approximately twenty feet tall from the ground surface elevation where the building's foundation is located. Fall protection would be installed along the top of the retaining walls and would include minimum 42-inch tall guardrails. After all construction at the site is complete, the site would by hydroseeded. The site would remain

EBMUD property to provide maintenance access to an existing 48-inch diameter pipeline on the site that would remain operational. The existing 48-inch diameter pipeline is a major transmission pipeline in the EBMUD distribution system and is not hydraulically affected by relocating the PP.



Site Plan for Existing Fontaine PP Site
Figure 2-8

2.4. Environmental Setting

The existing PP site is approximately 0.2 acres and surrounded by single family homes. The site is located in a deep-seated landslide zone and is adjacent to the main trace of the Hayward Fault. The majority of the lot is hardscape consisting of pavement, stairs and the building that houses the pump units. The remainder of the site consists of scattered small patches of annual grasses, German ivy, and a few ornamental shrubs and trees; no native trees or shrubs are on the site. One tree located on the site would be removed to allow equipment access for demolition of the building. A few coast live oak trees are located on the lots adjacent to the site.

The new PP site is a vacant EBMUD-owned parcel surrounded by a mix of single-family homes, multiple family complexes, and commercial buildings. The site is a fenced, gently sloping vacant lot that is covered with ruderal vegetation interspersed with plastic sheeting. There are no trees on the site but there are a number of ornamental trees and shrubs on the adjacent residential parcels and along the adjacent City sidewalk right-of-way.

2.5. Construction Activities

2.5.1. Construction Access – Construction access routes to both the existing and new PP would be from Interstate 580 (I-580), Interstate-880 (I-880), and/or City designated truck routes. Truck traffic for off-hauling, large equipment deliveries, and material deliveries would access the Project sites via the most direct route using the City designated truck routes between the Project sites and I-880. While large truck access to and from the Project sites would be limited to I-880 due to California Vehicle Code Section 35655.5 which prohibits trucks over 4.5 tons from traveling on I-580 between Grand Avenue and the City of San Leandro border, construction workers would likely access the Project sites via I-580.

2.5.2. Construction Equipment – Equipment anticipated to be used during the Project construction and demolition include backhoes, excavators, hoe rams, jack hammers, bulldozers, front-end loaders, forklifts, flatbed delivery trucks, asphalt pavers, vibratory compactors, rollers, street sweeper, water trucks, shotcrete and concrete trucks, high lift crane, various passenger vehicles, electric portable pumps, and truck-mounted equipment for welding of pipelines. Construction activity, duration, and resulting vehicle trips are listed in Table 2.1.

2.5.3. Staging Area – During the existing PP demolition phase, equipment and materials would be staged both onsite and on the adjacent street. During the new PP construction phase, equipment and materials would be staged onsite and at a nearby offsite location chosen by the contractor.

A minimum construction easement width of 25 feet would be needed on roadways adjacent to the pipeline alignment to accommodate pipeline storage and to allow trucks and equipment access along the trench. In some areas where the pipelines would need to be installed at greater depth to avoid other utilities, a wider trench and construction easement may be required. During pipeline construction, equipment and materials would be staged on the streets.

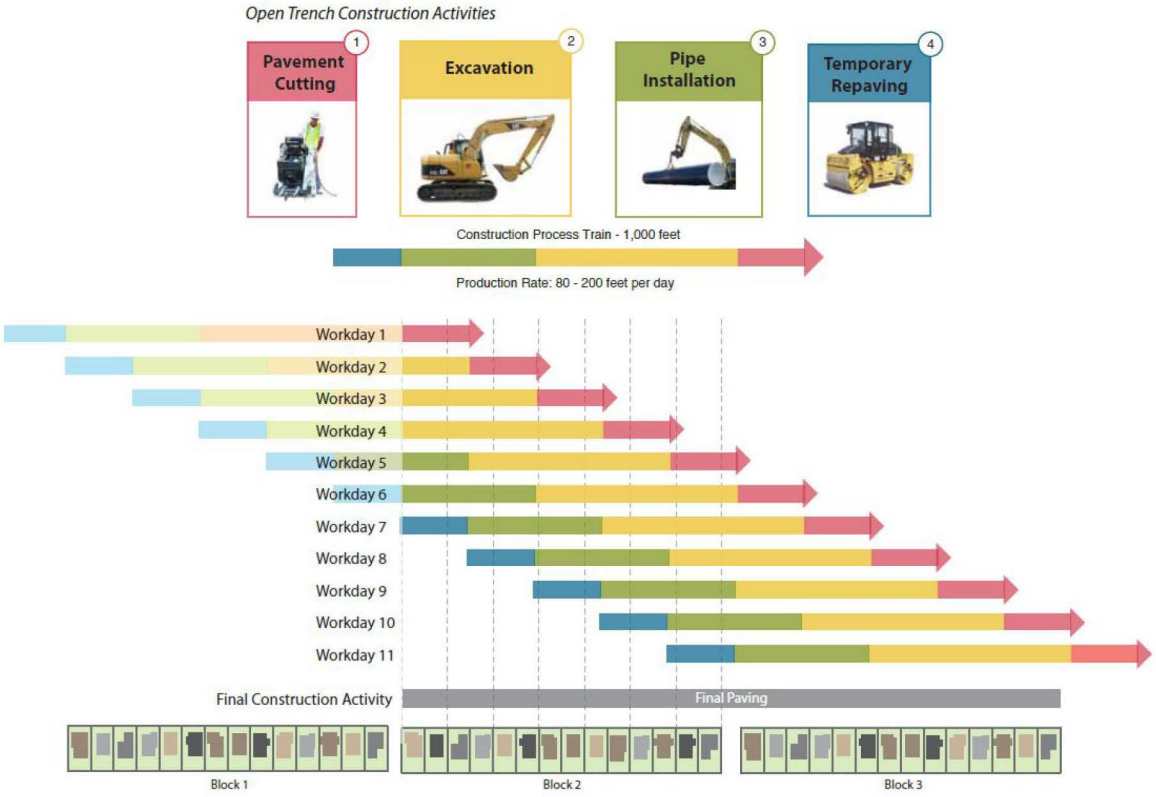
2.5.4. Construction Schedule – Allowable construction hours in the City occur between 7:00 a.m. and 7:00 p.m., Monday through Friday, with an exception for emergencies. A typical eight-hour workday between Monday and Friday serves as the basis for estimating construction activity durations in this MND.

2.5.5. New PP Construction – The construction activities associated with the new PP are described as follows. Existing telecommunications boxes would be relocated and existing

ruderal vegetation and one tree on 96th Avenue would be removed, followed by construction of new driveways, excavation and sitework to re-contour the site to the final grade, providing a flat surface for the PP building. As the site is graded, the concrete retaining walls would be constructed along the south and west sides of the property. Approximately 500 cubic yards of soil would be excavated and approximately 120 cubic yards of soil would be stockpiled on site to be reused for site grading. The remaining 380 cubic yards of soil would be off hauled for disposal. After the site is graded, concrete foundations and walls would be poured in place and building construction would occur, which includes the concrete foundation, concrete walls, roof, and outdoor transformer and switchgear pads. Next, pumps, motors, electrical equipment, outdoor antenna, and site pipelines would be installed. Portions of the approximately 4,750 feet of suction and discharge 30-inch pipeline construction may occur concurrently with the PP construction. After construction of the new pipelines and new PP is completed, the new PP equipment would be tested. The final activities at the site would include final site grading, installation of permanent fencing, landscaping, and site paving.

2.5.6. Pipeline Installation Construction – The construction activities associated with the 30-inch open-cut pipeline construction are described as follows. Prior to construction, underground utilities would be located and marked. The pavement would be saw-cut, the trench would be excavated and shored, and trench soils would be removed and off hauled for disposal. The trench would be a minimum of about 48 inches wide and about 72 inches in depth. Sections of the pipeline would be laid out along the alignment, requiring an approximate 25-foot-wide construction corridor. Up to two lanes on MacArthur Boulevard would be closed and full street closures would be required on 96th Avenue and 99th Avenue. The pipeline would then be lowered into the trench and the sections welded together. In two locations (i.e., 96th Avenue and Bancroft Avenue and 99th Avenue and Stanley Avenue), the pipeline would be connected to the existing distribution system. The trench would be backfilled with imported material for bedding the new pipeline and backfilling the trench and sections of the pipeline would be pressure tested and disinfected via chlorination before repaving. Repaving occurs in two steps, an initial temporary patch followed by permanent final paving.

Figure 2-9 shows the typical progression of open trench construction.



Pipeline Construction Activities
Figure 2-9

2.5.7. Existing PP Demolition and Pipeline Abandonment – The construction activities associated with the existing PP demolition and pipeline abandonment are described as follows. The internal electrical and mechanical equipment, pumps, motors, and associated piping would be removed from the building and off hauled for recycling or disposal. The building roof, walls and foundation would be demolished, along with site paving, electrical pads, stairs and retaining walls, and prepared for reuse on site or off hauled for disposal. The site would then be prepared for construction of new retaining walls with fall protection. All underground pipelines would be cut, capped, and filled with cellular concrete. The final activities at the site would include hydroseeding.

Table 2.1 Construction Activities Associated with the Project*

Construction Phase	Approx. Duration (weeks)	Major Equipment	Haul/ Material Trucks (per day)	Max Hourly One-Way Trips	
				Worker Vehicles	Trucks
Pipeline Installation					
Mobilization	1	Haul Trucks, Backhoe	2	3	1
Pipeline Connections	4	Excavator, Generator Sets, Front-End Loader, Backhoe, Dewatering Pumps	1	11	1
Suction Pipeline	3	Excavator, Front-End Loader, Backhoe, Crane, Haul/Material Trucks, Soil Compactor	15	16	4
Discharge Pipeline	9	Excavator, Front-End Loader, Backhoe, Crane, Haul/Material trucks, Soil Compactor	15	16	4
Flushing, pressure testing and chlorination	4	N/A	0	6	0
Paving	3	Compactor, Asphalt Paver, Roller, Paving Saw	1	6	1
Demobilization	1	Street Sweeper	0	3	0
New PP Construction					
Mobilization	1	Haul Trucks, Backhoe	2	3	1
Site Prep & New Driveways	1	Backhoe, Concrete Saw, Concrete Mixer Truck, Chain Saw, Haul Trucks	1	5	1
Excavation & Retaining Wall	4	Excavator, Grader, Backhoe, Drill Rig, Concrete Mixer Trucks, Haul Trucks	32	5	8
PP Construction	22	Material Trucks, Concrete Delivery Trucks, Concrete Pumper Truck	7	10	2
PP Equipment Installation	16	Crane, Forklift, Boom Truck, Material Trucks	2	8	1
PP Equipment Testing	10	N/A	0	6	0
Backfill	1	Excavator, Backhoe, Loader, Compactor, Haul Trucks, Scraper	12	5	3
Landscaping/Civil Site Work	2	Haul/Material Trucks, Backhoe, Soil Compactor, Asphalt Paver, Compactor (Roller)	2	4	1
Demobilization	1	Street Sweeper	0	3	0
Existing PP Demolition & Pipeline Abandonment					
Mobilization	1	Haul Trucks, Backhoe	2	3	1
Remove/Demo Equipment & Tree	1	Crane, Excavator, Chain Saw, Haul Trucks	3	8	1
Demo Building/Foundation	2	Excavator, Backhoe, Hoe Ram, Concrete Saw	10	7	3

Construction Phase	Approx. Duration (weeks)	Major Equipment	Haul/ Material Trucks (per day)	Max Hourly One-Way Trips	
				Worker Vehicles	Trucks
Cut/Fill/Cap Underground Piping	1	Backhoe, Haul/Material Trucks, Soil Compactor, Concrete Pump, Concrete Delivery Trucks, Asphalt Paver, Generator	2	8	1
Construct Retaining Wall	2	Material Trucks, Concrete Delivery Trucks, Concrete Pumper Truck	3	10	1
Backfill	1	Backhoe, Compactor, Haul Trucks	13	5	4
Site Restoration	1	Compactor, Roller	0	6	0
Demobilization	1	Street Sweeper	0	3	0
Total Duration (weeks) - Pipeline Work Completed Prior to starting PP construction	**93**				
Total Duration (weeks) - Pipeline Work concurrent with PP construction	**68**				
MAXIMUM ONE-WAY TRIPS PER HOUR (Pipeline Work Completed Prior) =				**16**	**8**
				Vehicles	**Trucks**
MAXIMUM ONE-WAY TRIPS PER HOUR (Concurrent Pipeline Work) =				**26**	**12**
				Vehicles	**Trucks**

Notes
1. *Conservatively assumes pipeline is installed at rate of 80 linear feet/day, but actual rate could be up to 200 feet/day.*
2. *Active construction time does not include down-time, submittal review, material procurement, or fabrication inspection and approval.*
3. *Work schedule: typical eight-hour workday (allowable construction hours, Monday-Friday between 7:00 a.m. and 7:00 p.m.)*
4. *Maximum hourly one-way truck trips are estimated by averaging the number of trucks going to and leaving the job site on a daily basis over an eight-hour period.*
5. *Maximum hourly one-way vehicle trips are estimated by assuming all workers are arriving and leaving the job site in a one-hour period expected to occur during a.m. and p.m. peak commute hours.*
6. *Haul trucks average twenty cubic yards (CY) per load at the new PP site and nine CY per load at the existing PP; concrete trucks average nine CY per load regardless of location.*
7. *Assume that all excess soil excavation would be off hauled.*
8. *One worker per vehicle.*

2.6. Operations and Maintenance

Once constructed, both the new PP and new pipelines would operate in the same way as existing facilities. The new PP would continue to be operated and monitored remotely. The PP site would be routinely inspected approximately twice per month by EBMUD's operations and maintenance staff. Long-term site maintenance would continue and would involve management of vegetation on site including keeping the site clean and free of debris and trimming shrubbery and trees to maintain clear views into the site for both fire prevention and public safety. EBMUD maintains its properties to comply with city and county fire prevention vegetation management standards as part of its on-going site maintenance program.

2.7. Project Schedule

The EBMUD Board of Directors is expected to consider adoption and approval of this MND at a regularly scheduled meeting in May 2022. The design would take approximately 18 to 24 months, beginning in 2026, and the construction of the new PP and demolition of the existing PP would take approximately two years, beginning in 2028.

2.8. EBMUD Practices and Procedures

EBMUD has incorporated a number of standard construction specifications, Engineering Standard Practices, and Procedures into the Project. These standard practices and procedures 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 practices and procedures, which are applicable to all EBMUD projects and reflect generally applicable EBMUD standard operating procedures, are described in more detail below.

EBMUD maintains several Standard Construction Specification documents specifically related to environmental conditions, including:

- 01 14 11, Work Restrictions – This section describes special requirements and construction constraints (including work hours) that may affect Project construction.

- 01 35 24, Project Safety Requirements – This section includes provisions for the safety of the public and construction workers regarding hazards and hazardous materials.

- 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.

- 01 55 26, Traffic Regulation – This section includes provisions for the regulation of traffic during construction and compliance with applicable traffic regulations requirements.

- 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, and includes provisions for hazardous materials controls.

- 02 83 13, Lead Hazard Control Activities – This section includes requirements for the handling, removal, and proper disposal of lead-containing materials, required as a result of construction activities, and includes provisions for hazardous materials controls.

EBMUD Procedure 600, Public Outreach and Community Relations, 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 (e.g., noise, traffic) including geographical extent of activity and estimated duration of the activity. This procedure also provides mechanisms for customers and the public to get concerns and questions addressed.

EBMUD Procedure 711, Hazardous Waste Removal, defines hazardous waste and establishes responsibilities for removal of hazardous wastes from EBMUD facilities. This procedure 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's Engineering Standard Practice 512.1, Water Main and Services Design Criteria, and Engineering Standard Practice 550.1, Seismic Design Requirements, dictate basic requirements for water pipelines and design standards for pipelines and structures to withstand seismic hazards.

EBMUD's Engineering Standard Practice 514, Identifying Buried Conflicts, provides guidelines and 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, such as active and abandoned utilities.

EBMUD's Pumping Plant Design Guide (2017) establishes minimum requirements to be followed in the design of EBMUD drinking water PPs. This guide details design criteria and conditions for PPs and outlines applicable codes and design standards.

Appendix B contains the EBMUD Practices and Procedures Monitoring and Reporting Plan table. This table and discussion in the Initial Study detail these practices and procedures and describe their relationship to Project impacts.

2.9. Permits and Approvals

Table 2.2 provides a summary of the approvals and permits EBMUD would be required to obtain prior to construction.

Table 2.2 Agency-Required Approvals and Permits

Agency/Stakeholder	Type of Jurisdiction	Type of Approval
City of Oakland	Local	Encroachment permit for construction within city streets and sidewalk Approval for use of storm drains and/or sewer lines for dewatering activities.
California Air Resources Board (CARB) and Bay Area Air Quality Management District (BAAQMD)	State	Permit for portable equipment registration and approval for emissions generated from construction of the proposed project.
San Francisco Bay Regional Water Quality Control Board (SFBRWQCB)	State and Federal	National Pollutant Discharge Elimination System (NPDES) Construction General Permit and Waste Discharge Requirements for dewatering.

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 (such as tree 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.

REFERENCES

Panorama, Fontaine Pumping Plant Replacement Project Aesthetics Conceptual Design Report, September 2021.

EBMUD, Standard Construction Specification 01 14 00, Work Restrictions, October 28, 2019.

EBMUD, Standard Construction Specification 01 35 24, Project Safety Requirements, October 12, 2020.

EBMUD, Standard Construction Specification, Section 01 35 44, Environmental Requirements, August 31, 2018.

EBMUD, Standard Construction Specification 01 55 26, Traffic Regulation, February 9, 2017.

EBMUD, Standard Construction Specification, Section 02 82 13, Asbestos Control Activities, May 7, 2014.

EBMUD, Standard Construction Specification, Section 02 83 13, Lead Hazard Control Activities, May 31, 2016.

EBMUD, Procedure 600, Public Outreach and Community Relations, December 3, 2018.

EBMUD, Procedure 711, Hazardous Waste Removal, January 3, 2019.

EBMUD's Engineering Standard Practice 514, Identifying Buried Conflicts, September 12, 2008.

EBMUD's Engineering Standard Practice 512.1, Water Main and Services Design Criteria, October 9, 2006.

EBMUD's Engineering Standard Practice 550.1, Seismic Design Requirements, February 20, 2018.

EBMUD. Pumping Plant Design Guide. December 2017.

CHAPTER 3
ENVIRONMENTAL ANALYSIS

3.1. Project Information

1.	Project Title:	Fontaine Pumping Plant Replacement Project
2.	Lead Agency Name and Address:	East Bay Municipal Utility District Water Distribution Planning Division – MS 701 375 11th Street Oakland, CA 94607
3.	Contact Person:	Daniel Jones, Associate Civil Engineer (510) 287-1618
4.	Project Location:	New PP and RCS to be located on EBMUD-owned property at 9601 MacArthur Boulevard, Oakland, CA. New pipelines installed in 96th Avenue from Bancroft Avenue to MacArthur Boulevard, in MacArthur Boulevard from 96th Avenue to 99th Avenue, and in 99th Avenue from MacArthur Boulevard to Stanley Avenue, Oakland, CA. Existing PP located at 8445 Ney Avenue, Oakland, CA. Existing pipeline abandonment disconnection sites in Aster Avenue at 82nd Avenue, in Ney Avenue at 8445 Ney Avenue, and in Golf Links Road at Fontaine Street, Oakland, CA.
5.	Project Sponsor's Name and Address:	East Bay Municipal Utility District Water Distribution Planning Division – MS 701 375 11th Street Oakland, CA 94607
6.	General Plan Designation:	Existing PP: City of Oakland – Detached Unit Type Residential New PP: City of Oakland – Urban Type Residential
7.	Zoning:	Existing PP: RD-1 (Detached Unit – 1) New PP: RU-1 (Urban – 4)
8.	Description of Project:	Please see Chapter 2 of the MND.
9.	Surrounding Land Uses and Setting:	All parcels surrounding the existing PP are residential. Parcels surrounding the new PP are residential-single family, residential-multifamily, and commercial.

10. Other Public Agencies Whose Approval is Required:	1. Regional Water Quality Control Board: Storm Water Pollution Prevention Permit 2. California Air Resources Board: registration of portable engines, air compressors and generators 3. Bay Area Air Quality Management District: Notification Form for Road Construction and Maintenance Operation 4. Encroachment permits: City of Oakland

3.2. Environmental Factors Potentially Affected

The environmental factors checked below could potentially be affected by this Project, but impacts would be mitigated to a less than significant level as indicated by the checklists on the following pages.

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

3.3. Environmental Determination

On the basis of this initial evaluation:

☐ I find that the proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that, although the proposed Project could have a significant effect on the environment, there will not be a significant effect in this case, because revisions in the Project have been made by or agreed to by the applicant. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed Project MAY have a "potentially significant impact" or "potentially significant unless mitigated" on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that, although the proposed Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier Environmental Impact Report pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier Environmental Impact Report, including revisions or mitigation measures that are imposed upon the proposed Project, nothing further is required.

Olujimi O. Yoloye, Director of Engineering and Construction

10/14/2021
Date

3.4. Evaluation of Environmental Impacts and Initial Study Checklist

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D) (2017 CEQA Guidelines). In this case, a brief discussion should identify the following:

    a. Earlier Analysis Used. Identify and state where they are available for review.

    b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards and state whether such effects were addressed by mitigation measures based on the earlier analysis.

    c. Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify:

   a. The significance criteria or threshold, if any, used to evaluate each question.

   b. The mitigation measure identified, if any, to reduce the impact to less than significant.

3.4.1 Aesthetics

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

DISCUSSION

Both the existing PP site and new PP site lie within the City's Elmhurst District (City of Oakland, 1996). The existing PP site is located in a hilly residential development area with the site sloping from approximately 180 feet above sea level at the northern property line adjacent to Ney Avenue to approximately 155 feet above sea level at the southern property line. The existing PP structure is a partially buried concrete building with a flat, concrete roof (see Photo 3.4.1-1 below). The new PP site is located in the predominantly flat, densely developed mixed commercial and residential area called the MacArthur Corridor (City of Oakland, 1998). The new PP site is approximately 90 feet above sea level and gently slopes downward along 96th Avenue, away from MacArthur Boulevard, from east to west and is located adjacent to a multi-story residential development (see Photo 3.4.1-2 below). The new PP site currently features non-native low ground cover grassland vegetation, which would be removed as part of the Project.

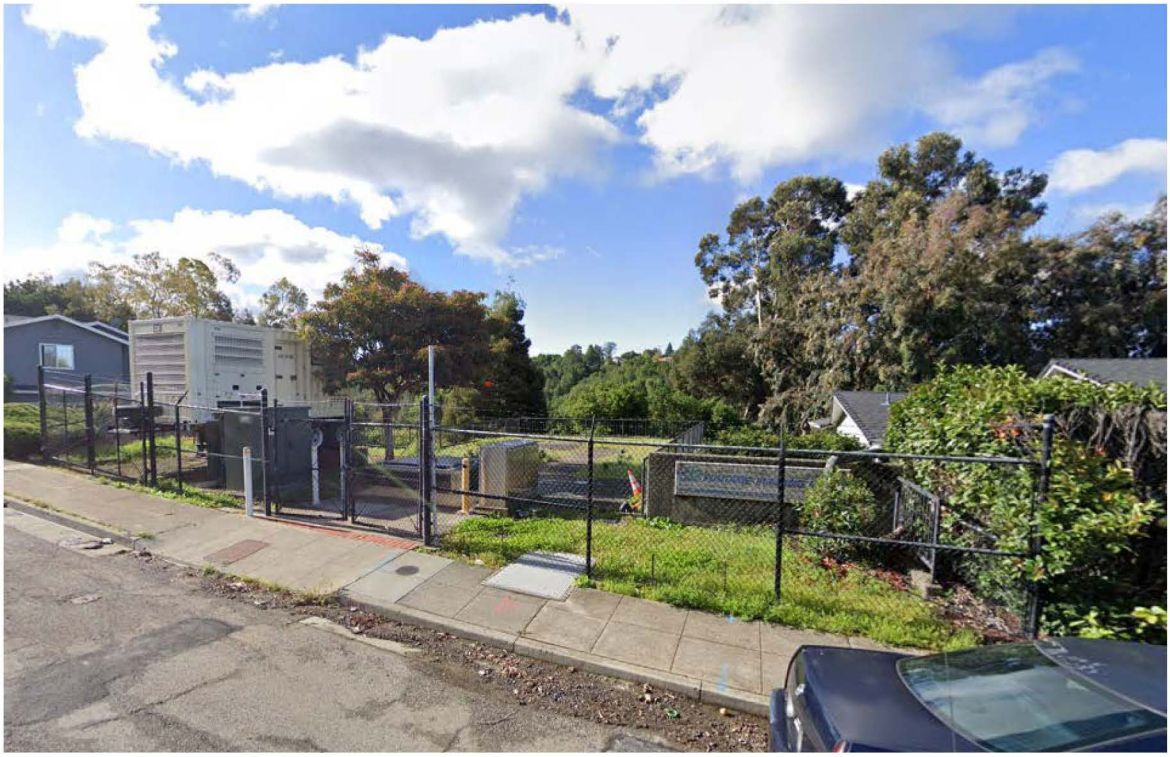


Photo 3.4.1-1 – Existing PP site as seen looking south from Ney Avenue.



Photo 3.4.1-2 – New PP site as seen looking south from MacArthur Boulevard.

The existing pipeline disconnection points and new pipeline construction would all be completed underground, and ground surfaces restored to their former condition at the completion of construction activities.

a. No Impact.

A scenic vista is defined as a distant view encompassing valued natural or built landscape features such as ridgelines, water bodies or landmark features. Views of the Oakland Hills from the flatlands, downtown and Lake Merritt, the shoreline, and panoramic views from Skyline Boulevard, Grizzly Peak Road, and other hillside locations are identified as areas of great visual importance in the City's General Plan (City of Oakland, 1996) and are considered designated scenic vistas in this analysis. The existing pipeline disconnection points and new pipeline construction would all be completed underground and therefore would not be visible after construction. None of the Project sites would result in visual changes that would be seen in the same view as any of the areas of great visual importance in the City's General Plan; therefore, construction and operation of the Project would have no impact on a scenic vista.

b. No Impact.

The nearest state scenic highway designated by the California Department of Transportation (Caltrans) is I-580, from the San Leandro city limits to Highway 24 in Oakland (Caltrans, 2019). None of the Project sites would be visible from I-580. Therefore, construction and operation of the Project would have no impact on a designated state scenic highway.

c. Less than Significant Impact.

The City is considered an urbanized area, as defined in CEQA Guidelines Section 15387, and as mapped by the U.S. Census (2010); thus, impacts are considered in the context of the potential to conflict with applicable zoning and other regulations governing scenic quality.

The City's General Plan includes objectives, policies, and actions that guide development design and aesthetic resource impact considerations, with the goal of protecting scenic resources. Objective OS-12, Street Trees includes policies that promote efforts to "green" Oakland residential and commercial areas by installing street trees. However, it is noted that efforts to further progress in installing street trees have been impeded due to lack of funding for tree maintenance and care. Policy OS-12.3 dictates that removal of street trees shall provide replacement trees in all cases where the site is suitable for street trees. At the existing PP site, one tree would need to be removed from within the site to provide space for construction equipment to operate during demolition of the existing PP structure. At the new PP site, one street tree would need to be removed in the landscape strip in the City's public right of way on 96th Avenue to allow for a new access driveway for PG&E transformer maintenance.

Two new trees would be planted at the new PP site nearest MacArthur Boulevard to improve the visual appearance and to blend the facility's appearance in with the established surrounding land use, which is a mixed residential and commercial neighborhood. The two

new trees would be maintained by EBMUD staff, thereby reducing resources needed from the City to meet Objective OS-12.

The City's General Plan, Land Use and Transportation Element, Chapter 4 Implementation Program identifies the MacArthur Boulevard corridor (MacArthur Corridor) as rezoned to stimulate both commercial and residential development. As described in Section 2.3, New PP, of Chapter 2.0, Project Description, the architecture of the new PP would be a residential design concept that utilizes building materials, colors, and features that blend the facility into the predominantly mixed use residential and commercial neighborhood. Figure 3.4.1-1 shows a rendered image of the new PP site building architecture with landscaping matured to 10 years as seen looking south from MacArthur Boulevard. The building features beige stucco cladding with contrasting trim over cast-in-place concrete walls, covered by a steel-framed gable roof with brown asphalt shingles. As described in Section 2.3, New PP, of Chapter 2.0. Project Description, the landscaping would include an assortment of plants including a Marina madrone (Arbutus 'Marina') in the northeast corner of the site and California Mountain lilac (Ceanothus concha) as a hedge shrub along the southern perimeter of the site. Other low shrubs and plants for the remaining planting areas include Carmel Creeper (Ceanothus griseus), sticky monkey flower (Mimulus aurantiacus), and Purple Needlegrass (Nasella pulchra) (Panorama, 2021).



New PP Site Architecture and Landscaping
Figure 3.4.1-1

Because the Project adheres to the City's General Plan and does not conflict with applicable zoning or other regulations governing scenic quality, the Project would not degrade the existing visual character or quality of the surrounding mixed residential and commercial area, therefore the Project impacts are less than significant.

d. Less than Significant with Mitigation Incorporated.

After construction is complete, the new PP site would have motion detected security lighting once it is in operation. Periodically, this lighting may be on consistently, in non-motion detect mode, if evening maintenance is required. Infrequent use and uses in short duration of the security lighting would ensure that the lighting is not a substantial new source of light in the area. The lighting would also include luminaire shields to ensure that no light is directed off the Project site or into the sky.

Although it is not expected, nighttime construction may be a temporary new light source if construction occurs up to 7 pm during winter periods when it gets dark before 6 pm. Should construction need to occur at night, lighting would be used to illuminate the construction area. The construction lighting may be visible to adjacent residences and along public roadways. Although the use of construction lighting at night would be temporary, the impact from night lighting on nighttime views could be potentially significant. Mitigation Measure AES-1: Nighttime Lighting Controls requires the shielding of night lighting to be directed downward or oriented such that the light source is not directed toward residential areas or into streets. By directing the light source away from residential areas and streets, the nighttime lighting would be kept contained on the Project site, reducing the potential to create a new source of light or glare that would adversely affect nighttime views in the area.

> **Mitigation Measure AES-1: Nighttime Lighting Controls.** Stationary lighting used during nighttime construction (if required) shall be shielded and directed downward or oriented such that the light source is not directed toward residential areas or into streets. With implementation of Mitigation Measure AES-1, which requires the shielding of night lighting, the Project would not create a new source of substantial light that would adversely affect views and construction impacts would be less than significant.

With implementation of Mitigation Measure AES-1, which requires the shielding of night lighting, the Project would not increase create a new source of substantial light that would adversely affect views and impacts would be less than significant.

REFERENCES

Panorama, Fontaine Pumping Plant Replacement Project Aesthetics Conceptual Design Report, September 2021.

City of Oakland, Open Space, Conservation, and Recreation Element, Chapter 5: Planning Area Strategies, Elmhurst District, Oakland General Plan, June 1996.

City of Oakland, Land Use and Transportation Element, Oakland General Plan, March 1998.

California Department of Transportation (Caltrans), California Scenic Highway Mapping System – Updated 2019. Available online at: https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=2e921695c43643b1aaf7000dfcc19983.

3.4.2 Agriculture and Forestry Resources

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. -- Would the project:	**Potentially Significant Impact**	**Less than Significant with Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), or timberland zoned Timberland Production (as defined by Government Code section 51104 (g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

DISCUSSION

a. No Impact.

The Project sites are not designated as prime Farmland, Unique Farmland, or Farmland of Statewide Importance. The California Department of Conservation designates the Project sites as "Urban and Built-Up Land" (California Department of Conservation, 2014). The Project sites are located within an urban area surrounded by residential and commercial uses. Therefore, there would be no impact associated with converting farmland to non-agricultural use.

b. No Impact.

None of the Project sites are currently zoned for agricultural use nor are any under a Williamson Act contract for agricultural preservation.

c. No Impact.

None of the Project sites are currently zoned for forest land, timberland, or timberland zoned Timberland Production. The existing PP site and new PP site are located on low-density, residential-zoned areas within the City.

d and e. No Impact.

None of the Project sites would involve changes that could result in loss of forest land or conversion of forest land to non-forest use, or conversion of Farmland to non-agricultural use. The Project sites do not occur on forest land or Farmland.

REFERENCES

California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program, California Important Farmland Finder, 2014. Available at: https://maps.conservation.ca.gov/DLRP/CIFF/.

3.4.3 Air Quality

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

DISCUSSION

The air quality impact analysis is based upon the Fontaine Pumping Plant Replacement Project Air Quality Technical Report (Panorama, 2021) that includes a review of existing air quality information and research and analysis completed for the existing PP site, existing pipeline abandonment disconnection sites, new PP site and new pipeline alignments. The air quality impact analysis considers both operational and construction impacts associated with the proposed Project.

BAAQMD is the regional agency responsible for air quality regulation within the San Francisco Bay Area Air Basin (SFBAAB), which encompasses nine counties in the San Francisco Bay Area and covers all Project sites. BAAQMD regulates air quality through its planning and review activities and has permit authority over most types of stationary emission sources. BAAQMD can require stationary sources to obtain permits and can impose emission limits, set fuel or material specifications, or establish operational limits to reduce air emissions. BAAQMD also regulates new or expanding stationary sources of toxic air contaminants.

The BAAQMD *CEQA Air Quality Guidelines* (BAAQMD Guidelines) advise lead agencies on how to evaluate potential air quality impacts, including establishing quantitative and qualitative thresholds of significance. In June 2010, the BAAQMD adopted updated BAAQMD Guidelines, including new thresholds of significance, and revised them in May 2011. The BAAQMD issued an interim update to the BAAQMD Guidelines (dated May 2017), which includes thresholds of significance consistent with those adopted in 2010. These thresholds were designed to establish the level at which BAAQMD believes air pollution emissions would cause significant environmental impacts under CEQA. The 2017 BAAQMD Guidelines were used in this analysis.

a. Less than Significant Impact.

The most recently adopted air quality plan in the SFBAAB is the BAAQMD's *2017 Bay Area Clean Air Plan* whose primary goals are to protect public health and the climate. The 2017 BAAQMD Guidelines recommend that a project's consistency with the current air quality plan be evaluated using the following three criteria:

a. The project supports the goals of the applicable air quality plan.

b. The project includes applicable control measures from the air quality plan.

c. The project does not disrupt or hinder implementation of any control measures from the air quality plan.

If it can be concluded with substantial evidence that a project would be consistent with the above three criteria, then the BAAQMD considers the project to be consistent with the air quality plan prepared for the Bay Area.

The primary goals of the *2017 Bay Area Clean Air Plan* are to attain air quality standards, reduce population exposure, protect public health in the Bay Area, reduce Greenhouse Gas (GHG) emissions, and protect the climate. The *2017 Bay Area Clean Air Plan* includes a range of control measures, which consist of actions to reduce combustion-related activities, decrease fossil fuel combustion, improve energy efficiency, and decrease emissions of potent GHGs. Numerous measures address the reduction of several pollutants: Ozone precursors, Particulate Matter (PM), toxic air contaminants (TACs), and/or GHGs. Other measures focus on a single type of pollutant, potent GHGs such as methane and black carbon, or harmful fine particles that affect public health.

Suspended and Inhalable Particulate Matter (PM_{10} and $PM_{2.5}$)
Particulate matter is a class of air pollutants that consists of solid and liquid airborne particles in an extremely small size range. Particulate matter is measured in two size ranges: PM_{10} for particles less than 10 microns in diameter, and $PM_{2.5}$ for particles less than 2.5 microns in diameter. Motor vehicles generate about half of Bay Area PM through tailpipe emissions as well as brake pad and tire wear. Wood burning in fireplaces and stoves, industrial facilities, and ground-disturbing activities such as construction are other sources of fine particulates.

Ozone
Ozone is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG) and nitrogen oxides (NO_x). The main sources of ROG and NO_x, often referred to as ozone precursors, are combustion processes (including motor vehicle engines) and the evaporation of solvents, paints, and fuels. Automobiles are the single largest source of ozone precursors in the Bay Area.

The BAAQMD-recommended guidance for determining if a project supports the goals in the current clean air plan is to compare project-estimated emissions with BAAQMD thresholds of significance. If project emissions would not exceed the thresholds of significance after the application of all feasible mitigation measures, the project would be consistent with the goals of the *2017 Bay Area Clean Air Plan*. Construction and operational impacts of the Project are

discussed below, which are then used to evaluate consistency with the *2017 Bay Area Clean Air Plan*.

Construction

Construction activities are typically short term and result in emissions of ozone precursors and PM in the form of dust (fugitive dust) and exhaust (e.g., vehicle tailpipe) emissions. The Project includes demolition of the existing PP structure, excavation to abandon existing pipelines at disconnection point sites and install new pipelines, and construction of the new PP. Pollutant emissions associated with the Project activities would be generated from the following general construction activities: (1) demolition, grading, excavation, and construction; (2) vehicle trips from workers traveling to and from the construction areas; (3) trips associated with delivery and hauling of construction supplies to, and debris from, the construction areas; (4) fuel combustion by on-site construction equipment; and (5) paving and architectural coatings (paints and other coatings used in interior and exterior finishing of buildings). These Project activities would temporarily create emissions of dust, fumes, equipment exhaust, and other air pollutants. Emissions of ozone 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, other types of architectural coatings, or asphalt paving.

The amount of emissions generated on a daily basis would vary, depending on the intensity and types of construction activities occurring simultaneously at the time. The construction durations include an approximate 25-week pipeline installation phase, an approximate 51-week new PP construction phase, and an approximate 10-week demolition and pipeline abandonment phase, which would result in a construction duration of between 11 months and 20 months depending on the extent different phases are completed concurrently. The air quality analysis is based on the shortest potential construction schedule of 11 months, evaluating the highest potential average daily construction emissions scenario.

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. Particulate matter (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 ozone 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 (during paving) and architectural coatings; the

amount of these emissions would vary depending on the amount of paving or coating that would occur each day.

The BAAQMD Guidelines include significance criteria for evaluating construction-phase emissions associated with projects. In accordance with BAAQMD Guidelines, a project would have a significant construction-related impact if it would cause a new increase in pollutant emissions of ROG exceeding 54 pounds per day (lbs/day), NOx exceeding 54 lbs/day, PM_{10} exceeding 82 lbs/day, or $PM_{2.5}$ exceeding 54 lbs/day. BAAQMD does not have a threshold of significance for fugitive dust impacts but instead regards fugitive dust impacts to be mitigated if appropriate management practices are implemented. For construction-phase impacts, BAAQMD recommends implementation of construction mitigation measures to mitigate construction impacts.

Emissions from demolition of the existing PP and construction of the new PP were estimated using California Emissions Estimator Model (CalEEMod) version 2016.3.2, while construction emissions related to the installation of the new suction and discharge pipelines were estimated using Sacramento Air Quality Management District Roadway Construction Emissions Model (RCEM) version 9.0. CalEEMod estimates emissions from area sources based on land uses, while RCEM has been developed to estimate emissions specifically from linear construction projects (e.g., roadways, bridges, and pipelines). CalEEMod computes annual emissions for construction that are based on the project type, size, and acreage and provides emission estimates for both on-site and off-site construction activities. On-site activities are primarily comprised of construction equipment emissions, while off-site activity includes worker, hauling, and vendor traffic. Likewise, RCEM computes total project emissions for both on-site and off-site construction activities, including emissions from construction equipment and traffic generated by commuting workers and soil/asphalt hauling.

The latest version of the CalEEMod model is based on the older version of the California Air Resources Board (CARB) EMissions FACtors (EMFAC) 2014 motor vehicle emission factor model, while RCEM uses emissions factors from the latest EMFAC model (EMFAC2017). Because CalEEMod has not been updated to include EMFAC2017, construction trip for the existing site demolition and new PP construction was applied to EMFAC2017 motor vehicle emissions factors to estimate construction site trip emissions, which include worker travel, vendor trucks and haul trucks.[4]

Table 3.4.3-1 below shows a summary of the construction emissions as estimated using CalEEMod and RCEM, and provides daily emissions of criteria air pollutants, as averaged over the entire duration of construction, compared to the BAAQMD significance thresholds. As shown in Table 3.3-1, emissions of all evaluated pollutants would be well below BAAQMD significance thresholds.

[4] See CARB's EMFAC2017 Web Database at https://www.arb.ca.gov/emfac/2017/

Table 3.4.3-1 Unmitigated Average Daily Construction Emissions

	Construction Emissions (pounds/day)			
	ROG	NO_X	Exhaust PM_{10}	Exhaust $PM_{2.5}$
Project Construction Emissions	1.8	15.3	0.7	0.6
BAAQMD Threshold	54	54	82	54
Exceed Threshold?	No	No	No	No

SOURCE: Calculations by Panorama, CalEEMod and RCEM Modeling, Fontaine Pumping Plant Replacement Project Air Quality Technical Report (Panorama, 2021)

As indicated in Table 3.4.3-1, predicted construction-period emissions would not exceed the BAAQMD significance thresholds. 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. 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 Section 1.3.E, Dust Control and Monitoring Plan, Section 3.3.B, Dust Control, Section 3.3.C, Dust Monitoring During Demolition and Construction, Section 3.3.D, Dust Control System Compliance, Section 3.4.A, Air Quality and Emissions Control, and Section 3.4.B, Architectural Coatings, of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, which requires implementation of BAAQMD-recommended measures addressing dust and emissions controls (e.g., covering all haul trucks entering/leaving the site, use of line power instead of diesel generators at all construction sites where line power is available, and minimizing idling times either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes), 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; Section 1.1.A, Compliance and Intent, of EBMUD Standard Construction Specification 02 82 13, Asbestos Control Activities, which requires all demolition activities of asbestos containing structures be conducted in accordance with procedures required by the BAAQMD for the safe removal and disposal of asbestos containing material; and Section 1.4.B, Lead Demolition Plan, of EBMUD Standard Construction Specification 02 83 13, Lead Hazard Control Activities, which requires submittal of a Lead Demolition Plan detailing handling, engineering control, removal, and disposal procedures for lead-containing materials..

Because the estimated construction emissions from the Project would be less than the recommended BAAQMD significance thresholds for construction and with implementation of the requirements specified in EBMUD Standard Construction Specifications Section 01 35 44, Environmental Requirements, including Section 1.3.E, Dust Control and Monitoring Plan, Section 3.3.B, Dust Control, Section 3.3.C, Dust Monitoring During Demolition and

Construction, Section 3.3.D, Dust Control System Compliance, Section 3.4.A, Air Quality and Emissions Control, and Section 3.4.B, Architectural Coatings; EBMUD Standard Construction Specifications Section 02 82 13, Asbestos Control Activities; and EBMUD Standard Construction Specifications Section 02 83 13, Lead Hazard Control Activities, which include specified dust control BMPs to minimize construction-related emissions, the Project would be consistent with all applicable control strategies in the *2017 Bay Area Clean Air Plan*. Because Project construction would be consistent with all three criteria identified by the BAAQMD to evaluate consistency with the *2017 Bay Area Clean Air Plan*, the Project would lead to a less than significant impact with respect to conflicting with or obstructing implementation of the *2017 Bay Area Clean Air Plan*. The EBMUD Practices and Procedures Monitoring and Reporting Plan (Appendix B) lists the applicable standard specifications language.

Operation
Once operational, the Project would not include any new sources of emissions. The new PP and pipelines would operate in the same way as the existing facilities, would be powered by electricity, and would be operated and monitored remotely. EBMUD worker vehicle trips for operation and maintenance would remain the same or less than existing, with approximately two trips per month. For these reasons, the Project would not hinder the *2017 Bay Area Clean Air Plan*'s ability to meet its primary goals to reduce emissions and harmful pollutants, safeguard public health, and reduce GHG emissions. Because the Project would not generate operational emissions that would hinder regional air quality planning in the area, the impact would be less than significant with respect to implementation of the applicable air quality plan.

b. Less than Significant Impact.

Federal and California state ambient air quality standards have been set to protect public health and the climate. "Attainment" status for a pollutant means that BAAQMD meets the standards set by the United States Environmental Protection Agency (U.S. EPA) (federal) or EPA (state). Generally, California state standards are more stringent than federal standards. Currently, as measured under both California state and federal standards, the Bay Area Air Basin has non-attainment status for PM and ozone, though standards are exceeded only periodically.

Regarding the 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 individual impact 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 Bay Area Clean Air Plan*.

Construction
As indicated in Table 3.4.3-1, predicted unmitigated construction-period emissions of ROG,

NO_X, PM_{10} exhaust, and $PM_{2.5}$ exhaust would not exceed the BAAQMD significance thresholds. 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 that would further reduce construction-related emissions from Table 3.4.3-1, including EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, Section 3.4.A, Air Quality and Emissions Control, which requires the Project Contractor to use electrical power where available, comply with regulatory requirements for compression-ignition engines, register portable engines and equipment with CARB or otherwise permitted by BAAQMD, limit idling times to a maximum of 5 minutes, equip construction equipment, diesel trucks and generators with the Best Available Control Technology for emission reduction of NO_X and PM, and perform regular low-emission tune-ups on call construction equipment. Additionally, EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, Section 3.4.B, Architectural Coatings requires the Project Contractor to use architectural coatings compliant with appropriate VOC limits as established in the BAAQMD regulations to reduce volatile organic compound (i.e., ROG) emissions during construction and maintenance.

Because the Project is consistent with the *2017 Bay Area Clean Air Plan* as discussed under a), because estimated construction emissions from the Project would be less than the recommended BAAQMD significance thresholds for construction, and with implementation of Specification 01 35 44, Environmental Requirements, Section 3.4.A, Air Quality and Emissions Control and Section 3.4.B, Architectural Coatings, which would further reduce construction emissions, the Project would not result in a cumulatively considerable net increase of any criteria pollutant and impacts from construction would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (Appendix B) lists the applicable standard specifications language.

Operation

As stated above in a), the Project 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 are no emissions sources (i.e., diesel-fueled equipment), therefore, new PP operational impacts related to air quality standards from the proposed Project would have no impact.

c. Less than Significant Impact.

Construction

BAAQMD defines sensitive receptors as children, adults, and seniors occupying or residing in residential dwellings, schools, colleges and universities, daycares, hospitals, and senior-care facilities. Although it was concluded, under a) and b) above, that construction exhaust air pollutant emissions would not contribute substantially to existing or projected air quality violations, construction exhaust emissions may still pose health risks for sensitive receptors, such as surrounding residents. The primary community risk impact issue associated with construction emissions are cancer risk associated with diesel particulate matter (DPM), which is identified by CARB as a TAC due to the potential to cause cancer, and non-cancer health impacts associated with exposure to fugitive sources of $PM_{2.5}$.

Construction equipment and associated heavy-duty truck traffic generates DPM, while construction activities generate fugitive $PM_{2.5}$. A health risk assessment was conducted per the State of California Office of Environmental Health Hazard Assessment (OEHHA) and CARB recommended methods for conducting health risk assessments. The health risk assessment evaluates how TAC emissions are released from a project, how they disperse throughout the community, and how they may affect human health.

BAAQMD thresholds for cancer risk, $PM_{2.5}$ concentration, and Hazard Index (HI) were applied to the health risk assessment to evaluate potential cancer risk and potential non-cancer health effects to nearby sensitive receptors from project-related construction emissions of DPM and $PM_{2.5}$. Potential non-cancer health hazards from TAC exposure are expressed in terms of HI, which is the ratio of the TAC concentration to a reference exposure level. The HI value represents the maximum concentration at which no adverse health effects to the respiratory system are anticipated to occur.

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 3.4.A, Air Quality and Emissions Control, of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, which requires that all construction equipment, diesel trucks, and generators be equipped with Best Available Control Technology (BACT) for emission reductions of NOx and PM. Implementation of Specification 01 35 44, Environmental Requirements, Section 3.4.A, Air Quality and Emissions Control, in this analysis assumes the use of engines that meet the Tier 4 Final Standards, U.S. EPA's most stringent standards for off-highway diesel engines, as the BACT for all construction equipment.

The maximum modeled annual PM_{10} exhaust emissions (assumed to be DPM) and fugitive $PM_{2.5}$ dust emissions were estimated at each of the Project sites using the CalEEMod model for on-road vehicles and the EMFAC2017 model for on-road vehicles reflecting implementation of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, Section 3.4.A, Air Quality and Emissions Control. The U.S. EPA AERMOD dispersion model was used to predict DPM and $PM_{2.5}$ concentrations at the nearest sensitive receptors (i.e., residents, school children, elderly) to the Project construction areas. Using the maximum annual modeled DPM concentrations, the maximum increased cancer risks were calculated using BAAQMD recommended methods and exposure parameters. HI and maximum annual $PM_{2.5}$ concentrations were also calculated and identified.

New PP and New Pipelines

Results of the health risk assessment for construction and demolition activities indicated that the nearest sensitive receptors for the new PP and pipeline construction sites are located on the second floor of a multi-family residence adjacent to the southeastern boundary of the new PP site, adjacent to MacArthur Boulevard. Table 3.4.3-2 summarizes the cancer risks, $PM_{2.5}$ concentrations, and HI for project-related construction activities affecting the nearest sensitive receptors accounting for the emission reductions that would result from implementation of EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements, Section 3.4.A, Air Quality and Emissions Control.

Table 3.4.3-2 Construction Risk Impacts at Nearest Sensitive Receptor – New PP and New Pipelines

Source	Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index (HI)
New PP and New Pipeline Construction	5.4 (infant)	0.17	0.01
BAAQMD Single-Source Threshold	>10.0	>0.3	>1.0
Exceed Threshold?	No	No	No

Existing PP and Existing Pipeline Abandonment

The nearest sensitive receptors for the demolition of the existing PP site are located at a single family home adjacent to the eastern boundary of the site. Emissions associated with existing pipeline abandonment disconnection sites were incorporated as part of the emissions estimates for the demolition of the existing PP site. As a result, emissions from the demolition of the existing PP are conservative, as the emissions would be distributed over a larger area that covers the existing PP and existing pipeline abandonment disconnection sites which conservatively results in an over estimation of the potential health impacts near the demolition site. Table 3.4.3-3 summarizes the cancer risks, $PM_{2.5}$ concentrations, and HI for project-related construction activities affecting the nearest sensitive receptors accounting for the emission reductions that would result from implementation of EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements, Section 3.4.A, Air Quality and Emissions Control.

Table 3.4.3-3 Construction Risk Impacts at Nearest Sensitive Receptor – Existing PP and Existing Pipeline Abandonments

Source	Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index (HI)
Existing PP and Existing Pipeline Abandonments	2.2 (infant)	0.12	0.01
BAAQMD Single-Source Threshold	>10.0	>0.3	>1.0
Exceed Threshold?	No	No	No

As indicated in Tables 3.4.3-2 and 3.4.3-3, with implementation of requirements specified in Standard Construction Specification 01 35 44, Environmental Requirements, Section 3.4.A, Air Quality and Emissions Control, which requires construction equipment, diesel trucks, and generators be equipped with BACT for emission reductions, the Project would not exceed the BAAQMD single-source threshold of greater than 0.3 $\mu g/m^3$ for annual $PM_{2.5}$ concentration, 10.0 per million for cancer risk, and 1.0 for HI from construction activities, therefore, the impacts to sensitive receptors related to construction would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (Appendix B) lists the applicable standard specifications language.

Operation

Operation of the new PP would not be a source of significant TAC pollutant emissions. No fuel combustion equipment (i.e., diesel generators) are planned at the site under normal operations. Therefore, emissions associated with the operation of the new PP would primarily include those from vehicles that occasionally travel to and from the site. The estimated trips to and from the site (i.e., two trips per month, weekdays only) would be less than those generated by a single residence. Operation of the Project would not expose sensitive receptors to substantial pollutant concentrations, and the impact would be less than significant.

d. Less than Significant Impact.

Construction

Activities requiring construction equipment and trucks that emit diesel- and/or gasoline-powered engine exhaust odors may be a potential source of objectionable odors. However, the restriction of construction activities to daylight work hours and the implementation of the EBMUD standard practices and procedures below would reduce this potential impact to 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 Section 1.3.I, Tuneup Logs, and Section 3.4.A, Air Quality and Emissions Control, of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements. Section 1.3.I, Tuneup Logs, of EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements, requires the Contractor provide on a quarterly basis for review records of tune-up logs that show construction equipment, particularly haul and delivery trucks, in use at the Project sites have undergone required maintenance. Section 3.4.A, Air Quality and Emissions Control, of EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements, includes the following provisions for air quality and emissions control:

- 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 Measures (ATCM) 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 CARB or otherwise permitted by the appropriate local air district, as required.
- Contractor shall implement standard air emission 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 five minutes as required by the California 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.

With implementation of Section 1.3I, Tuneup Logs, and Section 3.4.A, Air Quality and Emissions Control, of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, construction equipment used at the Project site would be maintained regularly for efficient operation and specified air emissions control provisions would be included to minimize construction diesel exhaust emissions that could generate objectionable odors, the Project impact related to creation of objectionable odors affecting a substantial number of people would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (Appendix B) lists the applicable standard specifications language.

Operation
The new PP pump units would operate within the enclosed new concrete building and be powered by electricity similar to the existing pump units. As such, the new PP operations would not generate objectionable odors affecting a substantial number of people.

REFERENCES

Panorama, Fontaine Pumping Plant Replacement Project Air Quality Technical Report, September 2021.

BAAQMD, 2017 Bay Area Clean Air Plan, April 19, 2017. Available: https://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf.

BAAQMD, BAAQMD CEQA Air Quality Guidelines – Assessing the Air Quality Impacts of Projects and Plans, December 1999.

BAAQMD, 2017. BAAQMD CEQA Air Quality Guidelines, adopted June 2, 2010, revised May 2017.

CARB. (2018). EMFAC2017. Retrieved from California Air Resources Board: https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/road-documentation/msei-modeling-tools-emfac.

OEHHA (Office of Environmental Health Hazard Assessment), 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines, Guidance Manual for the Preparation of Health Risk Assessments, Available: http://oehha.ca.gov/air/hot_spots/2015/2015GuidanceManual.pdf. Accessed October 29, 2018.

EBMUD, Standard Construction Specification, Section 01 35 44, Environmental Requirements, August 31, 2018.

EBMUD, Standard Construction Specification, Section 02 82 13, Asbestos Control Activities, May 7, 2014.

EBMUD, Standard Construction Specification, Section 02 83 13, Lead Hazard Control Activities, May 31, 2016.

3.4.4 Biological Resources

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

DISCUSSION

The biological resources impact analysis is based upon the report titled Fontaine Pumping Plant Replacement Project Biological Resources Assessment (EBMUD, 2021). The potential for special-status species to occur at the existing PP site, existing pipeline abandonment disconnection sites, new PP site and new pipeline alignments (Project sites) was evaluated by determining which special-status species occur in the vicinity of these Project sites through a literature and database search. Special-status species included those listed as endangered, threatened, rare, or proposed for listing by U.S. Fish and Wildlife Service (USFWS) or California Department of Fish and Wildlife (CDFW). California Native Plant Society (CNPS) plant lists and locally rare plant lists were also reviewed. Database searches for known

occurrences of special-status species focused on a one-mile area around the existing PP and new PP sites. The new pipeline alignments and existing pipeline abandonment disconnection sites fall completely within the overlapping one-mile buffers for the existing PP and new PP sites; therefore, a separate search was not necessary. A one-mile area was chosen for analysis rather than a five-mile area due to the disturbed nature of all the Project sites and the fact that they are surrounded by commercial and residential development. The following sources were reviewed to determine which special-status plant and wildlife species have been documented to occur in the vicinity of the Project sites:

- California Natural Diversity Database (CNDDB) records
- USFWS Information for Planning and Consultation (IPaC) Trust Resource Report
- CNPS Electronic Inventory records
- CNPS list of Rare, Unusual and Significant Plants of Alameda and Contra Costa Counties

In addition, EBMUD biologists performed a field assessment in December 2018 at the existing PP and new PP sites to determine: 1) the potential of the Project to impact special status species; and 2) presence of sensitive biological resources protected by local, state, and federal laws and regulations within the Project area.

a. Less than Significant Impact.

Impacts to special-status species could occur at the existing PP and new PP sites from construction activities that would cause injury or mortality to the species or result in the destruction of sensitive habitat used by special-status species as a result of construction noise. The new pipeline alignments and existing pipeline abandonment disconnection sites would be installed entirely within existing paved roadways that experience regular traffic related noise and are unlikely to impact sensitive species, therefore the new and existing pipelines will not be discussed in the analysis below.

The existing PP and new PP sites are located in an urban environment, are themselves highly altered, and significant human disturbance occurs adjacent to and around both existing PP and new PP sites on a daily basis. The existing PP site is a small, maintained site of less than 0.2 acres that is completely encircled by adjacent single-family homes. Much of the site is hardscape consisting of pavement, stairs and the PP building. The remainder of the site consists of scattered small patches of annual grasses and German ivy with a few ornamental shrubs and trees. There were no native trees or shrubs found on the site during the field assessment. A few coast live oak trees were observed on the lots adjacent to the site. The new PP site is a vacant EBMUD-owned parcel that is currently fenced, slightly sloped to the west, and vacant. The new PP site is covered with ruderal vegetation interspersed with plastic sheeting. There are no trees on the site but there are several ornamental trees and shrubs on the adjacent residential lots and along the adjacent City sidewalk right-of-way.

The biological inventory database searches and field assessment identified only two plant special-status species that have a low potential to occur in the area around both existing PP and new PP sites. However, no suitable habitat exists on either the existing PP or new PP site for special-status species and special-status species are not expected to occur. Table 3.4.4-1

shows a list of special-status species for which CNDDB occurrences have been noted within one mile of the Project sites and the potential for those species to occur at any of the Project sites. Table 3.4.4-2 shows a list of federal endangered and threatened species that may occur in the Project area and the potential for those species to occur at any of the Project sites, where the Project area is defined as the United States Geological Society (USGS) East Oakland Quad which reaches from the University of California at Berkeley campus to the north down to the Oakland Zoo to the south and covers approximately 59 square miles and encompasses all of the Project sites. The USGS East Oakland Quad is a much larger area than the area defined by the CNDDB one mile buffer surrounding the Project sites and includes open space habitat suitable for many of the endangered and threatened species found in Table 3.4-2. Therefore, where species are listed in both the CNDDB and USFWS IPaC Trust Resource Report, the CNDDB findings govern due to the closer proximity to the Project sites.

TABLE 3.4.4-1 Sensitive Species Known to Occur in the Project Vicinity[1]

Scientific Name	Common Name	STATUS Federal/ State/ CNPS	Habitat Requirements	Potential for Occurrence
Birds				
Melospiza melodia pusillula	Alameda Song Sparrow	…/SSC/…	Salt marsh habitats with dense vegetation, and upland habitats for refugia along the southern and eastern fringes of the San Francisco Bay.	**No potential to occur.** No suitable habitat present.
Invertebrates				
Euphydryas editha bayensis	Bay Checker-spot Butterfly	FT/…/…	Sparse grassland or scrub. Larval host plant is primarily California plantain (Plantago erecta), but in many years the larvae require denseflowered indian paintbrush (Castilleja densiflora) or purple owl's clover (C. exerta).	**No potential to occur.** No suitable habitat present.
Plants				
Gilia millefoliata	Dark-eyed Gilia	…/…/1B.2	Coastal sand dune and strand habitats. Blooms April-July.	**No potential to occur.** No suitable habitat present.
Hoita strobilina	Loma Prieta Hoita	…/…/1B.1	Chaparral, cismontane woodland, riparian woodland; on mesic, serpentine sites. Blooms May - October	**No potential to occur.** No suitable habitat present.
Monolopia gracilens	Woodland Woolly-threads	…/…/1B.2	Serpentine soils within openings in broadleafed upland forest, chaparral, cismontane woodland, north coast coniferous forest, valley and foothill grassland. Blooms February - July.	**No potential to occur.** No suitable habitat present.
Polygonum marinense	Marin Knotweed	…/…/3.1	Annual herb found in salt marshes and swamps. Blooms April - October.	**No potential to occur.** No suitable habitat present.
Streptanthus albidus ssp. peramoenus	Most Beautiful Jewel-flower	…/…/1B.2	Cismontane woodland, chaparral, grassland; in serpentine outcrops on ridges and slopes. Blooms April - June.	**Low potential to occur.** Low potential to occur in annual grassland habitat in Project Area.
Fritillaria liliacea	Fragrant Fritillary	…/S2/1B.2	Typically occurs in open hilly grasslands at altitudes less than 200 meters in elevation. Prefers heavy soils including clays. Blooms February – April.	**Low potential to occur.** Low potential to occur in annual grassland habitat in Project Area.

[1] California Natural Diversity Database, December 18, 2018 (1 Mile Buffer)

Table 3.4.4-2 Federal Endangered and Threatened Species that may Occur in Project Area[1]

Common Name	Scientific Name	Federal Status	Habitat	Potential for Occurrence
Mammals				
Salt Marsh Harvest Mouse	*Reithrodont-omys raviventris*	Endangered	Tidal salt marshes in the San Francisco Bay and its tributaries. Occasionally found in higher grounds to escape flooding and high tides.	**No potential to occur.** No suitable habitat present.
Birds				
California Clapper Rail	*Rallus longirostris obsoletus*	Endangered	Marshes of San Francisco estuary	**No potential to occur.** No suitable habitat present.
California Least Tern	*Sterna antillarum browni*	Endangered	Marine and estuarine shores. Nests on sand dune and open beaches free of vegetation	**No potential to occur.** No suitable habitat present.
Western Snowy Plover	*Charadrius alexandrinus nivosus*	Threatened	Sand beaches, lagoons, dredge spoil deposits, dunes, and saline lakes, reservoirs, or ponds	**No potential to occur.** No suitable habitat present.
Reptiles				
Alameda Whipsnake	*Masticophis lateralis euryxanthus*	Threatened	Chaparral, northern coastal sage scrub, and coastal sage	**No potential to occur.** No suitable habitat present.
Amphibians				
California Red-legged Frog	*Rana draytonii*	Threatened	Shrubby or emergent riparian vegetation closely associated with deep, still or slow-moving water	**No potential to occur**. No suitable habitat. Isolated from all known occurrences
California Tiger Salamander	*Ambystoma californiense*	Threatened	Temporary or semi-permanent pools including seasonal ponds and vernal pools.	**No potential to occur**. No suitable habitat present, isolated from known occurrences by urban habitat.
Fishes				
Delta Smelt	*Hypomesus transpacificus*	Threatened	River channels and tidally-influenced backwater sloughs as well as channel edgewaters in the San Francisco Bay Delta	**No potential to occur**. No aquatic habitat present.
Fishes (continued)				
Tidewater Goby	*Eucyclogobius newberryi*	Endangered	Lagoons, estuaries, marshes, coastal streams	**No potential to occur**. No aquatic habitat present.
Insects				
Bay Checkerspot Butterfly	*Euphydryas editha bayensis*	Threatened	Dwarf plantain and purple owl's clover on shallow serpentine-derived soil	**No potential to occur**. No suitable habitat. Isolated from all known occurrences

Common Name	Scientific Name	Federal Status	Habitat	Potential for Occurrence
Callippe Silverspot Butterfly	*Speyeria callippe*	Endangered	Northern coastal scrub of the San Francisco Peninsula. Found on viola plants in coastal grasslands	**No potential to occur**. No suitable habitat. Isolated from all known occurrences
San Bruno Elfin Butterfly	*Callophrys mossii bayensis*	Endangered	Coastal grasslands with *Sedum spathulifolium* hostplant, mostly in the vicinity of San Bruno Mountain in San Mateo County.	**No potential to occur**. No suitable habitat. Isolated from all known occurrences
Crustaceans				
Vernal Pool Fairy Shrimp	*Branchinecta lynchi*	Threatened	Vernal pools and other small depressions, swales, slumps, or basins with a grass or muddy bottom surrounded by grasslands.	**No potential to occur**. No aquatic habitat present.
Flowering Plants				
Pallid Manzanita	*Arctostaphylos pallida*	Threatened	Maritime chaparral and oak woodlands with summertime fog and relatively cool temperatures. Blooms December-March.	**No potential to occur.** No suitable habitat present.
Presidio Clarkia	*Clarkia franciscana*	Endangered	Serpentine Soils in San Francisco Presidio and Oakland Hills. Blooms May-July	**No potential to occur.** No suitable habitat present.
Robust Spineflower	*Chorizanthe robusta var. robusta*	Endangered	Maritime chaparral, coastal scrub and dunes, openings in cismontane woodlands. blooms April-September	**No potential to occur.** No suitable habitat present.

[1]USFWS IPaC Query December 18, 2018 (East Oakland Quad)

Special-Status Plants (No Impact)

Construction

At both Project sites, no state or federally listed plant species were found, and no plant species listed in the statewide CNPS rare and endangered plant inventory were found during the field assessment. Two plant species considered "locally rare" by the CNPS East Bay Chapter were found to have low potential to occur in the area surrounding the Project sites. The Most Beautiful Jewel-Flower and Fragrant Fritillary are identified in the Rare, Unusual and Significant Plants of Alameda and Contra Costa Counties database (CNPS East Bay Chapter, 2016). Locally rare species are those species that the scientific community considers sensitive, unique or that occur at the limits of their natural range within a specific region. Both the Most Beautiful Jewel-Flower and Fragrant Fritillary are ranked by the East Bay CNPS chapter as "1B.2," which indicates that these species are on the East Bay CNPS chapter's high priority watch list. Plant species ranked as "B" are currently known to be found within six to nine regions within Alameda and Contra Costa Counties. According to the East Bay Chapter's ranking system, those plants listed as "B" are not protected. The Project sites contain no habitat suitable to support sensitive plant species. The habitats

present within the Project sites are characteristic of disturbed urban habitats, therefore no impacts to sensitive and special status plant species are anticipated.

Operation
The new PP site would include landscape design utilizing drought tolerant trees, shrubs, and groundcover to provide an attractive and complementary setting, as described in the Project Description and illustrated in Section 3.4.1, Aesthetics, of this MND. As such, there would be no operational impacts on special-status plant species.

Special-Status Amphibians (No Impact)

The two special-status amphibians that have recorded occurrences within the USGS East Oakland Quad are the California red-legged frog (*Rana draytonii*) (CRLF) and California Tiger Salamander (*Ambystoma californiense*) (CTS); however, there are no CNDDB CRLF or CTS observations within one mile of the Project sites. The Project sites are outside critical habitat for these species and these species were not observed during the December 2018 field assessment. There is no aquatic habitat at any of the Project sites, therefore limited potential for upland estivation or dispersal at the sites exists due to no proximity to aquatic habitat. For these reasons, both CRLF and CTS have no potential to occur within the Project sites; therefore, Project construction would have no impact on special-status amphibians.

Special-Status Reptiles (No Impact)

The one special-status reptile that has recorded occurrences within the USGS East Oakland Quad is the Alameda whipsnake (*Masticophis lateralis euryxanthus*); however, there are no CNDDB Alameda whipsnake observations within one mile of the Project sites. The Project sites are outside critical habitat for these species and these species were not observed during the site visit. For these reasons, the Alameda whipsnake has no potential to occur within the Project sites; therefore, Project construction would have no impact on special-status reptiles.

Special-Status Invertebrates (No Impact)

The three special-status invertebrates that have recorded occurrences within the USGS East Oakland Quad are the Bay Checkerspot Butterfly (*Euphydryas editha bayensis*), Callippe Silverspot Butterfly (*Speyeria callippe callippe*), and San Bruno Elfin Butterfly (*Callophrys mossii bayensis*); however, there are no CNDDB observations within one mile of the Project sites for the Callippe Silverspot Butterfly (*Speyeria callippe callippe*), and San Bruno Elfin Butterfly (*Callophrys mossii bayensis*) special-status invertebrates. Despite the Bay Checkerspot Butterfly (*Euphydryas editha bayensis*) being observed within one mile of the Project sites according to the observations found within the CNDDB, the Project sites do not provide suitable habitat for these species and are isolated from all known occurrences. These species were not observed during the field assessment. For these reasons, the Bay Checkerspot Butterfly, Callippe Silverspot Butterfly, and San Bruno Elfin Butterfly have no potential to occur within the Project sites; therefore, Project construction would have no impact on special-status invertebrates.

Special-Status Nesting Birds (Less than Significant Impact)

Construction

Avian species that are protected under the Migratory Bird Treaty Act (MBTA) have high potential to nest within or near the Project sites. These species may use trees, shrubs, man-made structures, or the ground for nesting habitat. Impacts to nearby nesting birds on or adjacent to the Project sites could occur during construction because of tree and shrub removal, ground disturbance, equipment movement, or by direct mortality. Disruption of nesting birds could occur because of increased human activity (e.g., due to the use of heavy equipment and human traffic) during the breeding season (approximately February through August). Potential impacts on migratory birds include the destruction of eggs or occupied nests, direct mortalities of young, and the abandonment of nests with eggs or young birds prior to fledging. Potentially significant impacts could result from Project construction activities that would destroy occupied nests or cause migratory birds to abandon their nests.

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 3.8, Protection of Birds Protected under the Migratory Treaty Act and Roosting Bats of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, which requires protection of migratory birds and their nests. Section 3.8, Protection of Birds Protected under the Migratory Treaty Act and Roosting Bats, of this standard construction specification includes the following provisions:

- EBMUD would conduct biological reconnaissance in advance of construction and would conduct biologic monitoring during construction as necessary.
- 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, foremen and project managers and up to 30 minutes for non-supervisory Contractor personnel. The training program would be completed in person or by watching a video, at an EBMUD designated location, conducted by a qualified biologist provided by EBMUD. The program would 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. The training would include a description of the nesting birds of the MBTA, including natural history and habitat, the general protection requirements to be implemented to protect the MBTA bird species, and a delineation of the limits of the work areas.
- 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 would conduct a preconstruction survey for nesting birds within 7 days prior to construction to ensure that no nest would 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 would be determined by EBMUD in consultation with CDFW and is based on the nest location, topography, cover and species' tolerance to disturbance.

- If an avoidance buffer is not achievable, a qualified biologist provided by EBMUD would 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 would consult with the qualified 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 EBMUD's biologist, would be necessary.

With implementation of Section 3.8, Protection of Birds Protected under the Migratory Treaty Act and Roosting Bats, of EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements, which includes provisions for contractor environmental training, preconstruction nesting bird surveys,, monitoring during construction, and delineation of avoidance buffer zones, impacts to migratory birds, including destruction of potential nesting habitat, eggs or occupied nests, direct mortalities of young, and the abandonment of nests with eggs or young birds prior to fledging, would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (Appendix B) lists the applicable standard specifications language.

Operation
The new PP site would include two new trees, as described in the Project Description and illustrated in Section 3.4.1, Aesthetics, of this MND, which could provide suitable nesting bird habitat. Project operations would require no additional vehicle trips relative to existing operation and maintenance activities. As such, operational impacts on nesting birds would be considered less than significant due to no change in available nesting bird habitat and no change in maintenance activities from existing conditions.

<u>Roosting Bat Species</u> (Less than Significant Impact)

Construction
Roosting bat species typically use buildings, trees, bridges, and rock crevices for roost habitat. Roosting habitat is present for bat species at the existing PP site, but not within the new PP site. Bats use different roosts for different purposes, but common to all are an appropriate temperature regime and protection from predators and undesirable weather. During the summer when bats are most active and raising their young, they frequently use one roost during the day where they sleep and keep their young, and another roost at night for resting and digesting food. Day roosts tend to be cryptic and concealed; night roosts are more

open and exposed. Both day roosts and night roosts can be used by multiple species, and fidelity to both kinds of roosts can be very high.

Construction activities may result in the removal or disturbance of hibernation or maternal roost sites, if they are present at the existing PP site, due to noise or human traffic, and constitute a potentially significant impact to bat roosting habitat as it may result in direct mortality and reduction in the reproductive success. Disturbances to roosting habitat of any bat species (not just special-status species bats) are considered potentially significant impacts.

Bats typically forage in and over woodlands, scrub, pasture lands, field margins and water. Suitable foraging habitat is not located directly adjacent to the Project sites, so potential impacts to bat foraging habitats are considered 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 Section 3.8, Protection of Birds Protected under the Migratory Treaty Act and Roosting Bats, of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements which requires protection of roosting bats. Section 3.8, Protection of Birds Protected under the Migratory Treaty Act and Roosting Bats, of this standard construction specification includes the following provisions:

- EBMUD would conduct biological reconnaissance in advance of construction and would conduct biologic monitoring during construction as necessary.
- 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, foremen and project managers and up to 30 minutes for non-supervisory Contractor personnel. The training program would be completed in person or by watching a video, at an EBMUD designated location, conducted by a qualified biologist. The program would 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. The training would include a description of roosting bats, including natural history and habitat, the general protection requirements to be implemented to protect the bat species, and a delineation of the limits of the work areas.
- If construction commences between March 1 and July 31, during the bat maternity period, EBMUD would conduct a preconstruction survey for roosting bats within two weeks prior to construction to ensure that no roosting bats would 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, a qualified biologist provided by EBMUD would 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 would be determined by EBMUD 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 a qualified biologist provided by EBMUD 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.

With implementation of EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements, including Section 3.8, Protection of Birds Protected under the Migratory Treaty Act and Roosting Bats, which addresses impacts to roosting bats and includes provisions for contractor environmental training, preconstruction roosting bat surveys, delineation of avoidance buffer zones, safe eviction of non-breeding bats, and roosting monitoring during construction, the impact related to roosting bats is less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (Appendix B) lists the applicable standard specifications language.

Operation
The new PP would be operated within a newly constructed building and the new PP site would include two new trees, as described in the Project Description and illustrated in Section 3.4.1, Aesthetics, of this MND, which could provide suitable roosting habitat. Project operations require no additional vehicle trips relative to existing operation and maintenance activities. As such, operational impacts on roosting bats would be considered less than significant due to no change in available roosting habitat and no change in maintenance activities from existing conditions.

b. No Impact.

No waters or riparian habitats occur on or directly adjacent to the existing PP site, existing pipeline abandonment disconnection sites, new PP site or new pipeline alignments. Therefore, the Project would not result in any impacts to any waters or riparian habitat identified in local or regional plans, policies, regulations, or by the CDFW or USFWS.

A review of the CNDDB found that three sensitive natural communities occur near the existing PP and new PP sites: Northern Coastal Salt Marsh, Northern Maritime Chaparral and Serpentine Bunchgrass. However, none of these communities has the potential to occur at the Project sites as determined during the field assessment by EBMUD biologists. Therefore, the Project would not result in any impacts to any sensitive natural communities identified in local or regional plans, policies, regulations, or by the CDFW or USFWS.

c. No Impact.

No state or federally protected wetlands occur within the existing PP site, existing pipeline abandonment disconnection sites, new PP site and new pipeline alignments. Therefore, the Project would not result in any impacts on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

d. No Impact.

Wildlife corridors link together areas of suitable wildlife habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. Wildlife movement activities usually fall into one of three movement categories: (1) dispersal (e.g., juvenile animals from natal areas, or individuals extending range distributions); (2) seasonal migration; and (3) movements related to home range activities (foraging for food or water, defending territories, searching for mates, breeding areas, or cover).

The existing PP site, existing pipeline abandonment disconnection sites, new PP site and new pipeline alignments do not function as important regional wildlife corridors or nursery sites because the sites and adjacent areas have been paved and developed. Both the existing PP and new PP sites are surrounded by residential or commercial development and paved streets on all four sides. All new pipeline and existing pipeline abandonment construction would be completed in paved roadways. Therefore, the Project would not result in any impact to the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.

e. Less than Significant Impact.

Although EBMUD is not subject to building and land use zoning ordinances (such as tree ordinances) for projects involving the transmission of water (Government Code Section 53091), EBMUD strives to consider and work with host jurisdictions and neighboring communities during project planning and to conform to local environmental protection policies, where feasible and not contrary to its public purpose and responsibilities.

City of Oakland General Plan

The City's General Plan (City of Oakland, 1996) is a comprehensive, long-range plan for the physical development of the city that identifies goals and policies. The Open Space, Conservation, and Recreation Element of the City's General Plan includes biological objectives and policies to protect the ecology and promote the beneficial uses of Oakland's creeks, to minimize the loss of native plant communities, to conserve wetlands, to protect rare, endangered, and threatened species from the impacts of urbanization, and to sustain a healthy wildlife population within the City. Conservation goals within the General Plan

include maintaining wildlife by preserving habitats and minimizing impacts to creeks, lakes, and nearshore waters.

The Project would not conflict with any of the applicable guiding policies of the City's General Plan listed above. Impact discussion a) above details how incorporation of EBMUD practices and procedures into the Project would ensure that impacts to rare and endangered species would be less than significant.

City of Oakland Tree Ordinance

The City's Tree Preservation and Removal Ordinance (Oakland Municipal Code Chapter 12.36) prohibits the removal of protected trees under certain circumstances. Protected trees include coast live oak and Monterey pine. Tree removal is necessary for Project construction at both sites. At the existing PP site, one non-native tree would be removed to provide access for demolition of the PP building. At the new PP site, one non-native tree would be removed to install a driveway on 96th Avenue for PG&E access to the site. As detailed in the Project Description, the Project would remove one tree and plant two new trees at the new PP site.

For these reasons, any impacts related to potential conflicts with local policies or ordinances regarding biological resources, including tree ordinances, would be less than significant.

f. No Impact.

None of the Project sites are located within any adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan. Thus, construction activities and operation of the PP would not conflict with the provisions of any adopted plan.

REFERENCES

California Department of Fish and Wildlife (CDFW). 2019. California Natural Diversity Database (CNDDB). Biogeographic Data Branch. Queried March 2019.

Mayer, K.E., and W.F. Laudenslayer, Jr. 1988. A Guide to Wildlife Habitats of California. State of California, Resources Agency, Department of Fish and Game. Sacramento, CA. 166 pp.

Natural Resource Conservation Service. 2018. Web Soil Survey website. Accessed March 15, 2019.

U.S. Fish and Wildlife Service (USFWS) 2019. Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the Oakland East USGS 7 ½ minute Quads. Document 150325014650. Database queried March 2019. Sacramento Fish and Wildlife Office. Sacramento, CA.

City of Oakland General Plan. 1996. Open Space, Conservation and Recreation (OSCAR) Element, June 1996.

EBMUD, Standard Construction Specification, Section 01 35 44, Environmental Requirements, March 2, 2018.

EBMUD, Fontaine Pumping Plant Replacement Project Biological Resources Assessment, 2021.

3.4.5 Cultural Resources

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	☐	☐	☒	☐
c) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐

DISCUSSION

Once operational, the Project would not include any ground disturbing activities that would result in the potential inadvertent discovery of archaeological resources or human remains, or the destruction of a unique paleontological resource or site or unique geologic feature. As there would be no ground disturbing activities during the operation of the new PP and pipelines, the following discussion focuses on construction-related impacts.

a. No Impact.

CEQA Guidelines Section 15064.5 requires the lead agency (EBMUD) to consider the effects of a project on historical resources. A historical resource is defined as any building, structure, site, or object listed in or determined to be eligible for listing in the California Register of Historical Resources (California Register) or determined by a lead agency to be significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, or cultural annals of California. This section discusses architectural resources; archaeological resources that are potential historical resources are discussed in Section b) below.

None of the Project sites are listed on the Federal Register of Historic Places or the California Register of Historical Resources. The nearest listed historic resource is the Dunsmuir Hellman Historic Estate at 2960 Peralta Oaks Court in Oakland. However, it is approximately one-half mile away from any of the Project sites and would not be impacted by the Project.

b. Less than Significant Impact.

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

The existing PP site, existing pipeline abandonment disconnection sites, new PP site and new pipeline alignments are all located on developed land that has been subject to prior excavation and disturbance. All work at the existing PP site, existing pipeline abandonment disconnection sites, new PP site and new pipeline alignments occur in areas that have been previously disturbed. No archaeological, paleontological resources or human remains have previously been encountered at any of these sites.

EBMUD maintains an Archaeological Resources Geographic Information System (GIS) database that is updated annually with the results of a records search of the Northwest Information Center (NWIC) of the California Historical Resources Information System. A GIS survey of the existing PP, existing pipeline abandonment disconnection sites, new PP, and new pipeline alignments found no recorded occurrences of archaeological resources within the immediate vicinity (half mile) of any of the Project sites. However, the potential for inadvertent discovery of cultural resources is a potential 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 Section 3.9, Protection of Cultural and Paleontological Resources, of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements. Section 3.9, Protection of Cultural and Paleontological Resources, of 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.
- In the event that a cultural or paleontological 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.

With implementation of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, including Section 3.9, Protection of Cultural and Paleontological Resources, which requires implementation of archaeological resources procedures that address the inadvertent discovery of cultural resources and follows statutory law, the Project's impact related to cultural resources is less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (Appendix B) lists the applicable standard specifications language.

c. Less than Significant Impact.

Based on a review of EBMUD's Archaeological Resources GIS database and because all of excavation would occur within developed land that has been subject to prior excavation and disturbance, there is no indication that any parts of the existing PP, existing pipeline

abandonment disconnection sites, new PP, and new pipeline alignments have been used for human burial purposes in the recent or distant past.

EBMUD has not received any requests from tribes for Project notifications under Public Resource Code (PRC) Section 21080.3.1(b)(1). However, EBMUD contacted the Native American Heritage Commission (NAHC) on August 24, 2020 for a search of the Sacred Lands files for any cultural resources that may be within or adjacent to the Project. EBMUD also requested a list of Native American individuals/organizations that may have knowledge of cultural resources within the Project sites. The NAHC responded on August 26, 2020, noting that no significant resources had been recorded in the Sacred Lands files, and provided a list of seven tribes that are affiliated within the Project sites. EBMUD subsequently sent letters on September 10, 2020 regarding the Project, via certified return receipt, to all of the tribes on the NAHC list. To date, none of the tribes have responded to EBMUD.

Given there is no indication that any parts of the Project have been used for human burial purposes in the past and because the outreach to Native American individuals/organizations did not identify the potential for tribal cultural resources at the Project site, , it is unlikely that human remains would be encountered during construction of the Project. However, the possibility of inadvertent discovery 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 Section 3.9, Protection of Cultural and Paleontological Resources, of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements. Section 3.9, Protection of Cultural and Paleontological Resources, of 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.
- 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.

With implementation of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, including Section 3.9, Protection of Cultural and Paleontological Resources, which requires implementation of archaeological resources procedures that address the inadvertent discovery of cultural resources and follows statutory law, the Project's impact related to cultural resources is less than significant. The EBMUD

Practices and Procedures Monitoring and Reporting Plan (Appendix B) lists the applicable standard specifications language.

REFERENCES

EBMUD, Standard Construction Specification, Section 01 35 44, Environmental Requirements, August 31, 2018.

3.4.6 Energy

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?	☐	☐	☒	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

DISCUSSION

As discussed in Section 3.4.3, Air Quality, of this MND, the CalEEMod version 2016.3.2 was used to quantify construction emissions (Panorama, 2021). The CalEEMod quantifies direct emissions from construction equipment as well as vehicle trips associated with worker commute and material delivery and hauling. Emissions from construction equipment were modeled using construction phase durations, equipment mix and activity, and vehicle trips associated with worker commute, material delivery, and haul trips.

a. Less than Significant Impact.

Construction
Construction of the Project would require the use of machinery and vehicles that would be used for demolition, grading, PP construction, open trench pipeline construction, and pipeline abandonments and would require the use of energy, including gasoline, diesel, and motor oil. During these activities, using emissions estimated by CalEEMod as an indicator of fuel consumption, fuel for construction worker commute trips and material hauling trips to and from the site would be minor in comparison to the fuel used by construction equipment. Construction would also indirectly use energy for production of construction materials.

While the precise amount of construction energy consumption is uncertain, use of these 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; EBMUD would store as much excavated soil on site as possible and reuse the soils as backfill during grading of the new PP site, 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 Section 3.4.A, Air Quality and Emissions Control, of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements. Section 3.4.A, Air

Quality and Emissions Control, of Standard Construction Specification 01 35 44 requires a variety of controls 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.

With implementation of EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements, Section 3.4.A, Air Quality and Emissions Control, which includes best management practices (BMPs) to ensure the efficient use of construction-related fuels, the Project construction impacts related to energy use and impacts on energy resources would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (Appendix B) lists the applicable standard specifications language.

Operation
Operational energy use would be similar to or less than existing operational energy use because older pumps and motors would be replaced with newer and more efficient pumps and motors, and the number of trips to the new PP site by maintenance workers would not increase over trips to the existing PP site. The Project would not increase operational energy consumption.

b. No Impact.

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 wise energy use, and generates energy through hydropower, solar power, and biogas production at its wastewater treatment plants. However, 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 controls to reduce the inefficient use of fuels. Therefore, there would be no impact associated with conflicts with energy plans and policies related to renewable energy or energy efficiency.

REFERENCES

EBMUD, Standard Construction Specification 01 35 44, Environmental Requirements. August 31, 2018.

Panorama, Fontaine Pumping Plant Replacement Project Air Quality Technical Report, September 2021.

3.4.7 Geology and Soils

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

DISCUSSION

This section describes the physical and regulatory setting for geologic, soil, seismic, and paleontological resources and identifies and evaluates potential impacts that could result from construction and operation of the Project.

Information for the assessment of geology, soils, and seismicity is based on a review of literature research (geologic, seismic, and soils reports and maps), information from geologic and seismic databases, and the City's General Plan. This information was used to identify the potential impacts from Project construction and operation on workers, the public, or the environment. The Project would be regulated by applicable federal, state, and local laws and regulations which is

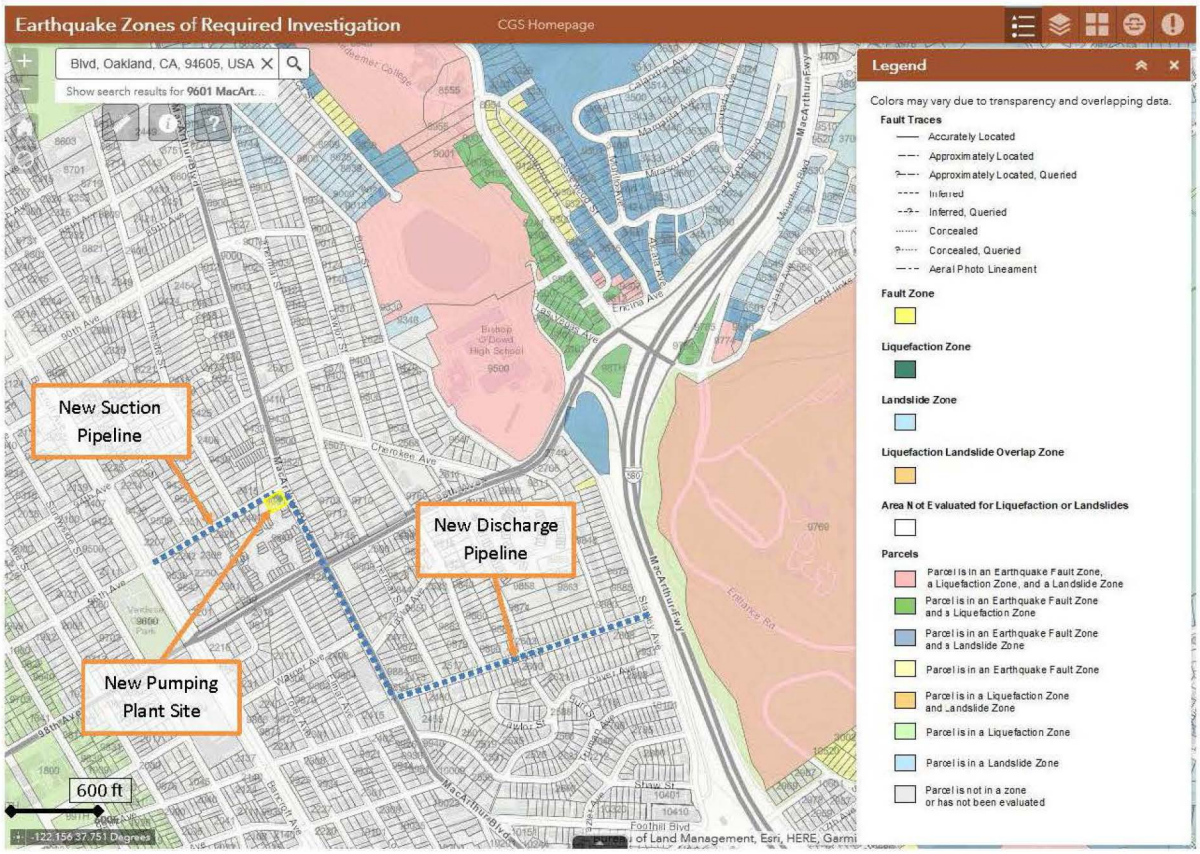
reflected in the analysis of geologic, soils, seismic, and paleontological impacts. The analysis of geologic, soils, seismic, and paleontological impacts in this section rely on EBMUD incorporating into its facility designs the engineering recommendations provided by a geotechnical investigation.

a. (i. through iv.) Less than Significant Impact.

Seismic-related ground shaking, and the hazardous conditions created by it (e.g., fault rupture, liquefaction, lateral spreading, and landslides) can present a serious risk to people and structures. The Hayward Fault Zone extends northwest approximately 55 miles from San Jose to Point Pinole and is a right-lateral, strike-slip fault designated as an Alquist-Priolo Earthquake Fault Zone. The fault is active, producing large historic earthquakes, fault creep, and abundant geomorphic evidence of fault rupture. The Hayward Fault Zone has a 14.11 percent probability of generating an earthquake with a magnitude equal to or greater than 6.7 Mw[5] over the next 30 years (WGCEP, 2015) and very strong to violent ground shaking is expected. Ground shaking of this magnitude is known to trigger secondary hazardous conditions (e.g., fault rupture, liquefaction, lateral spreading, and landslides), and could result in potentially significant impacts on the Project site.

New PP Construction and Operation
As shown in Figure 3.4.7-1, the new PP site is not located within earthquake fault, landslide, or liquefaction zones. However, ground shaking is an unavoidable hazard for the new PP because it is located approximately one-half mile from the active Hayward Fault Zone and is in a seismically active region.

[5] The moment magnitude (Mw) of an earthquake is the measure of the total energy expended during an earthquake; it is used here in place of the local magnitude (ML) (i.e., the Richter magnitude scale), as local magnitude is an inaccurate measure of large earthquakes (USGS, 2018).



New PP Site and New Pipelines
Figure 3.4.7-1

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 Pumping Plant Design Guide, which details minimum requirements that apply to the design and construction of new PPs, and EBMUD Engineering Standard Practice 550.1, Seismic Design Requirements, which includes requirements for structures to withstand seismic hazards. EBMUD's Pumping Plant Design Guide requires the completion of a geotechnical investigation during design and incorporation of geotechnical design recommendations in project plans and specifications. EBMUD Engineering Standard Practice 550.1, Seismic Design Requirements, dictate basic requirements for structures and design standards for structures to withstand seismic hazards including compliance with applicable seismic design standards found in the latest editions of the California Building Code (CBC) and American Society of Civil Engineers (ASCE) 7 (ASCE-7 Minimum Design Loads for Buildings and Other Structures).

With implementation of EBMUD standard practices, including EBMUD's Pumping Plant Design Guide, EBMUD Engineering Standard Practice 550.1, Seismic Design Requirements, which include the latest applicable CBC and ASCE seismic codes, and because the new PP site is not within mapped earthquake fault, landslide, or liquefaction zones, the potential for exposure of people or structures to potential substantial adverse effects during construction or operation, including the risk of loss, injury, or death involving rupture of a known earthquake

fault, strong seismic ground shaking, liquefaction, or landslides is less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (Appendix B) lists the applicable standard practices language.

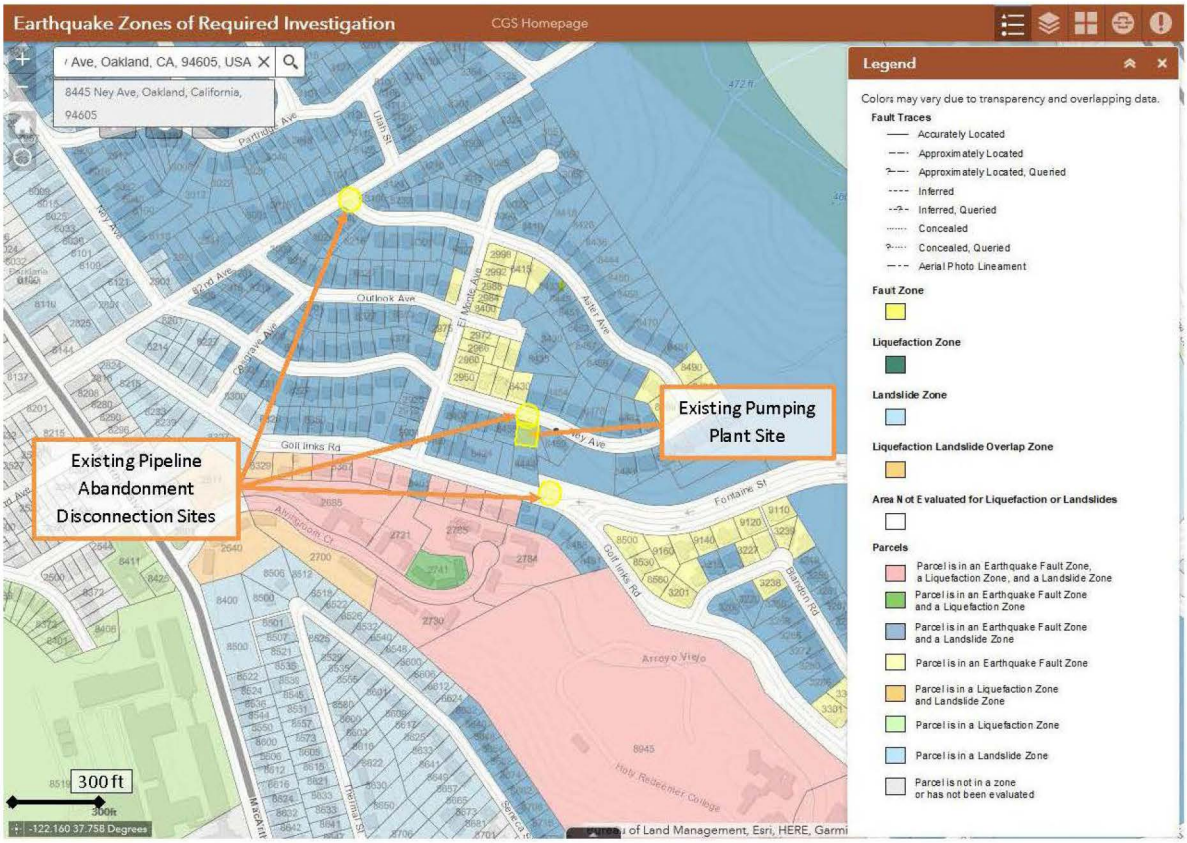
New Pipeline Construction and Operation
As shown in Figure 3.4.7-1, the new pipeline is not located within earthquake fault, landslide, or liquefaction zones. However, ground shaking is an unavoidable hazard for the new pipeline because it is located approximately one-half mile from the active Hayward Fault Zone and is in a seismically active region.

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 512.1, Water Main and Services Design Criteria, which establishes basic criteria for the design of water pipelines and establishes minimum requirements for pipeline construction materials, and EBMUD Engineering Standard Practice 550.1, Seismic Design Requirements, which 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 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 pipelines cross from one soil condition to another. Engineering Standard Practice 550.1, Seismic Design Requirements, also requires the use of steel pipe with restrained joints or the equivalent to address seismic hazards. Engineering Standard Practice 550.1, Seismic Design Requirements, is based on Guidelines for the Seismic Design of Oil and Gas Pipeline Systems prepared by the ASCE Committee on Gas and Liquid Fuel Lifelines in 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 pipeline, including design for the appropriate wall thickness, external loadings, pipeline supports, pipeline joints, fittings and appurtenances, corrosion control, and protective coatings and linings.

With implementation of EBMUD standard practices, including EBMUD Engineering Standard Practice 512.1, Water Main and Services Design Criteria, and EBMUD Engineering Standard Practice 550.1, Seismic Design Requirements, which include practices to reduce the risk of seismic damage to pipelines, and because the new pipelines would be designed to meet the latest AWWA requirements to resist strong ground motions, and the new pipeline alignment is not within mapped earthquake fault, landslide, or liquefaction zones and the Project would be built in compliance with EBMUD standard practices, the potential for exposure of people or structures to potential substantial adverse effects during construction or operation, including the risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking, liquefaction, or landslides is less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (Appendix B) lists the applicable standard practices language.

Existing Pipeline Abandonment Construction and Operation

As shown in Figure 3.4.7-2, the existing pipeline abandonment disconnection sites are located within the Hayward Fault Zone. Abandonment of existing pipeline would involve only minor modifications to existing infrastructure, which would not affect the existing infrastructure's response to fault rupture or ground shaking. Therefore, there would be no impact associated with abandonment activities.



Existing PP and Existing Pipeline Abandonment Disconnection Sites

Figure 3.4.7-2

Existing PP Construction and Operation

As shown in Figure 3.4.7-2, the existing PP demolition activities would occur within earthquake fault zones and areas prone to landslides, which could result in significant impacts related to seismic-induced fault rupture or landslides. The existing PP is situated within the "Few Landslides" zone based on the 1997 U. S. Geological Survey map, *Summary Distribution of Slides and Earth Flows in Alameda County, California.* Factors determining lateral spreading potential are soil type, the level and duration of seismic ground motions, the type and consistency of soils, and the depth to groundwater. As detailed in the Project Description, EBMUD would determine during the design phase if any portions of the existing PP building can be left in place to act as a soil retaining structure. However, EBMUD may determine that the entire existing PP building would need removal in which case a retaining wall would need to be designed and installed. Also as described in the

Project Description, if a retaining wall is necessary EBMUD would implement engineering design recommendations developed from a site-specific geotechnical investigation.

With implementation of the Project, including engineering design recommendations developed from a site-specific geotechnical investigation as detailed in the Project Description, potentially significant impacts resulting from seismic-induced fault rupture or landslides would be reduced to less than significant.

b. Less than Significant Impact.

Construction
The excavation and grading activities that are planned during demolition and construction of the existing PP and new PP, respectively, would increase exposure of topsoil to erosion. Storm weather (e.g., wind and rain) could also result in soil erosion.

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, and Section 1.3.A, Storm Water Management, of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, which includes provisions for preventing soil erosion and loss of soil during construction, including the diversion of surface waters and maintenance of the construction site to minimize erosion and loss of soil, and requires contractors to submit a Storm Water Pollution Prevention Plan (SWPPP) to EBMUD that describes requirements to prevent the run-off of polluted stormwater from the construction site even if the Project does not require a Construction General Permit (CGP) and requires that the SWPPP shall conform to all State Water Resources Control Board (SWRCB) requirements for a CGP SWPPP. Additionally, in compliance with EBMUD's Pumping Plant Design Guide and as described in the Project Description, a design-level geotechnical investigation would be conducted subsequent to the new PP construction and existing PP demolition, to confirm the characteristics of the subsurface and to identify any soil control requirements. EBMUD would incorporate into the Project design the recommendations outlined in the geotechnical investigation.

With implementation of EBMUD's Standard Construction Specification 01 35 44, including Section 1.1.B, Site Activities, and Section 1.3.A, Storm Water Management, which includes erosion control requirements that would reduce the potential for construction related soil erosion and loss of topsoil by including provisions for the control of runoff, including diversion and drainage of surface waters from construction sites, and submittal of a SWPPP, and by implementing the recommendations of the design-level geotechnical investigation, the impacts related to soil erosion and loss of topsoil would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (Appendix B) lists the applicable standard specifications language.

Operation
The existing pipeline abandonment disconnection sites and new pipeline alignments would be paved following completion of construction and therefore have no impact related to soil erosion or loss of topsoil during operation. The new PP site would be paved and landscaped

after construction and therefore have no impact related to soil erosion or loss of topsoil during operation.

After the existing PP is demolished, the soil underneath the existing PP structure would be exposed and therefore there is a potential for soil erosion during operation. As detailed in the Project Description, the Project design for the existing PP site would include a subdrain that would collect and remove water from the site which would avoid surface flows contributing to soil erosion. Additionally, 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 3.3.B, Dust Control, of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, which requires planting as soon as possible vegetative ground cover (e.g., fast-germinating native grass seed, also known as "hydroseed") in disturbed areas as soon as possible and watered appropriately until vegetation is established.

Because exposed soils as part of the existing pipeline abandonment, new pipeline, and new PP site construction would be paved and landscaped, and with implementation of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, including Section 3.3.B, Dust Control, which requires planting vegetative ground cover in disturbed areas, and of design features at the existing PP that minimize surface flows leaving the site including a subdrain, the impacts related to soil erosion and loss of topsoil during operation would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (Appendix B) lists the applicable standard practices language.

c. Less than Significant Impact.

Construction and Operation

Landslides:

As shown in Figure 3.4.7-2, the existing PP site and existing pipeline abandonment disconnection sites are located within earthquake-induced landslide zones. The new PP site and new pipeline alignments are not located within earthquake-induced landslide zones. Landslides can also be triggered by the addition of water to potentially unstable soils within a landslide zone.

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 550.1, Seismic Design Requirements, which specifies minimum design requirements to follow in the design of drinking water PPs and pipelines, and EBMUD's Pumping Plant Design Guide and Project Description, which require that the Project conduct geotechnical investigations to identify the potential for seismic hazards. All recommendations in the geotechnical investigations would be incorporated into the Project design. Also as detailed in the Project Description, the Project design for the existing PP site would include a subdrain that would collect and remove water from the site preventing water from collecting in the soils and triggering a landslide.

Because the existing PP site would include a subdrain and with implementation of EBMUD Engineering Standard Practice 550.1, Seismic Design Requirements, and EBMUD's Pumping Plant Design Guide and Project Description, which require geotechnical investigations to identify potential seismic hazards that would be incorporated in the Project design, and because EBMUD follows applicable seismic design standards, potentially significant impacts associated with landslides would be reduced to less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (Appendix B) lists the applicable standard practices language.

Liquefaction and Lateral Spreading:
As shown in Figures 3.4.7-1 and 3.4.7-2, the new pipeline alignment, new PP, and existing PP sites are not located within a Liquefaction Zone, however, the existing pipeline abandonment disconnection site in Golf Links Road is adjacent to a Liquefaction Zone. Abandonment of existing pipeline would involve only minor modifications to existing infrastructure, which would not affect the existing infrastructure's response to liquefaction or lateral spreading.

For the pipeline abandonment disconnection site that is located adjacent to a Liquefaction Zone, operation of continuous vibratory equipment (such as a compaction roller) during paving has the potential to induce liquefaction and/or differential settlement in sandy soils, depending on the type, magnitude, and duration of vibration. The existing pipeline abandonment disconnection site in Golf Links Road is located within a public street which is a previously disturbed area subject to years of vibration from heavy vehicular traffic and previous construction.

Because none of the Project sites are in a Liquefaction Zone and because vibration activities located adjacent to a Liquefaction Zone are within a previously disturbed area, there is no impact.

Subsidence and Soil Collapse:
Soils that are susceptible to subsidence or collapse are typically associated with projects that include the injection or extraction of groundwater and/or oil or are in Karst terrain (carbonate rock terrains where dissolution cavities occur). As described in Section 3.4.10, Hydrology and Water Quality, the Project would not change the existing groundwater levels. Impacts associated with dewatering-induced settlement would therefore be less than significant.

Unsupported excavations into soft or loose soils can cause soil collapse. 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 Section 1.3.K, Excavation Safety Plan, of EBMUD Standard Construction Specification 01 35 24, Project Safety Requirements, which requires the Contactor submit to, and receive approval by, EBMUD an excavation safety plan showing the details of the design of shoring, bracing, sloping or other provisions to be made for worker protection during such excavation meeting the requirements of the Construction Safety Orders, Title 8, California Code of Regulations.

With implementation EBMUD's Standard Construction Specification 01 35 24, Project Safety Requirements, including Section 1.3.K, Excavation Safety Plan, which includes safety requirements such as details of the design of excavation shoring, bracing, sloping or other provisions to be made for worker protection from excavation soil collapse, the risk of soil collapse during excavations would be reduced to less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (Appendix B) lists the applicable standard specifications language.

d. Less than Significant Impact.

Expansive soils are soils that possess a "shrink-swell" characteristic, also referred to as linear extensibility. Shrink-swell is the cyclic change in volume (expansion and contraction) that occurs in fine-grained clay sediments from the process of wetting and drying; the volume change is reported as a percent change for the whole soil. Changes in soil moisture can result from a variety of sources, including rainfall, landscape irrigation, utility leakage, roof drainage, etc.

Construction and Operation
The Natural Resources Conservation Service (NRCS) Web Soil Survey has no available data on the expansiveness of the soil for portions of the new pipeline alignment and the existing pipeline abandonment disconnection location in Golf Links Road. However, the new PP site, remaining portions of the new pipeline alignment, existing PP site, and existing pipeline abandonment disconnection sites in Ney Avenue and 82nd Avenue/Aster Avenue are located in soils with high shrink-swell potential, which would result in a potentially significant impact due to the effect those soils could have on the stability and longevity of the retaining wall at the existing PP site, the new PP building at the new PP site, and new pipelines.

Abandonment of existing pipelines would involve only minor modifications to existing infrastructure, which would not affect the existing infrastructure's response to expansive soils. Therefore, there would be no impact associated with abandonment activities.

As described in the Project Description, during the Project design phase, EBMUD would perform a design-level geotechnical investigation which would identify the potential for expansive soils at the new PP site and existing PP site. Any recommendations in the geotechnical investigation would be incorporated into the Project design. In addition, 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 EBMUD's Engineering Standard Practices 512.1, Water Main and Services Design Criteria, and 550.1, Seismic Design Requirements, which specifies minimum design requirements to follow in the design of PPs and pipelines. All facilities would be designed to withstand the effects of expansive soils and would follow recommendations of the geotechnical investigation to ensure that engineered structures and pipelines can withstand expansive soils.

With implementation of EBMUD Engineering Standard Practices 512.1, Water Main and Services Design Criteria, and 550.1, Seismic Design Requirements, which require design of PPs and pipelines to withstand the effects of expansive soils, and by following

recommendations of the geotechnical investigation to withstand effects of expansive soils, impacts of the Project associated with soil expansion would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (Appendix B) lists the applicable standard practices language.

e. No Impact.

Wastewater generation or disposal is not a part of the Project; therefore, soils would not be used for the treatment or disposal of wastewater during construction or operation. During construction, temporary self-contained toilets and hand washing facilities would be located on site. Any wastewater generated by these facilities would be hauled off site for treatment and disposal. Therefore, there would be no impacts associated with capability of soils to dispose of wastewater.

f. Less than Significant Impact.

Construction
The Project would be constructed on highly disturbed urban land at the existing PP site and new PP site, and in existing roadways at the existing pipeline abandonment disconnection sites and new pipeline alignments. Because these areas have been previously disturbed, soils in these areas are not expected to contain fossils. In the unlikely event that fossils are encountered during construction, impacts could be potentially 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 Section 3.9, Protections of Cultural and Paleontological Resources, of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, which requires that staff be trained to recognize paleontological resources and that if resources are encountered, construction must be stopped so that paleontological resources can be evaluated and protected.

With implementation of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, including Section 3.9, Protection of Cultural and Paleontological Resources, which requires implementation of procedures that address the inadvertent discovery of paleontological resources and ensures compliance with legal requirements regarding the protection of such resources, the Project's construction impacts related to paleontological resources are less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (Appendix B) lists the applicable standard specifications language.

Operation
No ground disturbing activities would occur during operation of the new PP and pipelines.

REFERENCES

CGS (California Geological Survey), Earthquake Zones of Required Investigation

Oakland East Quadrangle. Map. Scale 1:24,000, 2003.

CGS, Seismic Hazard Zone Report 080. Seismic Hazard Zone Report for the Oakland East 7.5-Minute Quadrangle, Alameda County, California, 2003.

CGS, Guidelines for Evaluating and Mitigating Seismic Hazards in California, Special Publication 117A, 2008.

CGS, Fault Activity Map of California. Map. Scale 1:175,000, 2010.

CGS, Special Publication 42: Earthquake Fault Zones – A Guide for Government Agencies, Property Owners/Developers, and Geoscience Practitioners for Assessing Fault Rupture Hazards in California. Revised 2018.

City of Oakland, City of Oakland General Plan, Safety Element Maps, November 2004. Available at: http:/www2.oaklandnet.com/oakca1/groups/ceda/documents/webcontent/oak035222.pdf.

EBMUD. Engineering Standard Practice 512.1, Water Main and Services Design Criteria, October 2006.

EBMUD. Engineering Standard Practice 550.1, Seismic Design Requirements, February 2018.

EBMUD. Standard Construction Specification 01 35 24, Project Safety Requirements, October 2020.

EBMUD. Standard Construction Specification 01 35 44, Environmental Requirements, August 2018.

EBMUD. Pumping Plant Design Guide. December 2017.

NRCS (Natural Resources Conservation Service), Linear Extensibility—Alameda County, California Western Part. Map. Scale 1:4,110, 2017.

USGS (United States Geological Survey), Geologic Map and Map Database of the Oakland Metropolitan Area, Alameda, Contra Costa, and San Francisco Counties, California. Map. Scale 1:50,000, 2000.

WGCEP (Working Group on California Earthquake Probabilities), UCERF3: A new earthquake forecast for California's complex fault system: U.S. Geological Survey Fact Sheet 2015–3009, 2015.

3.4.8 Greenhouse Gas Emissions

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

DISCUSSION

The GHG emissions impact analysis is based upon the Fontaine Pumping Plant Replacement Project Greenhouse Gas Technical Report (Panorama, 2021) that includes a review of existing greenhouse gas emissions information and research, and analysis completed for the existing PP site, existing pipeline abandonment disconnection sites, new PP site and new pipeline alignments. The greenhouse gas emissions impact analysis considers both operational and construction impacts associated with the Project.

GHGs are gases that trap heat in the atmosphere and include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and fluorinated gases, such as hydrofluorocarbons.
Some gases are more effective than others at making the planet warmer. Therefore, each GHG has been assigned a global warming potential (GWP) to reflect how long it remains in the atmosphere, on average, and how strongly it absorbs energy. Gases with a higher GWP absorb more energy, per pound, than gases with a lower GWP. GHGs with high GWPs, which are known as super GHGs, include CH_4 and N_2O. In GHG emission inventories, the weight of each gas is multiplied by its GWP and is measured in units of equivalent CO_2 (CO_2e).

An expanding body of scientific research supports the theory that global warming is currently affecting changes in weather patterns, average sea level, ocean acidification, chemical reaction rates, and precipitation rates, and that it would increasingly do so in the future. The climate and several naturally occurring resources within California could be adversely affected by the global warming trend. Increased precipitation and sea level rise could increase coastal flooding, saltwater intrusion, and degradation of wetlands. Mass migration and/or loss of plant and animal species could also occur. Potential effects of global climate change that could adversely affect human health include more extreme heat waves and heat-related stress; an increase in climate-sensitive diseases; more frequent and intense natural disasters such as flooding, hurricanes and drought; and increased levels of air pollution.

a. Less than Significant Impact.

BAAQMD identifies sources of information on potential thresholds of significance and mitigation strategies for operational GHG emissions from land-use development projects in its CEQA Air Quality Guidelines. The BAAQMD CEQA Guidelines also outline a methodology for estimating GHG emissions. 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 on-site combustion of energy, such as natural gas used in furnaces and boilers, emissions from industrial processes, and fuel combustion from mobile sources. Indirect emissions are emissions produced off site from energy production and water conveyance due to a project's energy use and water consumption. BAAQMD has provided guidance on detailed methods for modeling GHG emissions from proposed projects (BAAQMD, 2017).

The BAAQMD CEQA Guidelines include significance thresholds for land use development projects and other projects with stationary sources that generate GHGs. BAAQMD's GHG threshold is defined in terms of CO_2e, the metric that accounts for the emissions from various GHGs based on their GWP. If annual emissions of operational-related GHGs exceed these threshold levels, the proposed Project would result in a cumulatively considerable contribution of GHG emissions and a cumulatively significant impact to global climate change. However, for this Project, construction activities would be the primary source of GHG emissions. Once operational, the Project would not include any direct stationary sources of emissions on the site. GHG emissions from worker trips for maintenance activities as well as indirect emissions from electricity use for operation and maintenance would be similar to existing conditions and is expected to result in no net change to operational emissions. The BAAQMD CEQA Guidelines do not include significance thresholds for construction-related GHG emissions but recommend that construction-related GHG emissions be quantified and disclosed.

Construction

GHG emissions associated with construction of the Project would occur over the short-term from construction activities, consisting primarily of emissions from equipment exhaust and worker and vendor trips. Although BAAQMD has not adopted thresholds of significance for construction related GHG emissions, BAAQMD recommends quantifying emissions and disclosing that GHG emissions would occur during construction. BAAQMD also encourages the incorporation of BMPs to reduce GHG emissions during construction where feasible and applicable.

Both the CalEEMod version 2016.3.2 and the Sacramento Air Quality Management District Road Construction Emissions Model (RCEM) version 9.0 were used to estimate emissions. The areas of each construction site and other Project-specific information were input into the models to estimate GHG emissions from construction of the Project. GHG emissions associated with construction are estimated to be 305 Metric Tons (MT) of CO_2e as shown in Table 3.4.8-1. These are the emissions from construction and demolition equipment, vendor and hauling truck trips, and worker trips.

Table 3.4.8-1 Estimated GHG Emissions From Construction

Construction Phase	CO_2	CH_4	N_2O	CO_2e
	Metric Tons			
New PP Facility	166	0	0	168
New Pipeline Construction	65	0	0	66
Existing PP Demolition & Pipeline Abandonment	34	0	0	34
Vehicle Emissions	37	0	0	38
Total	**302**	**0**	**0**	**305**

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 3.4.A, Air Quality and Emissions Control, of EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements, which requires EBMUD and its Contractor to implement air emission control BMPs to minimize short-term construction diesel exhaust emissions, including GHG emission controls that would reduce GHG emissions from fuel combustion by maintaining equipment tire pressure, maintaining construction equipment according to manufacturer's specifications, and requiring BACT on all equipment.

With implementation of EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements, including Section 3.4.A, Air Quality and Emissions Control, which requires BMPs to reduce GHG emissions, the Project's construction impacts related to GHG emissions would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (Appendix B) lists the applicable standard specifications language.

Operation

Operational GHG emissions of the new PP and pipelines are associated with worker trips to conduct routine inspection and maintenance activities, and energy usage. The new PP and pipelines would operate in a similar manner as the existing PP and pipelines, which are currently operated and monitored remotely. Operation of the new PP and pipelines would not include any new sources of GHG emissions when compared to operation of the existing PP and pipelines. Worker vehicle trips for operation and maintenance of the new PP and pipelines would be similar to existing conditions, with approximately four one-way trips (two roundtrips) per month. Indirect operational GHG emissions would be associated with emissions from electricity generation for line power provided by the PG&E to Project facilities. However, electricity use associated with operation of the new PP and pipelines would be similar to that of the existing PP and pipelines; therefore, the Project would not result in an increase in indirect GHG emissions. For these reasons, the operation of the Project would not generate GHG emissions, either directly or indirectly, that would have a significant impact on the environment.

b. Less than Significant Impact.

To determine whether the Project would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions, Project GHG emissions are analyzed in the context of the GHG reduction goals of the Global Warming Solutions Act of 2006, California's 2017 Climate Change Scoping Plan Update, the Bay Area 2017 Clean Air Plan (CAP), and the City's Energy and Climate Action Plan, which are discussed below.

Global Warming Solutions Act of 2006 (Assembly Bill 32)
In September 2006, the State legislature passed, and Governor Schwarzenegger signed, Assembly Bill (AB) 32 (Chapter 488, Statutes of 2006), the Global Warming Solutions Act of 2006, which set the 2020 GHG emissions reduction goal into law. AB 32 directed the California Air Resources Board (CARB) to begin developing discrete early actions to reduce GHG emissions while also preparing the Climate Change Scoping Plan, which outlines a framework of practices that would eventually be adopted and implemented to reach AB 32 goals (CARB, 2017).

2017 Climate Change Scoping Plan Update
In April 2015, Governor Brown signed Executive Order (EO) B-30-15, which extended the goals of AB 32, setting a GHG emissions target at 40 percent of 1990 levels by 2030. On September 8, 2016, Governor Brown signed SB 32, which legislatively established the GHG reduction target of 40 percent of 1990 levels by 2030. In November 2017, CARB issued *California's 2017 Climate Change Scoping Plan* (2017 Scoping Plan Update, CARB, 2017)to reflect the 2030 target set by EO B-30-15 and codified by SB 32.

Bay Area 2017 Clean Air Plan
BAAQMD and other agencies prepare clean air plans as required under the State and Federal Clean Air Acts. The Bay Area 2017 CAP, entitled Spare the Air/Cool the Climate, is a blueprint for BAAQMD's efforts to reduce air pollution and protect public health and the global climate. Consistent with the GHG reduction targets adopted by the state of California, the Bay Area 2017 CAP lays the groundwork for the BAAQMD's long-term effort to reduce Bay Area GHG emissions 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050 (BAAQMD, 2017).

Energy and Climate Action Plan
The City prepared an Energy and Climate Action Plan (ECAP) to reduce citywide GHG emissions. The City approved a goal of 36 percent reduction of 2005 emission levels in GHG emissions by 2020 and 83 percent by 2050. A variety of priority actions are identified within the City's ECAP to achieve emissions reductions in the transportation, residential, and commercial sector.

Construction
Construction of the Project would involve operation of diesel-fueled off-road construction equipment and on-road vehicles associated with worker commute, material delivery, and hauling that would directly generate GHG emissions. Actions in the 2017 Scoping Plan

Update pertinent to Project construction relate to emission controls imposed in the future, including future implementation of 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. These actions would be implemented by CARB as new standards and policies and the BAAQMD through the implementation of its Bay Area 2017 CAP. Heavy-duty vehicles used during Project construction would comply with all applicable emission standards.

Neither the City nor BAAQMD have adopted thresholds of significance for construction related GHG emissions, though BAAQMD encourages the incorporation of BMPs to reduce GHG emissions during construction where feasible and applicable. Both BAAQMD's Bay Area 2017 CAP and the City's ECAP identify 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 Bay Area 2017 CAP and the City's ECAP, the City implements its waste reduction goal through its Construction and Demolition Debris Recycling Ordinance.

Concrete from the demolition of the existing PP would be recycled and reused on site and excavated soil on the new PP site would be reused on site to the extent feasible to minimize off haul and import, as described in Section 2.5.5, New PP Construction, and 2.5.7, Existing PP Demolition and Pipeline Abandonment, of Chapter 2.0, Project Description. 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 3.4.A, Air Quality and Emissions Control, of EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements which requires construction crews use electrically powered construction equipment whenever available and feasible, and recycling demolition debris for reuse to the extent feasible. Therefore, the Project would be consistent with the goals in the Bay Area 2017 CAP and the City's ECAP and construction related GHG emissions would not conflict with any plans, policies, or regulations adopted for the purpose of reducing GHG emissions.

With implementation of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, including Section 3.4.A, Air Quality and Emissions Control, which includes provisions to ensure that construction diesel trucks and off-road equipment would comply with the latest vehicle emission standards established by CARB pursuant to the 2017 Scoping Plan Update and recycling demolition debris and excavated soil for reuse, construction of the Project would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases and the impact would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (Appendix B) lists the applicable standard specifications language

Operation

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 (CCMRP). EBMUD also prepared an Action Plan that provides guidance to inform EBMUD of decisions regarding water supply, water quality, and infrastructure planning. EBMUD's goal is to reduce GHG emissions 50 percent by 2040 (as compared to baseline GHG emissions in year 2000). In 2013, GHG emissions generated by EBMUD were 31,244 MT CO_2e which was 31 percent below 2000 GHG emission levels. EBMUD tracks GHG emissions per the California Climate Action Registry protocols (EBMUD, 2014).

According to EBMUD's 2014 CCMRP, the majority of EBMUD's total operational GHG emissions are indirect GHG emissions associated with the use of electrical energy, and 22 percent of EBMUD's total GHG emissions are direct GHG emissions associated with fleet operations (vehicles and portable equipment). The new PP and pipelines would operate in a similar manner as the existing PP and pipelines, which are currently operated and monitored remotely. Worker vehicle trips for operation and maintenance would be similar to existing conditions, with approximately four one-way trips (two roundtrips) per month. GHG emissions associated with maintenance would be similar to existing levels with no substantial increase in direct operational GHG emissions resulting from the Project. EBMUD's heavy-duty maintenance vehicles would comply with the latest vehicle emission standards established by CARB pursuant to the 2017 Scoping Plan Update. Therefore, the Project's direct operational GHG emissions would not conflict with 2017 Scoping Plan Update actions or the Bay Area 2017 CAP.

With respect to indirect operational GHG emissions associated with electrical energy use, the Project would not increase electricity demand over existing conditions. However, as set forth in EBMUD Policy 7.07, Energy, (Energy Policy) adopted by EBMUD's Board of Directors, EBMUD's goal is to be carbon free for indirect emissions and achieve a 50 percent reduction in direct emissions compared to 2000 levels by 2040 (EBMUD, 2018). Through the increased use of renewable diesel, purchase of electricity from greener and more sustainable sources, and reduced raw water pumping, EBMUD has reduced total GHG emissions since 2000. To meet EBMUD's indirect emissions GHG goal, the Energy Policy requires EBMUD to focus on energy conservation, development of economical renewable energy projects, GHG offset projects, and the purchase of renewable energy credits(EBMUD, 2018). Due to implementation of the Energy Policy, EBMUD consistently meets its annual indirect GHG emissions reduction goals and would continue to comply with the Energy Policy, ensuring that indirect emissions associated with the Project would be minimized. Therefore, the Project's indirect operational GHG emissions would not conflict with the state's 2017 Scoping Plan Update, Bay Area 2017 CAP, or the BAAQMD CEQA significance thresholds and the impact would be less than significant.

REFERENCES

BAAQMD. (2017, March). *Greenhouse Gas Emission Estimates and Draft Forecasts*. Retrieved from https://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/ghg_emissions_and_forecasts_draft.pdf?la=en.

BAAQMD. (2017, April 19). Spare the Air, Cool the Climate, A Blueprint for Clean Air and Climate Protection in the Bay Area Final 2017 Clean Air Plan. Retrieved February 13, 2020, from https://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en.

CARB. (2017, November). *California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Targets.* Retrieved from California Air Resources Board: https://ww2.arb.ca.gov/sites/default/files/classic//cc/scopingplan/scoping_plan_2017.pdf.

EBMUD, 2014 Climate Change Monitoring and Response Plan, September 2014.

EBMUD, EBMUD Policy 7.07, Energy, June 2018.

EBMUD, Standard Construction Specification 01 35 44, Environmental Requirements, March 2018.

Panorama, Fontaine Pumping Plant Replacement Project Greenhouse Gas Technical Report, September 2021.

3.4.9 Hazards and Hazardous Materials

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

DISCUSSION

The hazards and hazardous materials impact analysis is based upon the Fontaine Pumping Plant Replacement Project Hazards and Hazardous Materials Technical Report (Panorama, 2021) that includes a review of existing hazardous material information and research completed for the existing PP site, existing pipeline abandonment disconnection sites, new PP site and new pipeline alignments.

For the purposes of this section, the term hazardous material refers to both hazardous materials and hazardous wastes. The California Health and Safety Code Section 25501(n) define 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 is 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. EPA and/or 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.

a. and b. Less than Significant Impact.

Construction

Routine Transport, Use, Disposal, and Accidental Release of Hazardous Materials

Project construction would require the use of hazardous materials such as fuels, lubricants, paints, and solvents for motorized heavy equipment, such as excavators, bulldozers, and backhoes. Minor maintenance activities and refueling of equipment and vehicles from mobile or stationary fuel supply sources could occur at the Project work areas during construction. If not properly managed, the routine transport, use, and disposal of hazardous materials could pose a threat to human health or the environment. For example, hazardous materials have the potential to be released or spilled accidentally during maintenance, refueling, or servicing of equipment and vehicles. Improperly disposed of, spilled, or leaking hazardous materials could create a significant hazard to workers, the public, or the environment.

Hazardous materials handling, disposal, and transport must occur in accordance with applicable federal, state, and local regulations. Hazardous materials must be transported to and from the Project sites in accordance with Resource Conservation and Recovery Act (RCRA) and U.S. Department of Transportation (U.S. DOT) regulations, managed in accordance with the Alameda County Department of Environmental Health's Certified Unified Program Agency (CUPA) programs, and disposed of in accordance with RCRA and the California Code of Regulations at a facility that is permitted to accept the waste. Workers handling hazardous materials are also required to adhere to federal Occupational Health and Safety Administration (OSHA) and California Division of Occupational Safety and Health Administration (CAL OSHA) health and safety requirements.

In addition to complying with federal, state, and local 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 Section 1.3.A.2, Storm Water Pollution Prevention Plan, Section 1.3.C, Construction and Demolition Waste Disposal Plan, and Section 1.3.D, Spill Prevention and Response Plan, of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, Section 1.3.B, Project Health and Safety Plan, of EBMUD's Standard Construction Specification 01 35 24, Project Safety Requirements, and EBMUD Procedure 711, Hazardous Waste Removal. The contents and requirements are summarized below.

- Stormwater Pollution Prevention Plan (SWPPP) - In accordance with SWRCB requirements and Section 1.3.A.2, Storm Water Pollution Prevention Plan, of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, the Contractor would be required to prepare and implement a SWPPP for coverage under the Construction General Permit. The SWPPP would require implementation of BMPs for hazardous materials storage and containment of releases to prevent runoff into existing stormwater collection systems or waterways.
- Construction and Demolition Waste Disposal Plan - In accordance with Section 1.3.C, Construction and Demolition Waste Disposal Plan, of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, the Contractor would be required to prepare a Demolition Waste Disposal Plan to describe requirements for removing, handling, transporting, and disposing of any waste material, and requires the Contractor to submit copies of wastes manifests prior to disposal of hazardous wastes and documentation that the waste hauler is regulated by the state to transport hazardous wastes.
- Spill Prevention and Response Plan - In accordance with Section 1.3.D, Spill Prevention and Response Plan, of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, the Contractor would be required to prepare a Spill Prevention and Response Plan to specify methods for preventing and controlling the accidental release of hazardous materials used during construction and would include a list of the hazardous substances proposed for use or generated on site; requirements to be taken to prevent spills, monitor hazardous substances, and provide immediate responses to spills; phone numbers for notifying appropriate regulatory agencies and EBMUD; identification of spill-related worker and public health and safety issues for each known hazardous substance used on the jobsite; and spill control and cleanup procedures.
- Project Health and Safety Plan - In accordance with Section 1.3B, Project Health and Safety Plan, of EBMUD Standard Construction Specification 01 35 24, Project Safety Requirements, the Contractor would be required to prepare a Project Safety and Health Plan that addresses anticipated hazards related to hazardous materials, describes appropriate training requirements, and identifies qualified hazardous material testing personnel.
- Hazardous Waste Removal – In accordance with EBMUD Procedure 711, EBMUD and its Contractor would comply with specific steps outlined for characterizing wastes, coordinating waste disposal, maintaining inventories of hazardous waste, and tracking any hazardous waste handling and disposal requirements.

Because the Project would comply with mandatory existing regulations and programs and with implementation of EBMUD Standard Construction Specification 01 35 24, Project Safety Requirements, including Section 1.3.B, Project Health & Safety Plan, and EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, including Section 1.3.A.2, Storm Water Pollution Prevention Plan, Section 1.3.C, Construction and Demolition Waste Disposal Plan, and Section 1.3.D, Spill Prevention and Response Plan, and EBMUD Procedure 711, Hazardous Waste Removal, which require preparation and implementation of a SWPPP with requirements to prevent discharge of stormwater contaminated with any potential pollutants from the Project site, a Spill Prevention and

Response Plan with requirements for preventing and controlling the accidental release of hazardous materials used during Project construction, a Construction and Demolition Waste Disposal Plan with requirements for removing, handling, transporting, and disposing of any waste material and requiring waste manifests prior to disposal, a Project Safety and Health Plan with requirements to protect workers from exposure to contaminants that could potentially be released during construction, and compliance with EBMUD Procedure 711 including steps for characterizing, disposing of, and tracking hazardous waste, the potential to create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (Appendix B) lists the applicable standard specifications language.

Superchlorinated Water for Pipeline Disinfection

During construction, the new approximately 1,300-foot, 30-inch diameter suction and new approximately 3,600-foot, 30-inch discharge pipelines connecting the new PP to the existing water distribution system would be filled with superchlorinated water to disinfect the pipelines before placing the pipelines in service. Superchlorinated water contains chlorine residual concentrations significantly greater than potable water, generally in the range of approximately 100 to 300 milligrams per liter (mg/L). Once the disinfection of the pipelines is complete, the superchlorinated water would need to be discharged. The planned discharge and release of superchlorinated water after testing and disinfection of new pipelines could potentially violate water quality standards or waste discharge requirements.

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 1.3.B, Water Control and Disposal Plan, of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, which requires that the Contractor submit a detailed Water Control and Disposal Plan for EBMUD's acceptance prior to any work at the jobsite. The Water Control and Disposal Plan shall comply with requirements of all applicable discharge permits. The Water Control and Disposal Plan requires all drinking water system discharges to the storm drain be dechlorinated with acceptable turbidity and pH. Superchlorinated discharges are required to be sent to the sanitary sewer system, in accordance with a Sanitary Sewer Discharge permit from the appropriate regulatory agency.

With implementation of the requirements specified in EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, Section 1.3.B, Water Control and Disposal Plan, superchlorinated water discharges from disinfection of the new pipelines required for the Project would either be discharged to the sanitary sewer system or properly dechlorinated and tested before being discharged into the storm drain, ensuring that no water quality standard or waste discharge requirement violations occur as a result of superchlorinated water discharges associated with pipeline disinfection, therefore the potential to 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 would be less than significant. The EBMUD Practices and Procedures

Monitoring and Reporting Plan (Appendix B) lists the applicable standard specifications language.

Accidental Rupture of High-Priority Subsurface Utilities
Subsurface high-priority utilities could be inadvertently damaged during excavation activities at the existing pipeline abandonment disconnection sites, the new PP site or along the new pipeline alignments. 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. Such damage to utilities could fatally injure construction workers, damage equipment, and ignite fires.

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 Section V, Requirements and Guidelines of Planning, Design, and Construction, of EBMUD's Engineering Standard Practice 514, Identifying Buried Conflicts, and Section 1.3.J, Electrical Safety Plan, and Section 1.3.B, Project Health & Safety Plan, of EBMUD Standard Construction Specification 01 35 24, Project Safety Requirements. The contents and requirements of these standard practices and procedures are summarized below.

- Identifying Buried Conflicts - In accordance with EBMUD's Engineering Standard Practice 514, Identifying Buried Conflicts, EBMUD and its Contractor would be required to identify existing utilities; follow guidelines for collecting/depicting utility data during Project planning, design, and construction; and determine factors for identifying buried conflicts.
- Electrical Safety Plan - In accordance with Section 1.3.J, Electrical Safety Plan, of EBMUD Standard Construction Specification 01 35 24, Project Safety Requirements, the Contractor is required to prepare an Electrical Safety Plan, if the Project is determined to be located adjacent to an underground electrical transmission line, that would identify requirements to protect workers from hazardous voltages on pipelines or associated structures.
- Project Health and Safety Plan - In accordance with Section 1.3.B, Project Health & Safety Plan, of EBMUD Standard Construction Specification 01 35 24, Project Safety Requirements, the Contractor is required to a Project Safety and Health Plan that would address anticipated hazards related to open trench construction and excavations and include an Emergency Action Plan that requires notification of responsive agencies in the event of an accident.

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 & Safety Plan, and Section 1.3.J, Electrical 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, impacts from accidental rupture of high-priority subsurface utilities would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (Appendix B) lists the applicable standard specifications language.

Disturbance of Hazardous Materials

Construction activities include soil excavation at the existing PP site, existing pipeline abandonment disconnection sites, new PP site and new pipeline alignments which have the potential to disturb existing unknown hazardous materials in the soil or groundwater. Demolition activities at the existing PP site also have the potential to encounter lead and asbestos in the building material and equipment.

A Phase I Environmental Site Assessment (ESA) was conducted in June 2013 for the new PP site by URS (URS Corporation, 2013) which included a regulatory database review, review of historical aerial photos, and site reconnaissance. The regulatory database search report concluded neither the new PP site nor the adjacent property addresses were listed in the environmental databases, indicating that they are not known to contain any hazardous wastes or contaminants. Review of historical aerial photographs determined that a gas station was present on the new PP site from at least 1950 to 1952 and possibly until 1958. The gas station may have used Underground Storage Tanks (USTs) or aboveground storage tanks (ASTs) to store fuel. Site reconnaissance concluded no hazardous substances or petroleum products were observed at the Project site and no evidence of USTs or ASTs.

If an AST or UST were previously used to store fuel on site, a release of fuels from the tank could have historically impacted soil and groundwater. The potential for hydrocarbon constituents, including gasoline and benzene, toluene, ethylbenzene, and xylenes, to persist in the environment for a period of 50 or 60 years is unlikely. However, tetraethyl lead (TEL) was commonly used as an octane booster in gasoline during the 1950s and elevated TEL concentrations could persist in shallow soil if an uncontrolled release of fuels occurred. To evaluate whether the site has been adversely impacted by a historical release of TEL, the Phase I ESA recommended collecting shallow soil samples and testing for TEL which was later conducted as part of a Phase II ESA.

A Phase II ESA was conducted in February 2016 for the site by Engineering/Remediation Resources Group, Inc (ERRG) (ERRG, 2016). The Phase II ESA investigated potential impacts to the site from historical gas and oil facilities or other activities at the site. The Phase II ESA included a subsurface investigation (utility locating and ground-penetrating radar survey) to identify whether USTs were present on site, collection of soil samples to assess whether a release from any identified USTs had occurred, and analysis of soil samples to characterize contaminants. The subsurface investigation identified buried metal/anomalies but was unable to confirm or deny the presence of a UST. The soil sampling investigation included eight soil boring locations where buried metal/anomalies were identified by the

subsurface investigation. Soil testing indicated that contaminants are at levels that were not detectable or were below Environmental Screening Levels or U.S. EPA Region 9 RSLs; therefore, it is unlikely that there have been hazardous materials released of significant quality at the surface or subsurface and contaminated soils are not expected to be encountered during construction of the new PP. No groundwater was encountered and therefore, encountering of contaminated groundwater is not anticipated.

A review of SWRCB GeoTracker database, DTSC EnviroStor database, and the Terradex database were conducted to determine if there is a potential for and/or known sources of subsurface contamination in the vicinity of the existing PP site, existing pipeline abandonment disconnection sites, and new pipeline alignments. No hazardous materials release sites were identified at any of the sites and there is no evidence of contamination along the pipeline alignments.

The chemical quality of soil and groundwater that may be encountered during Project-related excavation has not been assessed for the new pipelines and unanticipated contaminated soil or groundwater could be encountered. The proper management and disposal (if necessary) of contaminated soil and/or groundwater is required to ensure the protection of workers and the environment. The disturbance of contaminated soil and/or groundwater (if any) during proposed Project excavation activities for construction activities could, therefore, pose a significant hazard to construction workers and/or the environment.

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 1.3.B, Project Health & Safety Plan, of EBMUD Standard Construction Specification 01 35 24, Project Safety Requirements, which requires preparation and implementation of a Project Safety and Health Plan that addresses anticipated hazards related to hazardous substances, fall protection, confined spaces, and trenches or excavations. The Project Safety and Health 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. The Project Safety and Health Plan also requires all personnel who would likely be exposed to hazardous substances have appropriate training. The Project Safety and Health 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, PG&E, rescue teams).

With implementation of the requirements specified in EBMUD Standard Construction Specification 01 35 24, Project Safety Requirements, including Section 1.3.B, Project Health & Safety Plan, which includes preparation and implementation of a Project Safety and Health Plan that addresses anticipated hazards related to hazardous substances, fall protection, confined spaces, and trenches or excavations and would ensure construction personnel are trained and any necessary air monitoring is conducted to address known or suspected hazardous materials, the potential for accidental release of contaminated soil or groundwater during excavation would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (Appendix B) lists the applicable standard specifications language.

Samples for asbestos and lead were taken in 2003 from various electrical components at the existing PP and the analysis revealed the presence of asbestos in the motor control center panel and the presence of lead in the motor's paint coating. An occupational lead exposure assessment was completed in 2006 for the existing PP, which identified the presence of lead at varying levels in the paint on various facility features, including the walls, floor, ceiling, motor, and pipelines. The assessment also determined that although typical maintenance activities at the PP are unlikely to cause lead to become airborne, abrasive activities (such as demolition) could cause the lead in the paint to become a significant source of airborne lead (Sui, 2006). Demolition of the existing PP could result in release of lead or asbestos into the environment that could create a hazard to the public and the environment.

Asbestos wastes must be handled and disposed of in accordance with the federal, state, and local regulations, including OSHA Asbestos Construction Standard (29 CFR Section 1926.1101), which regulates construction work involving demolition of facilities containing asbestos, worker training, and disposal of asbestos waste. For example, these regulations require specific enclosures or regulated areas (a marked-off site where construction workers work with asbestos, including adjoining areas where debris and waste from asbestos work accumulates or where airborne concentrations of asbestos exceed, or can possibly exceed, the permissible exposure limit) to contain asbestos, including filtration systems and vacuums or collection devices and regular testing and monitoring of airborne asbestos during asbestos-removal activities (OSHA, 2002). The National Emission Standards for Hazardous Air Pollutants regulations also specify work practices for asbestos to be followed during demolitions of all structures, installations, and buildings (excluding residential buildings that have four or fewer dwelling units). These work practices include notifying all appropriate agencies before any demolition of buildings that could contain a certain threshold amount of asbestos or asbestos-containing material.

CAL OSHA enforces requirements on lead safety during construction activities such as demolition of structures containing lead under California Code of Regulations, Title 8, Section 1532.1 which requires proper lead sampling and testing, regular air sampling to ensure appropriate protective measures are used, implementation of specific requirements during demolition (e.g., working training, control of lead by High-efficiency Particulate Air (HEPA) vacuuming and wet clean up, use of respirators, etc.), and development of a compliance program.

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, EBMUD Standard Construction Specification 02 83 13, Lead Hazard Control Activities, Section 1.3.C, Construction and Demolition Waste Disposal Plan, and Section 1.3.E, Dust Control and Monitoring Plan, of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, and EBMUD Procedure 711, Hazardous Waste Removal. The contents and requirements of these standard practices and procedures are summarized below:

- Asbestos Control Activities - In accordance with EBMUD Standard Construction Specification 02 82 13, Asbestos Control Activities, the Contractor would be required to submit a Plan of Action for asbestos abatement that includes a detailed plan of the procedures for compliance with the regulations including 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.
- Lead Hazard Control Activities – In accordance with EBMUD Standard Construction Specification 02 83 13, Lead Hazard Control Activities, the Contractor would be required to prepare a Lead Demolition Plan that specifies handling, engineering control, removal, and disposal procedures for lead-containing coating. All workers performing work must meet the requirements of the California Department of Health Services lead-related construction interim certification. The lead work area must be isolated using caution tape, and the job site must be secured at all times. During demolition, the Contractor must protect against contamination of soils, water, adjacent buildings and properties, and the airborne release of hazardous materials and dusts. Transportation equipment for removal of lead-containing materials must be suitable for loading, temporary storage, transit, and unloading of waste without exposure to persons or property. The Contractor must also remove all evidence of lead-containing materials from the jobsite that are related to Project demolition.
- Construction and Demolition Waste Disposal Plan - In accordance with Section 1.3.C, Construction and Demolition Waste Disposal Plan, of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, the Contractor would be quired to prepare a Demolition Waste Disposal Plan with detailed means and methods for removing, handling, transporting, and disposing of all materials 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.
- Dust Control and Monitoring Plan – In accordance with Section 1.3.E, Dust Control and Monitoring Plan, of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, the Contractor would be required to develop a Dust Control and Monitoring Plan with detailed means and methods for controlling and monitoring dust generated by demolition and other work on the site thereby reducing the potential for asbestos to become airborne. The Dust Control and Monitoring Plan would be required to comply with all applicable regulations including, but not limited to, the BAAQMD Particulate Matter and Visible Emissions Regulation 1 and Public Nuisance Rule, outline BMPs for preventing dust emissions, provide guidelines for training of employees, and detail the equipment and methods used to monitor compliance with the plan.
- Hazardous Waste Removal – In accordance with EBMUD Procedure 711, EBMUD and its Contractor would comply with specific steps outlined for characterizing wastes, coordinating waste disposal, maintaining inventories of hazardous waste, and tracking any hazardous waste handling and disposal requirements.

Because the Project would comply with mandatory existing regulations and programs and with implementation of EBMUD Standard Construction Specification 02 82 13, Asbestos Hazard Control Activities, which includes requirements to safely contain and dispose of

asbestos containing materials during demolition, EBMUD Standard Construction Specification 02 83 13, Lead Hazard Control Activities, which includes requirements to safely contain and dispose of lead containing materials during demolition, EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, including Section 1.3.C, Construction and Demolition Waste Disposal Plan, and Section 1.3.E, Dust Control and Monitoring Plan, which require preparation and implementation of a Demolition Waste Disposal Plan that includes requirements to ensure removing, handling, transporting, and disposing of all materials is done in a safe, appropriate, and lawful manner, and a Dust Control and Monitoring Plan which contains requirements to control dust generated by demolition; and compliance with EBMUD Procedure 711, Hazardous Waste Removal, which includes steps for characterizing, disposing of, and tracking hazardous waste, the potential to the potential to emit hazardous emissions from asbestos and lead waste during demolition would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (Appendix B) lists the applicable standard specifications language.

Operation
Operation of the Project would not involve the routine transport of hazardous materials to or from the Project site or involve ground disturbance that could result in 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. Solvents, cleaners, or other chemicals may be used during maintenance of the new PP for cleaning equipment or to prevent corrosion but would be used in very small quantities. The use, storage, and transport of hazardous materials throughout the operational life of the Project would be carried out in accordance with federal, state, and local regulations for transport, storage, use, and disposal of hazardous materials. Operation of the Project would not require excavation or other ground-disturbing activities that could result in accidental release of subsurface hazardous materials or impacts to subsurface utilities. The potential impacts related to hazardous materials during operation would be less than significant.

c. Less than Significant Impact.

Construction
Construction of the Project would require the use of some hazardous materials, including fuels, lubricants, paints, and solvents, at the existing and new PP sites and along the new pipeline alignments. Seven schools are located within 0.25 mile of the Project sites. It is unlikely that the Project would expose schools to these types of hazardous materials during construction because potential impacts associated with exposure to construction fuels and materials are highly localized, and none of the schools are located on or adjacent to any of the Project sites.

Hazardous materials used during construction would be managed in accordance with applicable regulations and CUPA programs, 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 Section 1.3.B, Project Health & Safety Plan, of EBMUD Standard Construction Specification 01 35 24, Project Safety Requirements, and Section 1.3.D, Spill Prevention and Response Plan, of EBMUD Standard

Construction Specification 01 35 44, Environmental Requirements, which require the development of a Project Safety and Health Plan and Spill Prevention and Response Plan, respectively. The Project Safety and Health Plan would address anticipated hazards related to hazardous materials and include an Emergency Action Plan that provides notification procedures in the event of an accident and the Spill Prevention and Response Plan would define protocols to prevent and control the accidental release of hazardous materials during construction, identify notification protocols, and provide spill control and cleanup procedures.

Because there are no schools located within or adjacent to the Project sites and with implementation of EBMUD Standard Construction Specification 01 35 24, Project Safety Requirements, including Section 1.3.B, Project Health & Safety Plan, and EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, including Section 1.3.D, Spill Prevention and Response Plan, which would implement standard practices and an Emergency Action Plan related to the use of hazardous or acutely hazardous materials, and would define protocols to prevent and control the accidental release of hazardous materials during the Project construction, the impact on nearby schools would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (Appendix B) lists the applicable standard specifications language.

Operation
Operation of the Project may require periodic use of solvents, cleaners, or other chemicals as part of routine maintenance activities for the new PP; however, these would be used in very small quantities. No schools are located at or adjacent to the new PP. Impacts to schools would not occur.

d. No Impact.

The Project sites were checked against regulatory agency databases, such as Cal/EPA DTSC's online data management system, and the Envirostor Database, which is compiled pursuant to Government Code Section 65962.5. No elements of the Project are located on a site included on a list of hazardous materials sites. No impacts related to hazards or releases from the Project sites from construction or operation of the Project would occur.

e. No Impact.

No elements of the Project are located within an airport land use plan or within two miles of a public airport or public use airport. No impacts related to airports or airport land use plans from construction or operation of the Project would occur.

f. Less than Significant Impact.

Construction
The City has adopted Emergency Management Plans that provide a general framework for local agencies to implement emergency response and evacuation procedures. Construction of

the new pipelines could require full and/or partial closure of roadways, which could impede emergency access during these closures.

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 1.2, Submittals, of EBMUD Standard Construction Specification 01 55 26, Traffic Regulation, which requires the preparation and submittal of a Traffic Control Plan that conforms to the most current version of the Caltrans Manual of Traffic Controls for Construction and Maintenance Work Zones and requires that the Traffic Control Plan include 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.

With implementation of the requirements specified in EBMUD Standard Construction Specification 01 55 26, Traffic Regulation, including Section 1.2, Submittals, which requires the preparation and submittal of a Traffic Control Plan, impacts on emergency response and evacuation during construction would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (Appendix B) lists the applicable standard specifications language.

Operation
Operation of the new PP and pipelines would not require lane or road closures and would not impair or physically interface with an adopted emergency response plan or emergency evacuation plan. No impacts to emergency response or evacuation plans from operation of the Project would occur.

g. No Impact.

Portions of the Project are located adjacent to or within a Very High Fire Hazard Severity Zone, as defined by California Department of Forestry and Fire Protection (CALFIRE, 2007, 2008), including the existing PP and approximately 500 feet of the new discharge pipeline alignment. However, the existing PP is located entirely in developed urban/suburban areas and the new pipeline alignments are located within existing paved roadways, and therefore would not include any work in wildland areas. The Project would not expose people or structures to a potential wildfire. No impacts would occur from construction or operation of the Project.

REFERENCES

Panorama, Fontaine Pumping Plant Replacement Project Hazards and Hazardous Materials Technical Report, September 2021.

EBMUD, Standard Construction Specification 01 35 24, Project Safety Requirements, October 12, 2020.

EBMUD, Standard Construction Specification 01 35 44, Environmental Requirements, August 31, 2018.

EBMUD, Standard Construction Specification 01 55 26, Traffic Regulation, February 9, 2017.

EBMUD, Standard Construction Specification 02 82 13, Asbestos Control Activities, May 7, 2014.

EBMUD, Standard Construction Specification 02 83 13, Lead Hazard Control Activities, May 31, 2016.

EBMUD, Procedure 711, Hazardous Waste Removal, January 3, 2019.

Sui, C. C., Occupational Lead Exposure Assessment, EBMUD's Fontaine Pumping Plant at 8445 Ney Ave., Oakland, CA, 2006.

CAL FIRE, Fire Hazard Severity Zones in SRA, Map, Scale 1:100,000, 2007.

CAL FIRE, Very High Fire Hazard Severity Zones in LRA (Oakland), Map, Scale 1:40,000, 2008.

3.4.10 Hydrology and Water Quality

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

DISCUSSION

a. Less than Significant Impact.

Construction

Planned potable water discharges associated with the construction of the Project include draining of water from the existing pipelines prior to abandonment and when connecting new pipelines to the distribution system, and the discharge of superchlorinated water upon hydrostatic testing and disinfection of new pipelines. Section 3.4.9, Hazards and Hazardous Materials, of this MND discusses in great detail how planned and unplanned discharges and release of superchlorinated water after testing and disinfection of new pipelines could potentially violate water quality standards or waste discharge requirements. These potable water discharges could potentially violate water quality standards or waste discharge

requirements for surface waters through the introduction of chlorinated drinking water to existing drainages.

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 1.3.B, Water Control and Disposal Plan, and Section 1.3.D, Spill Prevention and Response Plan, of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements. Pursuant to EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, Section 1.3.B, Water Control and Disposal Plan, a Water Control and Disposal Plan would be prepared for the Project that would comply with requirements of all applicable discharge permits. The Water Control and Disposal Plan would require all drinking water system discharges to the storm drain be dechlorinated with acceptable turbidity and pH, with proper control to prevent erosion, scouring of bank, nuisance, contamination, and excess sedimentation in the receiving waters, and with effective erosion and sediment controls (e.g., straw wattles, pea gravel filter bags). Superchlorinated discharges are required to be sent to the sanitary system, in accordance with a Sanitary Sewer Discharge permit from the appropriate regulatory agency. Pursuant to EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, Section 1.3.D, Spill Prevention and Response Plan, a Spill Prevention and Response Plan would be prepared for the Project which requires methods for preventing and controlling the accidental release of hazardous materials used during Project construction. The Spill Prevention and Response Plan shall include a list of the hazardous substances proposed for use or generated by the contractor on site, including petroleum products, and processes that would be taken to prevent spills, monitor hazardous substances, and provide immediate response to spills. Spill response processes shall address notification of EBMUD and appropriate agencies including phone numbers; spill-related worker, public health, and safety issues; spill control, and spill cleanup.

With implementation of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, including Section 1.3.B, Water Control and Disposal Plan, and Section 1.3.D, Spill Prevention and Response Plan, which require the contractor to ensure potable water discharges would be controlled, treated, and discharged and prevent or control the accidental release of potable water during the construction of the Project, impacts on water quality standards or waste discharge requirements would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (Appendix B) lists the applicable standard specifications language.

Construction activities for the Project, including clearing and grubbing activities, preparation of construction staging areas, and demolition of the existing PP, would expose soils to the elements (wind and rain). Soils may be entrained in stormwater runoff, potentially affecting water quality in receiving surface waters. Improper use, storage, or disposal of fuels, lubricants, and other chemicals used in construction could also result in the conveyance of contaminants to the receiving surface waters via stormwater runoff. The demolition and removal of the existing PP structure would generate construction debris, some of which contains toxic substances including lead and asbestos that could also result in the conveyance

of contaminants to the receiving surface waters via stormwater runoff. Thus, stormwater discharges could potentially violate water quality standards or waste discharge requirements or otherwise substantially degrade surface water quality.

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 1.3.A, Stormwater Pollution Prevention Plan, of EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements which requires processes to be implemented that prevent the discharge of contaminated stormwater runoff from the Project site, such as dechlorination tablets, rock filter bags and drain inlet protection. Contaminants to be addressed include, but are not limited to, soil, sediment, concrete residue, liquid discharges with pH less than 6.5 or greater than 8.5, and chlorine residuals in potable water discharges, and all other contaminants known to exist at the Project site.

With implementation of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, including Section 1.3.A, Stormwater Pollution Prevention Plan, which requires the contractor to prepare a SWPPP that would prevent the discharge of contaminated stormwater runoff from the Project site through controls, impacts related to the release of contaminated stormwater runoff, a potential violation of water quality standards or waste discharge requirements, would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (Appendix B) lists the applicable standard specifications language.

Operation

Once construction is complete, there are no potable water discharges planned from the new or existing PP sites. Roadways would be repaved to their pre-construction condition, the existing PP site would experience a decrease in the total impervious surface area due to demolition of the structure and surrounding concrete walkways and stairways, and the new PP site would experience an increase in impervious area due to the new PP roof and paved parking areas. Both sites would be maintained in a manner that keeps the site clean and free of trash and other debris. The existing PP site would be hydroseeded with grasses to prevent erosion and the new PP would minimize impervious areas utilizing decomposed granite surfaces, open cell pavers, and landscaped areas. Stormwater runoff from the existing PP site is therefore expected to decrease from existing conditions and would be routed to an existing storm drain like existing conditions. Stormwater runoff at the new PP site would be greater than existing conditions due to the increased impervious area but would be minimal and routed to a gutter on the street. Therefore, impacts on water quality standards or waste discharge during operation requirements would be less than significant.

b. Less than Significant Impact.

Construction

Construction of the Project would not require significant excavation dewatering and therefore construction impacts to groundwater supplies would be less than significant.

Operation

As discussed under (a) runoff from the new PP site would be minimal and would be further reduced by utilizing landscaped areas and minimizing impervious areas including the use of open-cellular concrete paving. Stormwater runoff from the impervious surfaces would be directed to the landscaped areas to the fullest extent possible to maximize stormwater recharge of soils. The demolition of the existing PP would decrease the total impervious surface area and allow for stormwater recharge of soils. Therefore, operational impacts on groundwater supplies would be less than significant.

c.i through c.iv Less than Significant Impact.

The existing PP site and existing pipeline abandonment disconnection sites are located in the Arroyo Viejo Creek watershed. Neither the existing PP site nor any of the three existing pipeline abandonment disconnection sites are located within an existing drainage. The nearest drainage to any of the Project's existing sites is a small tributary branch of Arroyo Viejo Creek, which connects to Arroyo Viejo Creek through an underground culvert south of Golf Links Road, approximately 250 feet from the southernmost existing pipeline abandonment disconnection site near Golf Links Road. The new PP is located in the Elmhurst Creek watershed and the new pipelines traverse both the Elmhurst Creek watershed and the San Leandro Creek watershed. Neither the new PP nor the new pipelines are located within an existing drainage. The nearest drainages to any of the Project's new sites are surface drainages and underground culverts and storm drains along 98th Avenue. No wetlands, waters or riparian areas under the jurisdiction of the U.S. Army Corps of Engineers, RWQCB, or CDFW occur within the Project sites.

Construction

Construction activities for the Project would involve minor alterations to the drainage patterns at the existing PP site after the existing building and paving are demolished and at the new PP site after excavation, grading, site paving and construction of the new building. At both sites and during the pipeline work, accidental release of hazardous materials such as oil, grease, or fuel during construction could potentially degrade surface water quality.

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, Section 1.3.A, Stormwater Pollution Prevention Plan, Section 1.3.B, Water Control and Disposal Plan, and Section 1.3.D, Spill Prevention and Response Plan, of EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements. Section 1.1.B, Site Activities, requires that no construction debris shall be allowed to enter into storm drains or surface waters or be placed where it may be washed by rainfall or runoff outside the construction limits by using methods such as rock filter bags and drain inlet protection. Section 1.3.D, Stormwater Pollution Prevention Plan, includes processes to be implemented that prevent the discharge of contaminated stormwater runoff from the Project site. Contaminants to be addressed include, but are not limited to,

soil, sediment, concrete residue, liquid discharges with pH less than 6.5 or greater than 8.5, and chlorine residuals in potable water discharges, and all other contaminants known to exist at the Project site. Section 1.3.B, Waste Control and Disposal Plan, requires all drinking water system discharges to the storm drain be dechlorinated with acceptable turbidity and pH, with proper control to prevent erosion, scouring of bank, nuisance, contamination, and excess sedimentation in the receiving waters, and with effective erosion and sediment controls (e.g., straw wattles, pea gravel filter bags). Superchlorinated discharges are required to be sent to the sanitary system, in accordance with a Sanitary Sewer Discharge permit from the appropriate regulatory agency. Section 1.3.D, Spill Prevention and Response Plan, requires methods for preventing and controlling the accidental release of hazardous materials used during Project construction. The Spill Prevention and Response Plan shall include a list of the hazardous substances proposed for use or generated by the contractor on site, including petroleum products, and processes that would be taken to prevent spills, monitor hazardous substances, and provide immediate response to spills. Spill response processes includes notification of EBMUD and appropriate agencies including phone numbers; spill-related worker, public health, and safety issues; spill control, and spill cleanup.

With implementation of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, including Section 1.1.B, Site Activities, Section 1.3.A, Stormwater Pollution Prevention Plan, Section 1.3.B, Water Control and Disposal Plan, and Section 1.3.D, Spill Prevention and Response Plan, which would ensure construction debris doesn't pollute the storm drains or surface waters, the Project's SWPPP would limit delivery of silt and sediment by providing to ensure effective stormwater/non-stormwater management and the Water Control and Disposal Plan would require controls regarding liquid discharges from the Project site to prevent erosion, scouring of bank, nuisance, contamination, and excess sedimentation into receiving waters, the Project's construction activities would not 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 flooding on site 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, and the impacts are less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (Appendix B) lists the applicable standard specifications language.

Operation

At the existing PP, the demolition of the PP would not alter the existing drainage pattern of the site; therefore, there would be no alteration of the existing drainage pattern of the site area 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 flooding on site 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. The demolition of the existing PP would remove the impervious structure roof and concrete walkways and stairways from the site and allow infiltration of stormwater into the footprint area of the removed structures resulting in an increase in infiltration and a decrease in surface runoff

contributions. Therefore, the operation of the Project at the existing site would not create or contribute runoff water 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 flooding on site 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, resulting in less than significant impacts.

At the new PP site, the new structure roof and paved parking area would create a new impervious area totaling less than 5,000 square feet. Stormwater runoff from the new PP site would be minimized by utilizing landscaped areas and minimizing impervious areas including the use of open-cellular concrete paving in front of the secondary entrance from MacArthur Boulevard. Stormwater runoff from the impervious surfaces would be directed to the landscaped areas to the fullest extent possible to maximize stormwater recharge of soils. Also, long-term operations at the new PP site would not include long-term storage of potential pollutants. Therefore, the operation of the Project at the new site there would not alter the existing drainage pattern 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 flooding on site 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, resulting in less than significant impacts.

At the existing pipeline abandonment disconnection sites and the new pipeline alignments, the areas disturbed would be paved again resulting in no net change to drainage patterns and therefore there is no impact.

d. No Impact

None of the Project sites are located in flood hazard, tsunami, or seiche zones; therefore, there would be no impact.

e. Less than Significant Impact

Construction

Construction-related activities involving soil disturbance, such as grading, excavation, cut and fill, stockpiling of soils, and dewatering, 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.

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 1.3.A, Stormwater Pollution Prevention Plan, of EBMUD's Standard

Construction Specification 01 35 44, Environmental Requirements, which requires the contractor to prepare a SWPPP. The SWPP 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.

With implementation of the processes specified in EBMUD Standard Construction Specifications Section 01 35 44, Environmental Requirements, including Section 1.3.A, Stormwater Pollution Prevention Plan, which requires the contractor to prepare a SWPPP that would prevent the discharge of contaminated stormwater runoff from the Project site through controls such as such as dechlorination tablets, rock filter bags and drain inlet protection, construction of the Project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan resulting in a less than significant impact. The EBMUD Practices and Procedures Monitoring and Reporting Plan (Appendix B) lists the applicable standard specifications language.

Operation

Once construction is complete, there are no potable water discharges planned from the new PP or existing PP sites. Both sites would be maintained in a manner that keeps the sites clean and free of trash and other debris. The existing PP site would be hydroseeded with grasses to prevent erosion and the new PP would minimize impervious areas utilizing decomposed granite surfaces, open cell pavers, and landscaped areas. Stormwater runoff from the existing PP site is therefore expected to decrease from existing conditions and would be routed to an existing storm drain like existing conditions. Stormwater runoff at the new PP site would be greater than existing conditions due to the increased impervious area but would be minimal and routed to a gutter on the street. Therefore, the Project would not impact or obstruct implementation of a Water Quality Control Plan or Sustainable Groundwater Management Plan. Impacts would be less than significant.

REFERENCES

California Department of Water Resources Inundation Maps (ca.gov).

City of Oakland, Safety Element, Oakland General Plan, 2004: pages 104-6.

Alameda County Watershed Map – Alameda County Resource Conservation District (ACRCD)

- Elmhurst Creek Watershed | Alameda County Flood Control District (acfloodcontrol.org).
- Arroyo Viejo Watershed | Alameda County Flood Control District (acfloodcontrol.org).
- San Leandro Creek Watershed | Alameda County Flood Control District (acfloodcontrol.org).

EBMUD, Standard Construction Specification, Section 01 35 44, Environmental Requirements, March 2, 2018.

Federal Emergency Management Agency (FEMA), FEMA Map Service Center: Search by Address. *Flood Insurance Rate Map No. 0613C0466F*, Effective June 16, 2009. Available online at https://msc.fema.gov/portal/search#searchresultsanchor. Accessed February 24, 2021.

State Water Resources Control Board (SWRCB), *2010 Integrated Report (Clean Water Act Section 303(d) List / 305(b) Report)* — Statewide. Available online at http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml. Accessed February 24, 2021.

3.4.11 Land Use and Planning

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐

DISCUSSION

a. No Impact.

The Project would not physically divide an established community because demolition of the existing PP would leave a parcel absent of any structures, abandonment of existing pipelines would be completed underneath existing roadways, construction of the new PP would be completed on one vacant corner parcel as detailed in the Project Description, and the new pipeline construction would be completed underneath existing roadways.

b. Less than Significant Impact.

Pursuant to California Government Code Section 53091(e), county and city zoning ordinances do not apply to the location or construction of facilities for the transmission of water. This MND does, however, consider resource policies in the zoning ordinances and general plans for the City in corresponding MND sections (e.g., Noise, Biological Resources). The existing PP site is designated as "Detached Unit Type Residential" and the new PP site is designated as "Urban Type Residential" in the City's General Plan (City of Oakland, 1998). The existing PP site is zoned RD-1 (Detached Unit – 1) and the new PP site is zoned RU-1 (Urban – 4) (City of Oakland, 2018). The City's zoning ordinance identifies publicly owned structures as allowable uses within these zoning districts. The Project would require an encroachment permit for construction within city streets and sidewalks, pursuant to Chapter 12.08 of the City's municipal code. EBMUD would prepare and submit to the Public Works Department for review and approval an encroachment permit application. The City's General Plan goals, policies and objectives related to land use and applicable to the Project are listed below.

- Policy N12.1. Developing Public Service Facilities. The development of public service facilities and staffing of safety-related services, such as fire stations, should be sequenced and timed to provide a balance between land use and population growth, and public services at all times.
- Policy N12.5 Reducing Capital Improvement Disparities. In its capital improvement and public service programs, the City should give special priority to reducing deficiencies in, and disparities between, existing residential areas.

The existing PP would replace existing aging infrastructure and improve water supply reliability for existing and projected future customer demands enabling EBMUD to maintain a high level of service in the area, consistent with Policy N12.1. All above-ground facilities would be located on the new PP site and would be consistent with the existing use of the site. The proposed facilities would not result in changes to land uses in the Project area, and therefore would not result in deficiencies in or disparities between existing residential areas, consistent with Policy N12.5. For these reasons, and through adherence to the provisions of the municipal code, the Project would not obviously conflict with applicable City land use policies and regulation, therefore the impact is considered to be less than significant.

REFERENCES

City of Oakland, City of Oakland General Plan, Land Use and Transportation Element, March 1998. Available at: http://www2.oaklandnet.com/government/o/PBN/OurServices/GeneralPlan/DOWD009015.

City of Oakland, Planning & Building Department, City of Oakland Zoning and Estuary Policy Plan Maps, December 11, 2018. Available at: https://cao-94612.s3.amazonaws.com/documents/Zoning_EPP_Map_20181211.pdf.

3.4.12 Mineral Resources

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

DISCUSSION

a. and b. No Impact.

The Project is located in an urban/ suburban environment. There are no mineral resources within the Project area (City of Oakland, 1996). Therefore, there would be no impact to mineral resources.

REFERENCES

City of Oakland, City of Oakland General Plan, Open Space, Conservation and Recreation (OSCAR) Element, June 1996. Available at: https://cao-94612.s3.amazonaws.com/documents/oak035254.pdf.

3.4.13 Noise

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

DISCUSSION

The noise impact analysis is based upon the Fontaine Pumping Plant Replacement Project Noise Technical Report (Panorama, 2021). The analysis provides an evaluation of the potential significance of noise- and vibration-related impacts that would result from the Project at sensitive receptors near each Project site.

a. Less than Significant Impact.

Noise Background, Terminology

Noise can be generally defined as unwanted sound. Sound, traveling in the form of waves from a source, exerts a sound pressure level (referred to as sound level) which is measured in decibels (dB), with zero dB corresponding roughly to the threshold of human hearing and 120 to 140 dB corresponding to the threshold of pain. Human response to noise varies considerably from one individual to another. The effects of noise can include interference with sleep, concentration, and communication; physiological and psychological stress; and hearing loss. Given these noise effects, some land uses are considered more sensitive to noise levels than others. In general, residences, schools, hospitals, and nursing homes are considered the most sensitive to noise and are considered sensitive noise receptors.

The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. As a consequence, when assessing potential noise impacts, sound is measured using an electronic filter that de-emphasizes the frequencies below 1,000 Hz and above 5,000 Hz in a manner corresponding to the human ear's decreased sensitivity to low and extremely high frequencies instead of the frequency mid-range. This method of frequency weighting is referred to as A-weighting and is expressed in units of A-weighted decibels (dBA). Frequency A-weighting follows an international standard methodology of frequency de-emphasis and is typically applied to community noise measurements.

To describe the time-varying character of environmental noise, a single number descriptor called the L_{eq} is widely used. The L_{eq} is the average A-weighted noise level during a specified period of time. For the purposes of the analyses, L_{eq} is the primary descriptor used to provide a direct comparison between the construction and operational noise levels generated by the Project and the local noise ordinance thresholds. L_{max} is also used to represent the maximum A-weighted noise level during a single noise event (e.g., a vehicle passing).

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 City's General Plan Noise Element (City of Oakland, 2005), sensitive land uses generally include residences, schools, churches, hospitals, elderly care facilities, hotels, and libraries. These are referred to as sensitive receptors.

Sensitivity to noise increases during the evening and at night because excessive noise interferes with the ability to sleep; therefore, 24-hour descriptors have been developed that incorporate artificial noise penalties added to quiet-time noise events. The *Day/Night Average Sound Level* (L_{dn}) is a measure of the cumulative noise exposure in a community, with a 10 dB addition to nocturnal (10:00 p.m. - 7:00 a.m.) noise levels. The analysis below is compared to ambient noise levels using L_{dn} because the City's General Plan roadway noise contour map provides ambient noise levels in L_{dn}[6] for areas throughout the City. A roadway noise contour map provides predicted noise levels along major traffic thoroughfares such as state and interstate freeways in the form of a line on a map that represents equal levels of noise exposure. As a supplement to noise contour information, the Noise Element of the General Plan also provides traffic noise level data for major local roadways, including measured existing noise levels and calculated future noise levels, along select roadway segments.

The noise impact analysis and significance determination utilize the approach of the City and reflects its interpretation of the City's Noise Ordinance and the Oakland Planning Code (OPC). The OPC identifies time limits and noise thresholds for short-term and long-term Construction and Operational Noise Standards by the receiving land use type, as shown in Tables 3.4.13-1 and 3.4.13-2, respectively.

[6] In general, L_{dn} is equivalent to $L_{eq}(24)$ with a 10 dB penalty applied to nighttime hours (between 10:00 p.m. and 7:00 a.m.). However, if a project does not generate nighttime noise between 10:00 p.m. and 7:00 a.m., no 10-dB penalty is applied and L_{dn} is directly equivalent to $L_{eq}(24)$.

Table 3.4.13-1 Summary of City Construction Noise Standards

Construction Time Limits [c]		Construction Noise Thresholds [a b]
Weekdays	Weekends	
7 a.m. – 7 p.m. (daytime)	9 a.m. – 8 p.m. (daytime)	*Residential Zones* Short term (<10 days): 80 dBA on weekdays and 65 dBA on weekends and legal holidays Long-term (>10 days): 65 dBA on weekdays and 55 dBA on weekends and legal holidays *Commercial Zones* Short term (<10 days): 85 dBA on weekdays and 70 dBA on weekends and legal holidays Long-term (>10 days): 70 dBA on weekdays and 60 dBA on weekends and legal holidays

Notes:

[a] If the ambient noise level exceeds these standards, the standard shall be adjusted to equal the ambient noise level.

[b] The noise ordinance does not specify a noise descriptor applicable to these noise thresholds; therefore, for the purposes of this analysis, L_{eq} for an 8-hour period was used because active construction for the Project would occur across a typical 8-hour workday.

[c] Time limits for noise levels generated by construction activities are specified in Chapter 17.120, Performance Standards, Section 17.120.050, Noise, of the OPC.

Table 3.4.13-2 Summary of City Operational Noise Standards

Receiving Land Use [d]	Cumulative No. of Minutes in 1-Hr Period [b]	Maximum Allowable Noise Level (dBA)[a]	
		Daytime 7 a.m. – 10 p.m.	Nighttime 10 p.m. – 7 a.m.
Residential and Civic [c]	20 (L_{33})	60	45
	10 ($L_{16.7}$)	65	50
	5 ($L_{8.3}$)	70	55
	1 ($L_{1.7}$)	75	60
	0 (L_{max})	80	65
		Anytime	
Commercial	20 (L_{33})	65	
	10 ($L_{16.7}$)	70	
	5 ($L_{8.3}$)	75	
	1 ($L_{1.7}$)	80	
	0 (L_{max})	85	

Notes:

[a] These standards are reduced 5 dBA for simple tone noise, noise consisting primarily of speech or music, or recurring impact noise. If the ambient noise level exceeds these standards, the standard shall be adjusted to equal the ambient noise level.

[b] L_x represents the noise level that is exceeded X percent of a given period. L_{max} is the maximum instantaneous noise level.

[c] Legal residences, schools and childcare facilities, health care or nursing home, public open space, or similarly sensitive land uses.

[d] Operational (long-term) noise thresholds are specified in Section 17.120.050 of the OPC at the receiving land use during new Project operations.

Established Noise Standards

The City requires projects that exceed the short- and long-term construction thresholds to incorporate noise controls to ensure that the maximum feasible noise attenuation is achieved.

The City requires the incorporation of Oakland Standard Conditions of Approval for all projects approved by the City. Similarly, EBMUD incorporates Standard Construction Specifications and Procedures into all projects. Project-related construction activities that generate noise levels in exceedance of the City's short- and long-term construction noise thresholds would incorporate applicable EBMUD Standard Construction Specifications and Procedures, consistent with Oakland Standard Conditions of Approval, to ensure that construction noise has been reduced to the maximum extent feasible.

Consistent with the City's interpretation of the City's Noise Ordinance and OPC, a significant impact would be identified under the following circumstances:

a. Temporary Construction Noise in Excess of Standards. Construction noise impacts would be considered significant if project construction were to exceed the construction noise level standards specified in the OPC and no additional noise controls were applied to the project.
b. Permanent Operational Noise in Excess of Standards. A significant impact would be identified if noise generated by new PP operational equipment were to exceed the noise level standards specified in in the OPC.

Construction

Construction noise would be generated during construction activities associated with the Project, including demolition of the existing PP, construction of the new PP, existing pipeline abandonment activities at three disconnection points, and construction of new pipelines. Individual equipment proposed for demolition and construction of the Project are anticipated to generate noise levels ranging from 66 to 92 dBA L_{eq} and 67 to 99 dBA L_{max} at a distance of 50 feet from the source, as indicated in Table 3.4.13-3. Expected noise levels originating from demolition and construction at Project sites were calculated based on data used in the Federal Highway Administration's (FHA's) Roadway Construction Noise Model Version 2.0.

Vehicle trips for construction personnel and truck traffic for off-hauling, large equipment deliveries, and material deliveries to the Project sites and pipeline installation have the potential to increase traffic related noise.

Noise specialists Illingworth & Rodkin conducted site visits to measure ambient noise levels on Friday, June 5, 2020. During the site visits, noise specialists verified on-site conditions, monitored noise levels generated by existing nearby noise-generating sources and equipment, and independently developed site-specific ambient noise data to validate the ambient noise data from the General Plan. Because noise measurements were taken during a period of reduced traffic volumes due to COVID pandemic restrictions, traffic noise modeling was conducted to calculate the contribution of traffic noise to the noise environment under normal traffic conditions (i.e., pre-COVID pandemic). Anticipated traffic noise contributions from normal traffic conditions were modeled using the FHA's Traffic Noise Model (TNM) version 2.5.

Variables that influence the noise levels at sensitive receptors include the type of construction equipment used, the timing and duration of noise-generating activities, the distance between construction noise sources and sensitive receptors, any shielding provided by intervening structures or terrain, ambient noise levels, and use of noise source controls.

Table 3.4.13-3 Construction Equipment 50-foot Noise Emission Levels (dBA)

Equipment Category	$L_{eq}^{1,2,3}$	$L_{max}^{1,2}$	Equipment Category	$L_{eq}^{1,2,3}$	$L_{max}^{1,2}$
Backhoe	76	84	Flatbed Truck	-	74
Chainsaw	79	83	Generator	67	68
Compactor (Plate)	-	75	Grader (Passby)	-	79
Compactor (Roller)	82	83	Hoe Ram	92	99
Compressor	66	67	Jackhammer	91	95
Concrete Mixer Truck	81	82	Paving – Asphalt (Paver, Dump Truck)	87	91
Concrete Pump Truck	84	88	Generator	67	68
Concrete Saw	85	88	Power Unit (Power Pack)	81	82
Dozer	80	86	Pump	73	74
Dump Truck (Cyclical)	82	92	Street Sweeper	-	81
Dump Truck (Passby)	-	73	Telescopic Handler (Forklift)	-	88
Excavator	76	87	Welding Machine	71	72

Notes:

[1] Measured at 50 feet from the construction equipment.

[2] Noise levels apply to total noise emitted from equipment and associated components operating at full power while engaged in its intended operation. L_{eq} noise levels also consider the duration of an overall time period that the equipment is operating at full power, also known as the "usage factor".

[3] Equipment without average (L_{eq}) noise levels are non-stationary and best represented only by maximum instantaneous noise level (L_{max}) because L_{eq} noise levels of mobile equipment vary as the proximity to the equipment changes.

Source: National Cooperative Highway Research Program, 2018

Existing PP Demolition

Demolition of the existing PP is anticipated to occur over a period of approximately 8 weeks. As shown in Table 3.4.13-1, the OPC long-term construction noise thresholds are defined as 65 dBA at residential properties and 70 dBA at commercial properties. Ambient noise levels are estimated to be 60 dBA L_{dn} at the existing PP site. There are no commercial properties in the vicinity of the existing PP site; therefore, the residential long-term construction noise threshold of 65 dBA would be applicable to existing PP demolition because ambient noise levels do not exceed the threshold.

Table 3.4.13-4 summarizes construction noise levels by phase and the approximate duration of noise exposure to the nearest sensitive receptor during demolition activities. The nearest sensitive receptor is a residential property located at 8435 Ney Avenue, approximately 20 feet west from the existing PP structure. Without implementation of EBMUD's standard construction specifications, noise levels during demolition of the existing PP are anticipated to range from approximately 69 to 94 dBA L_{eq} at the nearest sensitive receptor as shown in Table 3.4.13-4. Demolition noise would exceed the OPC's daytime long-term construction threshold (65 dBA) at adjacent sensitive receptors. Noise decreases at a rate of approximately 6 dBA per doubling of distance; therefore, noise at more distant receptors would experience reduced noise levels. In addition to the distance-attenuated noise level, receptors that are not directly adjacent to the demolition activities would receive additional noise reduction due to the presence of the intervening residential structures. Noise levels are not anticipated to exceed thresholds at receptors that are not directly adjacent to the demolition site.

As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, would be incorporated into the Project, including EBMUD Standard Construction Specification 01 35 44, Environmental Requirements. Specifically, Section 3.7, Noise Control, of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, which is consistent with Oakland Standard Condition of Approval Number 63, includes use of equipment mufflers. The use of equipment mufflers or similar source controls would reduce construction noise by up to approximately 5 dBA[7], depending on the phase, as shown in Table 3.4.13-4. Section 3.7, Noise Control, of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, also requires the use of noise control blankets or noise barriers, which is also included as part of Oakland Standard Condition of Approval Numbers 63 and 64. EBMUD would install temporary noise control panels or acoustic barriers to the existing chain-link fencing and gates along the northern and eastern perimeters of the existing PP property. Approximately 6-foot-tall redwood fencing and 6-foot-tall plywood fencing currently line the western and southern perimeters, respectively, of the existing PP property and would not require acoustic barriers. The combination of the noise control panels or acoustic barriers and existing 6-foot-tall redwood fencing and 6-foot-tall plywood fencing on the western and southern perimeters (which is functionally equivalent to the noise control panels) would reduce

[7] Source controls do not exist for concrete saws or chainsaws; therefore, noise levels adjusted for consideration of Standard Construction Specifications do not include reduction of concrete saw or chainsaw noise.

construction noise by up to 5 dBA at the adjacent receptors.[8] With implementation of these specific EBMUD Standard Construction Specifications (i.e., use of mufflers and noise source controls and noise barriers), construction noise levels would range from 59 to 89 dBA at the nearest receptors. As such, various phases of construction, including demolition, retaining wall construction, and backfilling, would still exceed the OPC daytime long-term construction threshold of 65 dBA at the nearest sensitive receptors.

To further reduce noise impacts at the nearest sensitive receptors, EBMUD and its Contractor would implement Section 1.3 of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, which is consistent with Oakland Standard Condition of Approval 64 and requires the preparation and implementation of a Noise Control and Monitoring Plan that would define the means and methods for controlling and monitoring demolition noise to reduce construction noise for the Project.

Additionally, consistent with Oakland Standard Condition of Approval 64, Section 3.7, Noise Control, of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, requires EBMUD and its Contractor to notify residents within 300 feet of Project construction in advance of extreme noise-generating activity, thereby allowing residents to plan for construction activities and elevated noise levels. Also consistent with Oakland Standard Condition of Approval 64, EBMUD Procedure 600 requires notification of residents 7 to 14 days in advance of potentially disruptive construction activities (e.g., noise, traffic) including geographical extent of activity and estimated duration of the activity. EBMUD Standard Construction Specification 01 14 00, Work Restrictions, which is consistent with Oakland Standard Condition of Approval Number 62, limits extreme noise-generating construction (i.e., greater than 90 dBA) to the hours of 8:00 a.m. to 4:00 p.m. to avoid the evening, nighttime, and early morning hours when people are most sensitive to noise. Furthermore, as part of EBMUD's Procedure 600, Public Outreach and Community Relations, which is consistent with Oakland Standard Condition of Approval Number 66, EBMUD would designate a Public Affairs liaison to respond to construction-related concerns, including noise levels, from the community. The Public Affairs liaison would be able to coordinate with the EBMUD Project team and Contractor to resolve community concerns, including those related to construction noise.

With implementation of the EBMUD Standard Construction Specifications discussed above, noise from demolition of the existing PP site would occasionally exceed the City daytime long-term noise threshold of 65 dBA. However, EBMUD Standard Construction Specifications have been incorporated into the Project, are consistent with the City's Standard Conditions of Approval, and would be implemented to reduce noise levels, avoid extreme noise-generating construction during the most sensitive periods of the day, notify nearby residents of the construction schedule, and provide an EBMUD Public Affairs liaison to address noise concerns. The standard construction specifications would also require development and implementation of a Noise Control and Monitoring Plan. Because EBMUD

[8] A noise reduction of approximately 5 dBA would be achieved at ground-level receptors where the intervening fence and noise control panels break the receptors' lines of sight to demolition activities at the existing PP. The construction of taller noise control barriers cannot be feasibly implemented due to the rugged topography and space constraints at the site.

would implement all feasible noise control requirements to reduce construction noise levels, impacts would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (Appendix B) lists the applicable standard specifications language.

New PP Construction

Construction of the new PP is anticipated to occur over a period of approximately 62 weeks. As previously discussed, the OPC long-term construction noise thresholds are defined as 65 dBA at residential properties and 70 dBA at commercial properties. Ambient noise levels are estimated to be 70 dBA L_{eq} at the new PP site. Because the ambient noise level exceeds the residential long-term construction noise threshold, the OPC adjusted daytime long-term construction noise threshold is 70 dBA L_{eq} at the new PP site.

Table 3.4.13-4 summarizes construction noise levels by phase and the approximate duration of noise exposure to the nearest sensitive receptor during construction activities. The nearest sensitive receptor is a residential property located at 9607 Elmview Drive, approximately 45 feet south from the new PP structure. Without implementation of EBMUD's standard construction specifications, noise levels during construction of the new PP are anticipated to range from approximately 46 to 81 dBA L_{eq} at the nearest sensitive receptor as shown in Table 3.4.13-4. Construction noise would exceed the OPC's adjusted daytime long-term construction threshold[9] (70 dBA) at adjacent sensitive receptors. Because noise decreases at a rate of approximately 6 dBA per doubling of distance, more distant receptors would experience reduced noise levels. Similar to more distant receptors at the existing PP site, receptors that are not directly adjacent to the new PP site would receive additional noise reduction due to the presence of intervening structures and noise levels are not anticipated to exceed thresholds at these receptors. Noise levels are not anticipated to exceed thresholds at receptors that are not directly adjacent to the construction site.

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 3.7, Noise Control, of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, which includes use of equipment mufflers or other noise source controls. Implementation of noise control requirements identified in Section 3.7, Noise Control, of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, which is consistent with Oakland Standard Condition of Approval 63 and includes use of equipment mufflers, would provide a reduction of up to approximately 5 dBA. Also, in accordance with Section 3.7, Noise Control, of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements and consistent with Oakland Standard Condition of Approval 63, construction of a temporary 12-foot-tall noise barrier along the southern and western boundaries of the site would provide an approximately 15 dBA reduction. As a result, implementation of EBMUD Standard Construction Specifications is anticipated to reduce noise levels by a total of approximately 20 dBA during new PP construction. With implementation of EBMUD Standard Construction Specifications, construction noise levels would range from 26 to 61 dBA at the nearest receptors, as shown in

[9] OPC defines the long-term construction noise threshold as 65 dBA unless ambient noise exceeds 65 dBA. Ambient noise along MacArthur Boulevard is estimated to be 70 dBA L_{dn}; therefore, the long-term construction noise threshold is adjusted to the ambient noise level (70 dBA).

Table 3.4.13-4, thereby reducing construction noise levels to below the OPC's adjusted daytime long-term construction noise threshold.

With implementation of EBMUD Standard Construction Specification, which requires the use of equipment mufflers and noise barriers and is consistent with the City Standard Conditions of Approval, noise from construction of the new PP would not exceed the OPC daytime long-term noise threshold of 65 dBA, nor the OPC's adjusted daytime long-term construction noise threshold of 70 dBA. Because these EBMUD Standard Construction Specifications would be implemented as part of the Project and noise levels would not exceed the OPC daytime long-term noise threshold, impacts would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (Appendix B) lists the applicable standard specifications language.

New Pipeline Construction

Approximately 1,100 feet of new suction pipeline would be constructed underground within 96th Avenue near residential land uses. Approximately 3,650 feet of new underground discharge pipeline would be constructed along MacArthur Boulevard and 99th Avenue bordered by residential and commercial land uses. Residential property lines are located approximately 43 feet from the new suction pipeline alignment and approximately 27 feet from the new discharge pipeline. Table 3.4.13-5 summarizes the construction noise levels by phase and the approximate duration of noise exposure to sensitive receptors during pipeline construction work.

Given the linear nature of the pipeline activities, construction of the new suction and discharge pipelines would move along the alignment, with approximately 80 to 200 feet of pipeline being constructed in a day as stated in the Project Description. Pipeline construction at any given location along the pipeline alignment would occur over a period of approximately 8 days. As such, the OPC short-term construction noise threshold of 80 dBA at residential sensitive receptors, as shown in Table 3.4.13-1, would be the applicable noise threshold for pipeline construction. Without implementation of EBMUD's standard construction specifications, noise levels generated during construction of the new suction and discharge pipelines would range from 84 to 90 dBA at the property line of the nearest receptors as shown in Table 3.4.13-5, which are located along 99th Avenue. All construction phases associated with construction of the suction and discharge pipelines would exceed the OPC short-term construction noise threshold of 80 dBA at the nearest residential property line.

The loudest construction noise associated with pipeline construction would occur during pavement cutting, when noise would reach up to 90 dBA L_{eq} at the residential property line. As stated in the Project Description, pipeline construction would move along the pipeline alignment and therefore would not expose a receptor to more than 5 to 8 days of construction noise. Pavement cutting may expose residents to approximately 5 days of elevated noise levels, with the loudest noise reaching 90 dBA at the property line when pavement cutting equipment is located directly in front of the residence. This maximum noise level of 90 dBA is anticipated to occur for less than one day at a single receptor. For the rest of the 5-day period, pavement cutting noise levels at a single sensitive receptor would range between 70

and 80 dBA L_{eq} when pavement cutting is not located directly in front of the single receptor. Other pipeline construction phases, including excavation, new pipeline construction, backfilling and repaving would generate less noise but would move slower along the alignment. Elevated noise levels are anticipated to occur for up to a total of 8 days at any single location, with 5 days of construction noise exceeding the OPC short-term construction noise threshold (80 dBA at residential land uses).

As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, would be incorporated into the Project, including EBMUD Standard Construction Specification 01 35 44, Environmental Requirements. Section 3.7, Noise Control, of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, which is consistent with Oakland Standard Condition of Approval Number 63, includes use of equipment mufflers or other noise source controls. The use of equipment mufflers and other noise source controls would reduce construction noise by up to approximately 5 dBA[10], depending on the phase. With implementation of EBMUD Standard Construction Specifications (i.e., use of mufflers and noise source controls), construction noise levels for new pipeline construction would range from 79 to 90 dBA at the nearest receptors as shown in Table 3.4.13-5. Various phases of construction, including pavement cutting, excavation, and pipeline construction, would still exceed the OPC daytime short-term construction noise threshold of 80 dBA at the nearest sensitive receptors.

To further reduce noise impacts at the nearest sensitive receptors, EBMUD and its Contractor would implement Section 1.3, Submittals, of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, which is consistent with Oakland Standard Condition of Approval 64 and requires the preparation and implementation of a Noise Control and Monitoring Plan that would define the means and methods for controlling and monitoring construction noise for the Project.

Additionally, consistent with Oakland Standard Condition of Approval 64, Section 3.7, Noise Control, of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, requires EBMUD and its Contractor to notify residents within 300 feet of Project construction in advance of extreme noise-generating activity, thereby allowing residents to plan for construction activities and elevated noise levels. Also, consistent with Oakland Standard Condition of Approval 64, EBMUD Procedure 600 requires notification of residents 7 to 14 days in advance of potentially disruptive construction activities (e.g., noise, traffic) including geographical extent of activity and estimated duration of the activity. Section 1.7, Construction Noise, of EBMUD Standard Construction Specification 01 14 00, Work Restrictions, which is consistent with Oakland Standard Condition of Approval Number 62, limits extreme noise-generating construction (i.e., greater than 90 dBA) to the hours of 8:00 a.m. to 4:00 p.m. to avoid the evening, nighttime, and early morning hours when people are most sensitive to noise. Furthermore, as part of EBMUD's Procedure 600, Public Outreach and Community Relations, which is consistent with Oakland Standard Condition of Approval Number 66, EBMUD would designate a Public Affairs liaison to respond to construction-related concerns, including noise levels, from the community. The

[10] Source controls do not exist for concrete saws; therefore, noise levels adjusted for consideration of Standard Construction Specifications do not include reduction of concrete saw noise.

Public Affairs liaison would be able to coordinate with the EBMUD Project team and Contractor to resolve community concerns, including those related to construction noise.

With implementation of the EBMUD Standard Construction Specifications discussed above, noise from construction of the new pipelines would occasionally exceed the OPC's daytime short-term noise threshold of 80 dBA. However, EBMUD Standard Construction Specifications have been incorporated into the Project, are consistent with the City's Standard Conditions of Approval, and would be implemented to reduce noise levels, avoid extreme noise-generating construction during the most sensitive periods of the day, notify nearby residents of the construction schedule, and provide an EBMUD Public Affairs liaison to address noise concerns. The standard construction specifications would also require development and implementation of a Noise Control and Monitoring Plan. Because EBMUD would implement all feasible noise control requirements to reduce construction noise levels, impacts would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (Appendix B) lists the applicable standard specifications language.

Existing Pipeline Abandonment

Residential property lines are located approximately 22 feet from the pipeline disconnection points. Table 3.4.13-5 summarizes the construction noise levels by phase and the approximate duration of noise exposure to sensitive receptors during pipeline abandonment work.

Abandonment of the existing pipeline would require approximately 5 days to complete at each disconnection point. As such, the OPC short-term construction noise thresholds of 80 dBA at residential sensitive receptors, as shown in Table 3.4.13-1, would be the applicable noise threshold for pipeline abandonment activities. Without implementation of EBMUD's standard construction specifications, noise levels generated during abandonment of the existing pipeline would generate noise ranging from 84 to 92 dBA at the nearest property line as shown in Table 3.4.13-5, which is located approximately 22 feet from the disconnection points. All construction phases associated with abandonment of the existing pipeline would exceed the OPC short-term construction noise threshold of 80 dBA at the nearest residential property line.

The loudest construction phase would be pavement cutting, which would generate noise levels of approximately 92 dBA at the closest receptor. Noise from pavement cutting activities would last less than one day at each disconnection location. Excavation, cutting, filling, and capping the pipe, and backfilling activities would also result in noise increases in excess of the daytime short-term construction noise threshold.

As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, would be incorporated into the Project, including Section 3.7, Noise Control, of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements. Section 3.7, Noise Control, of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, which is consistent with Oakland Standard Condition of Approval Number 63, includes use of equipment mufflers or other noise source controls. The use of equipment mufflers or other noise source controls

would reduce construction noise by up to approximately 5 dBA[11], depending on the phase. With implementation of EBMUD Standard Construction Specifications (i.e., use of mufflers and noise source controls), construction noise levels existing pipeline abandonment would range from 79 to 92 dBA at the nearest receptors as shown in Table 3.4.13-5. Various phases of construction, including pavement cutting and excavation, would still exceed the OPC daytime short-term construction noise threshold of 80 dBA at the nearest sensitive receptors.

To further reduce noise impacts at the nearest sensitive receptors, EBMUD and its Contractor would implement Section 1.3, Submittals, of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, which is consistent with Oakland Standard Condition of Approval 64 and requires the preparation and implementation of a Noise Control and Monitoring Plan that would define the means and methods for controlling and monitoring construction noise for the Project.

Additionally, consistent with Oakland Standard Condition of Approval 64, Section 3.7, Noise Control, of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, requires EBMUD and its Contractor to notify residents within 300 feet of Project construction in advance of extreme noise-generating activity, thereby allowing residents to plan for construction activities and elevated noise levels. Also, consistent with Oakland Standard Condition of Approval 64, EBMUD Procedure 600 requires notification of residents 7 to 14 days in advance of potentially disruptive construction activities (e.g., noise, traffic) including geographical extent of activity and estimated duration of the activity. Section 1.7, Construction Noise, of EBMUD Standard Construction Specification 01 14 00, Work Restrictions, which is consistent with Oakland Standard Condition of Approval Number 62, limits extreme noise-generating construction (i.e., greater than 90 dBA) to the hours of 8:00 a.m. to 4:00 p.m. to avoid the evening, nighttime, and early morning hours when people are most sensitive to noise. Furthermore, as part of EBMUD's Procedure 600, Public Outreach and Community Relations, which is consistent with Oakland Standard Condition of Approval Number 66, EBMUD would designate a Public Affairs liaison to respond to construction-related concerns, including noise levels, from the community. The Public Affairs liaison would be able to coordinate with the EBMUD Project team and Contractor to resolve community concerns, including those related to construction noise.

With implementation of the EBMUD Standard Construction Specifications discussed above, noise from abandonment of the existing pipelines would occasionally exceed the OPC's daytime short-term noise threshold of 80 dBA. However, EBMUD Standard Construction Specifications have been incorporated into the Project, are consistent with the City's Standard Conditions of Approval, and would be implemented to reduce noise levels, avoid extreme noise-generating construction during the most sensitive periods of the day, notify nearby residents of the construction schedule, and provide an EBMUD Public Affairs liaison to address noise concerns. The standard construction specifications would also require development and implementation of a Noise Control and Monitoring Plan. Because EBMUD would implement all feasible noise control requirements to reduce construction noise levels,

[11] Source controls do not exist for concrete saws; therefore, noise levels adjusted for consideration of Standard Construction Specifications do not include reduction of concrete saw noise.

impacts would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (Appendix B) lists the applicable standard specifications language.

Table 3.4.13-4 Calculated Construction Noise Levels at the PP Sites (Long-term Construction Noise Thresholds)

Project Site	Construction Phase	Principal Noise Sources	Duration	Reference Noise Level (50 feet)		Distance to Closest Sensitive Receptor	Adjusted Noise Level at Nearest Receptor (L_{eq})[3]	Noise Reduction from EBMUD SCS[5] and District Procedures	L_{eq} with EBMUD SCS at Nearest Receptor[5]
				L_{max}[1]	L_{eq}[2]				
Demolition of Existing PP	Demolition	Concrete saw, dump truck, excavator, hoe ram, chainsaw	15 Days	99	86	Property line adjoining site. Primary construction, 20 feet from residential property located at 8435 Ney Avenue.	94	-5 dBA for mufflers and similar source controls on dump truck, excavator, hoe ram only.[5] -5 dBA for use of noise control blankets and 6-foot tall redwood/plywood fences. Restrict demolition to 8:00 a.m. to 4:00 p.m. Develop and implement Noise Control and Monitoring Plan. Notify residents within 300 feet prior to construction. Designate Public Affairs liaison to address noise concerns.	84 - 89
	Retaining Wall Construction	Mixer, pump truck	10 Days	88	78		86	-5 dBA for mufflers and similar source controls. Develop and implement Noise Control and Monitoring Plan. Notify residents within 300 feet prior to construction. Designate Public Affairs liaison to address noise concerns.	76
	Backfill	Backhoe, compactor (plate)	5 Days	84	69		77		67
	Site Restoration	Street sweeper	5 Days	81	61		69		59
Construction of New PP	Sidewalk Demolition	Backhoe, mixer, concrete saw, dump truck	2 Days	92	80	Property line adjoining site. Primary construction, 45 feet from residential property located at 9607 Elmview Drive.	81	-15 dBA for a 12-foot-tall temporary noise barrier -5 dBA for mufflers and similar source controls on equipment (excluding concrete saw and chainsaw)	61
	Tree Removal	Chainsaw	3 Days	83	75		76		61
	Grading/ Excavation	Excavator, dozer, backhoe, dump truck, grader	10 Days	92	80		81		61
	Retaining Wall Construction	Mixer, backhoe	10 Days	84	77		58		38
	Building - Exterior	Mixer, pump truck	111 Days	88	81		62		42
	Paving	Compactor (roller), asphalt paving	10 Days	82	76		57		37
	Landscaping/ Fencing	Backhoe	5 Days	84	65		46		26

Notes:

1 L_{eq} is a 12-hour workday average noise level based on the maximum hours per 12-hour workday that each piece of equipment is anticipated to operate.

2 Since it is unlikely that the L_{max} from multiple pieces of construction equipment would occur simultaneously, the L_{max} level given is the highest L_{max} of the individual equipment proposed, not a cumulative L_{max} level.

3 Residential properties adjoin both the existing and new PP sites. The closest residential property line is approximately 20 feet from the primary on-site demolition activities at the existing pumping site and 45 feet from the primary construction activities at the new PP site; therefore, construction noise values provided in the "Adjusted Noise Level at Nearest Receptor" column of this table are calculated at 20 feet for demolition of the existing PP and 45 feet for construction of the new PP.

4 Long-term construction noise threshold at the existing PP site is 65 dBA L_{eq}; Long-term construction noise threshold at the new PP site is 70 dBA due to existing ambient noise levels L_{eq}

5 EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, includes use of noise source controls (e.g., mufflers), which provide approximately 5 dBA of reduction, and noise barriers, which provide an additional 15 dBA reduction, respectively, for a total of approximately 20 dBA of noise reduction. It is important to note that source controls do not exist for concrete saws or chainsaws; therefore, noise levels adjusted for consideration of Standard Construction Specifications do not include reduction of concrete saw or chainsaw noise. Standard Construction Specification 01 14 00, Work Restrictions, limits construction activities that may generate noise in excess of 90 dBA to the hours of 8:00 a.m. to 4:00 p.m., when people are less sensitive to noise.

SCS = EBMUD Standard Construction Specification

Table 3.4.13-5 Calculated Construction Noise Levels for Pipeline Construction and Abandonment (Short-term Construction Noise Thresholds)

Project Site	Construction Phase	Principal Noise Sources	Reference Noise Level (50 feet)		Distance to Closest Sensitive Receptor	Adjusted Noise Level at Nearest Receptor (L_{eq})[3]	Noise Reduction from EBMUD SCS[5] and District Procedures	L_{eq} with EBMUD SCS at Nearest Receptor[5]
			L_{max}[1]	L_{eq}[2]				
Construction of New Pipeline (8 Days at Any Given Location)	Pavement Cutting	Concrete saw	88	85	Property line as close as 43 feet from the suction pipeline and 27 feet from the discharge pipeline	90	Restrict pavement cutting to 8:00 a.m. to 4:00 p.m. Develop and implement Noise Control and Monitoring Plan. Notify residents within 300 feet prior to construction. Designate Public Affairs liaison to address noise concerns.	90
	Excavation	Excavator, backhoe, dump truck	87	81		86	-5 dBA for mufflers and similar source controls Develop and implement Noise Control and Monitoring Plan. Notify residents within 300 feet prior to construction. Designate Public Affairs liaison to address noise concerns.	81
	Pipeline Construction	Forklift, backhoe, generator, welding machine	88	83		88		83
	Backfill/Repaving	Asphalt paving equipment, compactor (roller)	82	79		84		79
Abandonment of Existing Pipeline (5 Days at Each Location)	Pavement Cutting	Concrete saw	92	80	Property line as close as 22 feet from disconnection points	92	Restrict pavement cutting to 8:00 a.m. to 4:00 p.m. Develop and implement Noise Control and Monitoring Plan. Notify residents within 300 feet prior to construction. Designate Public Affairs liaison to address noise concerns.	92
	Excavation	Excavator, backhoe, dump truck	87	81		88	-5 dBA for mufflers and similar source controls. Restrict pavement cutting to 8:00 a.m. to 4:00 p.m. Develop and implement Noise Control and Monitoring Plan. Notify residents within 300 feet prior to construction. Designate Public Affairs liaison to address noise concerns	83
	Pipeline Cut/Fill/Cap	Mixer, generator, pump, welding machine	82	77		84		79
	Backfill/Repaving	Dump truck, compactor (plate), asphalt paver	92	78		85		80

Notes:

1 L_{eq} is a 12-hour workday average noise level based on the maximum hours per 8-hour workday that each piece of equipment is anticipated to operate.

2 Since it is unlikely that the L_{max} from multiple pieces of construction equipment would occur simultaneously, the L_{max} level given is the highest L_{max} of the individual equipment proposed, not a cumulative L_{max} level.

3 The closest receptors are approximately 27 feet from the discharge pipeline and 22 feet from the southernmost disconnection point; therefore, construction noise values provided in the "Adjusted Noise Level at Nearest Receptor" column of this table are calculated at the distance of 27 feet for new pipeline construction and 22 feet for pipeline abandonment.

4 Short-term construction noise threshold for pipeline construction and abandonment is 80 dBA L_{eq}

5 EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, includes use of source controls (e.g., mufflers), which provides an approximately 5-dBA reduction. It is important to note that source controls do not exist for concrete saws; therefore, noise levels adjusted for consideration of Standard Construction Specifications do not include reduction of concrete saw noise. Use of noise barriers is not possible due to the mobile nature of pipeline construction. Standard Construction Specification 01 14 00, Work Restrictions, limits construction activities that may generate noise in excess of 90 dBA to the hours of 8:00 a.m. to 4:00 p.m., when people are less sensitive to noise.

SCS = EBMUD Standard Construction Specification

Construction Truck Trip Generation

Truck traffic for off-hauling, large equipment deliveries, and material deliveries would access the new PP and new pipeline construction sites via the City's designated truck routes on 73rd Avenue and I-880. These trucks would travel to the Project site via I-880 to 73rd Avenue to southbound MacArthur Boulevard, accessing the site on the MacArthur Boulevard side. Trucks exiting the site would exit onto MacArthur Boulevard, proceed south to westbound 98th Avenue, and back to I-880. Trucks traveling to the existing PP and pipeline disconnection points would also use the City's designated truck routes on I-880 and Hegenberger Road/73rd Avenue and then would use MacArthur Boulevard to 82nd Avenue. Once on 82nd Avenue, trucks would be directed to use Golf Links Road and El Monte Avenue to access Ney Avenue and the existing PP.

The City does not define or provide thresholds for traffic noise level increase that is considered substantial. Typically, a permanent increase in the day-night average noise level of 3 dBA L_{dn} or greater at noise-sensitive receptors would be considered significant when projected noise levels would exceed those considered satisfactory for the affected land use (60 dBA L_{dn} for residences) and a permanent increase of 5 dBA L_{dn} or greater would be considered significant when projected noise levels would continue to meet those considered satisfactory for the affected land use (Federal Highway Administration, 2017).

Based on a comparison of existing traffic volumes to existing plus Project construction traffic volumes, Project construction would result in traffic noise increases of approximately 1 dBA or less along Bancroft Avenue, MacArthur Boulevard, and 96th Avenue which would not generally be noticeable or measurable. Due to the lower existing traffic volumes on 99th Avenue as compared to Bancroft Avenue and MacArthur Boulevard and the higher number of projected construction traffic trucks as compared to 96th Avenue, the relative contribution of Project construction traffic to 99th Avenue would be greater than that along Bancroft Avenue, MacArthur Boulevard, and 96th Avenue. Traffic noise levels along 99th Avenue would increase by approximately 3 dBA, from 49 dBA L_{dn} to 52 dBA L_{dn}, at a distance of 50 feet from the center of the roadway, with as many as four truck trips per hour traveling on the roadway during heavy construction. While this noise increase may be noticeable, the increase would be intermittent and temporary (only occur during construction of the Project), and noise levels would continue to be considered compatible with the noise environment. Additionally, the construction traffic noise increases would be below the threshold generally considered for significance for permanent traffic noise increases. Because the increase in noise from Project construction traffic would be negligible (1 dBA or less) and temporary and would be below significance thresholds for permanent traffic noise increases, the noise from increased construction traffic would be less than significant.

Operation

The new PP would include three 300-horsepower vertical turbine pumps located inside a new building and an outdoor electrical transformer, both of which would generate operational noise. Only two of the three pumps are expected to be operated at any given time (one unit is a standby).

The nearest residential property lines to the new PP building are to the west and south at distances of approximately 18 and 26 feet from the face of the new building, respectively. The western building façade would be solid with no openings, the northern and southern façades would have louvered openings installed, and the eastern façade would have one solid single and one solid double door installed. Based on the relative dimensions of the solid wall to louver and door areas, and without consideration of the implementation of any interior to exterior noise control requirements, the sound level produced by the simultaneous operation of two pumps would result in a total noise level of approximately 43 dBA at the western property line and approximately 56 dBA at the southern property line (Panorama, 2021).

Based on noise data collected from pumps with similar power and speed ratings, each pump is expected to produce an A-weighted sound level of 86 dBA at 3 feet in a non-reverberant, open air, environment (Hoover & Keith, 1996). Based on the consideration of a typical reverberant noise buildup within the PP building interior, the calculated sound level for one pump operating within the PP is 90 dBA at 3 feet and 88 dBA at the inside face of the building perimeter. The simultaneous operation of two pumps would result in a total noise level of 91 dBA at the inside face of the building perimeter as shown in Table 3.4.13-6[12]. Accounting for noise reductions of 32 dBA through the western PP wall with no louver and 28 dBA through the southern PP wall with an acoustically rated louver and adjusting for distance, the noise level at the western property line would be 43 dBA and the southern property line would be 44 dBA which would be below the OPC's 45 dBA L_{eq} nighttime threshold. Therefore, noise generated by the operation of the new pumps would be less than significant.

The transformer at the new PP site would be similar to the transformer at the existing PP site and located approximately 7 feet from the nearest residential property line. The existing PP transformer was measured to generate a steady noise level of 48 dBA L_{eq} at 3 feet from the equipment. At a distance of 7 feet, noise levels would be 7 dBA lower, resulting in a noise level of 41 dBA L_{eq} as shown in Table 3.4.13-6, which is approximately 8 dBA below noise levels generated by vehicular traffic along 96th Avenue at this same property line location during peak hours and below the daytime and nighttime thresholds established by the City. Therefore, noise generated by the operation of the transformer would be less than significant.

[12] Individual decibel ratings for different noise sources cannot be added arithmetically to give the sound level for the combined noise from all sources. Instead, the combined noise level produced by multiple noise sources is calculated using logarithmic summation. For example, if one noise source produces a noise level of 50 dBA, then two of the identical sources side by side would generate a combined noise level of 53 dBA, or an increase of only 3 dBA. Equation: $10 \text{ Log}_{10} (10^{5.0}+10^{5.0}) = 53$ dBA

Table 3.4.13-6 Calculated Operational Noise Levels at Nearest Noise Receptor

Noise Source	Reference Noise Level, dBA L_{eq}	Adjustment Provided by Enclosure	Distance to Nearest Receptor	Distance Adjustment, dBA	Adjusted Noise Level, dBA L_{eq}	Exceeds Threshold?
10 mgd vertical turbine pumps (3 total, 2 operating and 1 backup)	91 dBA at inner face of building for two pumps operating simultaneously	-32 dBA on western wall (no louver)	18 feet	-16 dBA	43 dBA	No
	91 dBA at inner face of building for two pumps operating simultaneously	-16 dBA on southern wall -12 dBA from acoustical louver Total adjustment: -28 dBA	26 feet	-19 dBA	44 dBA	No
Transformer	48 dBA at 3 feet	Included in measured level	7 feet	-7 dBA	41 dBA	No

b. Less than Significant Impact.

Vibration Background and Terminology

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 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. Minor cosmetic damage to buildings can occur at vibration levels as low as 0.5-in/sec PPV for single-event sources (Federal Transit Administration, 2018).

Established Vibration Standards

The City does not establish a vibration limit for construction. Caltrans recommends the following vibration limits to avoid cosmetic damage to structures:

- 0.25 in/sec PPV for historic structures
- 0.5 in/sec PPV for new residential and modern commercial/industrial structures

Potential construction-related vibration impacts at structures near each Project site area were analyzed using the Caltrans recommended limits. A significant impact would occur if the

groundborne vibration levels from construction exceed 0.25 in/sec PPV at historic structures and/or 0.5 in/sec PPV at new residential or modern commercial/industrial structures.

Construction
Demolition and construction activities required for construction often generate perceptible vibration and levels that could affect nearby structures when heavy equipment or impact tools (e.g., jackhammers, hoe rams) are used in the vicinity of nearby sensitive land uses. Building damage generally falls into three categories:

1. Cosmetic damage (also known as threshold damage) is defined as hairline cracking in plaster, the opening of old cracks, the loosening of paint or the dislodging of loose objects.
2. Minor damage is defined as hairline cracking in masonry or the loosening of plaster.
3. Major structural damage is defined as wide cracking or the shifting of foundation or bearing walls.

Residential structures are as close as 20 feet from the existing PP, 12 feet from the new PP site, 43 feet from the new suction pipeline, and 27 feet from the new discharge pipeline. Table 3.4.13-7 presents construction vibration levels at a reference distance of 25 feet and at various distances (representative of nearby structures) from various heavy construction equipment. Vibration levels would vary depending on soil conditions, construction methods, and equipment used. Vibration levels are highest closest to the source, and then attenuate with increasing distance at the rate $(D_{ref}/D)^{1.1}$, where D is the distance from the source in feet and D_{ref} is the reference distance of 25 feet.

As shown in Table 3.4.13-7, construction vibration is not anticipated to exceed the threshold for cosmetic damage from normal conventional construction (0.5 in/sec PPV) if structures are located 12 feet or further from any Project construction activities. There are no structures located within 12 feet of construction activities.

Construction vibration would be anticipated to exceed the threshold for cosmetic damage to historic structures (0.25 in/sec PPV) if historic structures are located 21 feet or closer to clam shovel drop activities or operation of vibratory rollers. All other Project construction equipment would be anticipated to generate vibration levels below the historic structure threshold at distances of 10 feet or greater. Vibration levels would be lower as construction moves away from nearby structures or when lower-vibration construction equipment and methods are used; however, exceedance of cosmetic damage thresholds could occur when vibratory rollers are used within 21 feet of historic structures.

Table 3.4.13-7 Vibration Levels for Construction Equipment at Various Distances

Equipment		PPV (in/sec) at Given Distance				
		12 feet	20 feet	25 feet	50 feet	70 feet
Clam Shovel Drop		0.453	0.258	0.202	0.094	0.065
Hydromill (Slurry Wall)	In soil	0.018	0.010	0.008	0.004	0.003
	In rock	0.038	0.022	0.017	0.008	0.005
Vibratory Roller		0.471	0.268	0.210	0.098	0.068
Hoe Ram		0.200	0.114	0.089	0.042	0.029
Large bulldozer		0.200	0.114	0.089	0.042	0.029
Caisson drilling		0.200	0.114	0.089	0.042	0.029
Loaded trucks		0.170	0.097	0.076	0.035	0.024
Jackhammer		0.078	0.045	0.035	0.016	0.011
Small bulldozer		0.007	0.004	0.003	0.001	0.001

Source: (Federal Transit Administration, 2018) modified by Illingworth & Rodkin, Inc., September 2021.

Construction of the new PP, demolition of the existing PP, and pipeline construction would not require the use of a clam shovel drop; however, vibratory rollers would be used for compacting soils during construction of the new PP, demolition of the existing PP, and construction of suction and discharge pipelines. Historic structures are not located within 21 feet of any of the Project sites or pipeline alignment, where vibratory rollers may be periodically used (National Register of Historic Places, September 2020).

As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, would be incorporated as part of the Project, including Section 1.3.H, Vibration Control and Monitoring Plan, and Section 3.6, Vibration Control, of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements. Section 1.3.H, Vibration Control and Monitoring Plan, requires the preparation and implementation of a Vibration Control and Monitoring Plan that details the means and methods for controlling and monitoring surface vibration generated by demolition and other work, and Section 3.6, Vibration Control, limits surface vibration to no more than 0.5 in/sec PPV measured at the nearest residence or other sensitive structure.

With implementation of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, including Section 1.3.H, Vibration Control and Monitoring Plan, and Section 3.6, Vibration Control, which require preparing and implementing a Vibration Control and Monitoring Plan and limiting surface vibration to no more than 0.5 in/sec PPV, and because there are no historic structures located within 21 feet of any of the Project sites subject to the 0.25 in/sec PPV construction vibration threshold, vibration impacts would result in a less than significant impact. The EBMUD Practices and Procedures Monitoring and Reporting Plan (Appendix B) lists the applicable standard specifications language.

Operation
Operational equipment is not anticipated to generate perceptible levels of vibration off-site resulting in a less than significant impact.

c. No Impact.

The Project is not located within the vicinity of a private airstrip or a public airport and would not expose people residing or working in the Project area to excessive aircraft noise levels, resulting in no impact.

REFERENCES

City of Oakland, City of Oakland General Plan, Noise Element, March 2005.

City of Oakland, Standard Conditions of Approval, November 5, 2018.

City of Oakland, Planning Code 17.120.050, June 4, 2019. Retrieved from https://library.municode.com/ca/oakland/codes/planning_code?nodeId=TIT17PL_CH17.120PEST_17.120.050NO.

City of Oakland, Municipal Code 8.18.010, June 12, 2020. Retrieved from https://library.municode.com/ca/oakland/codes/code_of_ordinances?nodeId=TIT8HESA_CH8.18NU.

EBMUD, Standard Construction Specification 01 14 00, Work Restrictions, October 28, 2019.

EBMUD, Standard Construction Specification 01 35 44, Environmental Requirements, August 31, 2018.

EBMUD, Procedure 600, Public Outreach and Community Relations, December 3, 2018.

Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual. *Report Number 0123*, September 2018.

Panorama, Fontaine Pumping Plant Replacement Project Noise Technical Report, September 2021.

US DOT, Highway Traffic Noise Analysis and Abatement Policy and Guidance, June 1995.

US Department of Interior, National Register of Historic Places (U.S. National Park Service) (nps.gov), September 2020. Retrieved from https://www.nps.gov/subjects/nationalregister/index.htm.

3.4.14 Population and Housing

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

DISCUSSION

a. No Impact.

The Project would not induce population growth by making additional water supply available for new development. The Project rehabilitates and replaces existing facilities to improve operational flexibility and reliability of the existing water distribution system for existing customers. The new PP would have the same pumping capacity as the existing PP. The existing customers are all within EBMUD's Ultimate Service Boundary, which is a defined service and growth boundary adopted by EBMUD. Therefore, the Project is not extending growth into a new area or creating momentum for new development within the existing area.

b. No Impact.

No housing presently exists at the Project sites; therefore, the proposed Project would not displace people or housing.

3.4.15 Public Services

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

DISCUSSION

a. No Impact.

The Project replaces an existing PP and constructs new pipelines. The Project would not generate a need for any new public facilities (schools, fire and/or police protection, parks, etc.), because it does not induce population and employment growth. Workers at the Project sites are likely to commute from the existing Bay Area labor supply. Any deterioration of existing public facilities resulting from construction (e.g., streets) would be restored by EBMUD to preconstruction condition upon completion of construction. There would be no impacts associated with new or physically altered governmental facilities.

3.4.16 Recreation

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

DISCUSSION

a. No Impact.

The Project would not generate or attract additional population, as would be associated with residential, commercial or industrial uses; therefore, it would not affect demand for recreational facilities.

b. No Impact.

The Project consists exclusively of water distribution system facilities and does not require the construction or expansion of recreational facilities.

3.4.17 Transportation

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

DISCUSSION

The transportation and traffic impact analysis is based upon the Fontaine Pumping Plant Replacement Project Transportation and Traffic Technical Report (Panorama, 2021) that includes the results of trip distribution estimates, data collection, and traffic impact analysis completed for the existing PP site, existing pipeline abandonment disconnection sites, new PP site and new pipeline alignments. The transportation and traffic impact analysis considers both operational and construction impacts associated with the proposed Project.

The transportation and traffic impact analysis for the Project conservatively focuses on maximum concurrent construction activities (i.e., new PP construction occurring simultaneously with new pipeline construction) on traffic because the period of maximum concurrent construction related traffic is most likely to trigger significant impacts and the need for mitigation. Other construction activities with less traffic would be expected to have less impact compared to the maximum construction traffic condition.

Project Trip Generation

Project trip generation estimates were calculated by using the largest number of hourly one-way worker and truck trips during overlapping Project phases. Project trip generation at the existing PP site reflects the period of maximum construction traffic impacts during retaining wall construction and backfill, while Project trip generation at the new PP site reflects the period of maximum construction traffic impacts during concurrent pipeline and PP construction.

All workers are assumed to arrive during the AM peak hour and to depart during PM peak hour. Peak hour traffic is the hour in which the four highest traffic volume 15-minute periods (consecutive) fall during the typical two-hour AM and PM commute periods. There is an AM and a PM peak hour. The AM (7:00 a.m. to 9:00 a.m.) and PM (4:00 p.m. to 6:00 p.m.) commute periods are generally considered the peak flow of traffic during the weekday periods. The maximum hourly one-way worker trips are 26 trips at the new PP site and 10 trips at the existing PP site as shown in Table 3.4.17-1.

The truck trip estimates account for the maximum number of trucks going to and leaving the Project sites in one hour. The maximum hourly one-way truck trips are 12 trips during the overlap between new PP and new pipeline construction and 4 trips during the existing PP demolition and existing pipeline abandonment disconnection construction. The maximum hourly one-way truck trips are added to the AM and PM peak hour worker trips to get the maximum one-way hourly total (worker plus truck) trips. The Project trip generation estimates are summarized in Table 3.4.17-1.

Table 3.4.17-1 Project One-Way Trip Generation Estimates

Trip Type	Average Daily Trips [a]	Maximum Daily Trips [a]	Average Hourly Trips [a]	Maximum Hourly Trips [a]
Existing PP Demolition and Pipeline Disconnection (Concurrent)				
Workers [b]	14	20	7	10
Trucks [c]	10	26	2	4
Total Trips	**24**	**46**	**9**	**14**
New PP Construction and Pipeline Installation (Concurrent)				
Workers [b]	28	52	14	26
Trucks [c]	20	94	3	12
Total Trips	**48**	**146**	**17**	**38**

[a] Trips refer to the number of inbound and/or outbound trips expected to occur. All trip calculations assume that existing PP demolition and existing pipeline disconnection would occur concurrently, and new PP construction and pipeline installation would also occur concurrently. This assumption was incorporated to conservatively account for the maximum number of trips that could occur as a result from Project construction activities.

[b] Average and maximum one-way hourly worker trips from Chapter 2.0, Project Description, Table 2.1, Construction Activities Associated with the Project, are conservatively assumed to occur only during the AM and PM peak hour. Each worker would arrive during the AM peak hour and leave during the PM peak hour.

[c] Hourly one-way truck trips are calculated by averaging the daily trips over eight hours, rounded up to the nearest whole number.

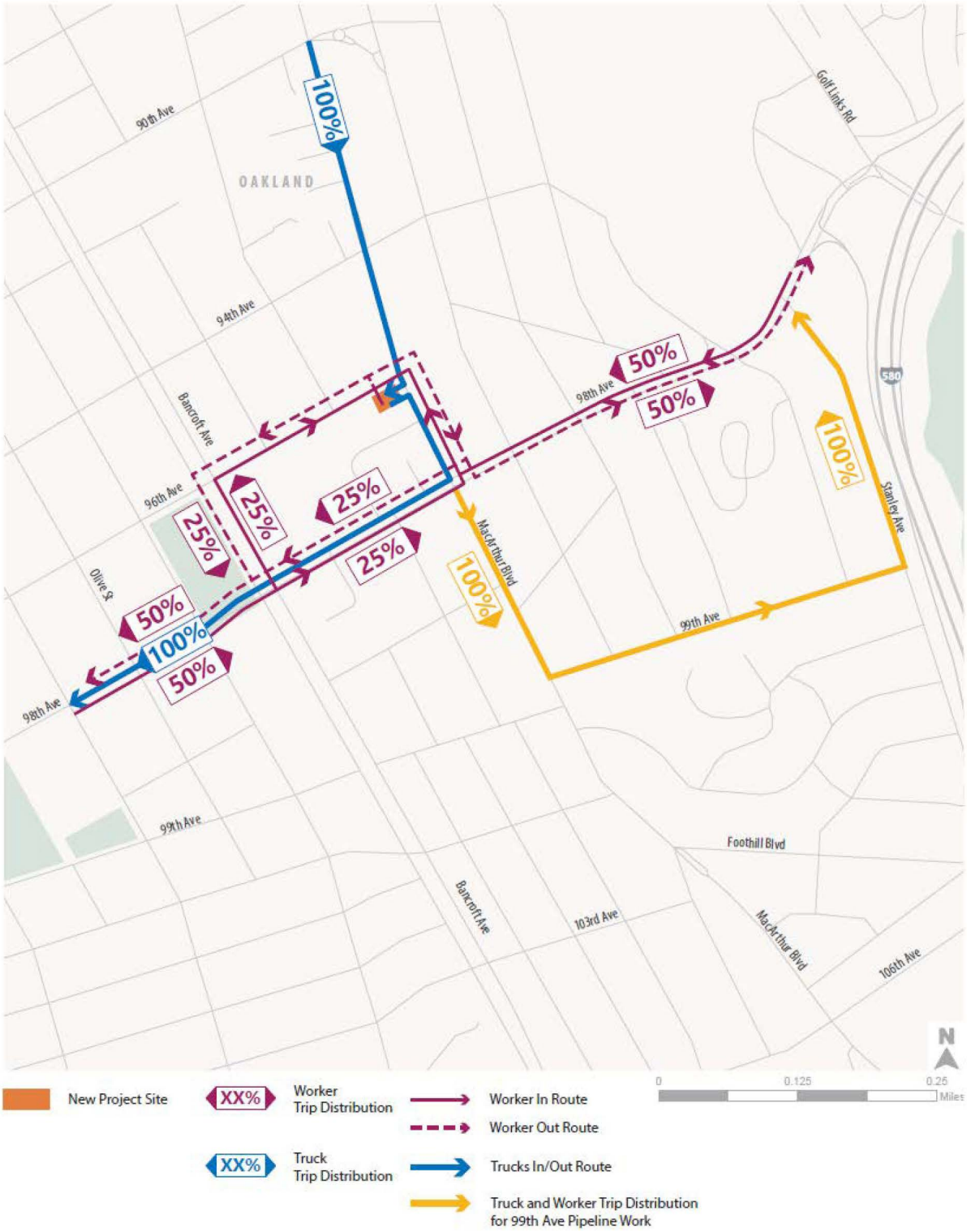
Project Trip Distribution

Construction workers are assumed to be non-local residents. As such, and as shown on Figure 3.4.17-1, it is assumed that approximately 25 percent of workers would access the new PP site via I-880 to 98th Avenue to MacArthur Boulevard, 25 percent would access the new PP site via I-880 to 98th Avenue to Bancroft Avenue to 96th Avenue, and 50 percent would access the new PP site via I-580 to 98th Avenue to MacArthur Boulevard. Of the workers traveling to the new PP site via I-580 to 98th Avenue to MacArthur Boulevard, it is assumed that roughly 50 percent would proceed northbound through the 96th Avenue/MacArthur Boulevard intersection to park on MacArthur Boulevard, and 50 percent would turn left at the 96th Avenue/MacArthur Boulevard intersection to park on 96th Avenue. For worker trips to the existing PP site during PP demolition and to the existing pipeline abandonment disconnection location sites, as shown on Figure 3.4.17-2, it is estimated that approximately 50 percent of workers would access the existing PP site via 82nd Avenue to Golf Links Road to El Monte Avenue to Ney Avenue, and exit via Aster Avenue to 82nd Avenue. The remaining 50 percent of workers would access the existing PP via Fontaine Street to Golf Links Road to El Monte Avenue to Ney Avenue and exit via the same route.

Project-related truck traffic for off-hauling, large equipment deliveries, and material deliveries would access the Project sites via City-designated truck routes on I-880 and Hegenberger Road/73rd Avenue. Although 98th Avenue is the most direct route to the new PP site, 98th Avenue is not a City-designated truck route and is a comparatively lower volume arterial street. Trucks are also not recommended on International Boulevard because the corridor has recently been redesigned to a single vehicle lane in each direction to accommodate dedicated bus-only lanes.

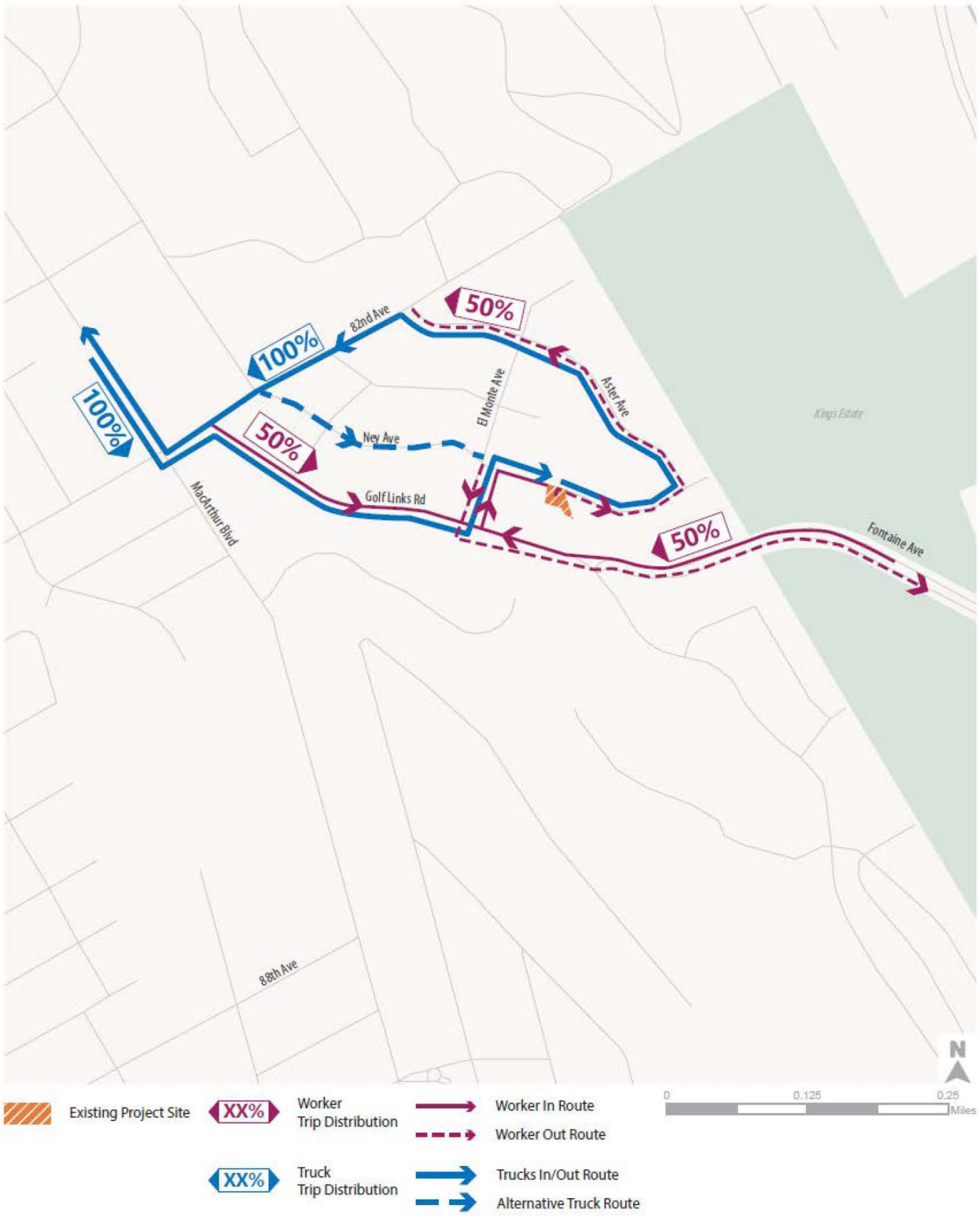
To ease truck turning movements, all trucks are assumed to travel to the new PP site via I-880 to Hegenberger Road/73rd Avenue to southbound MacArthur Boulevard, accessing the new PP site on the MacArthur Boulevard side. Trucks exiting the new PP are assumed to exit onto MacArthur Boulevard, proceed south to westbound 98th Avenue, and back to I-880. The assumed truck route plan at the new PP site is shown on Figure 3.4.17-3. The counterclockwise truck route shown on Figure 3.4.17-3 minimizes the number of truck turns to access the site and allows the trucks to utilize the new PP site's MacArthur Boulevard frontage without using 96th Avenue, which is a local residential street.

Truck traffic would access the existing PP site during demolition as shown on Figure 3.4.17-4. Trucks would use the City-designated truck routes on I-880 and Hegenberger Road/73rd Avenue and then use MacArthur Boulevard to 82nd Avenue. Once on 82nd Avenue, trucks would use Golf Links Road and El Monte Avenue to access Ney Avenue and the existing PP site. Because of the steepness of El Monte Avenue, some trucks may be required to use 82nd Avenue to access Ney Avenue. Leaving the site, trucks are assumed to use Aster Avenue and then back to 82nd Avenue. The clockwise truck route near the existing PP site allows the trucks to utilize the existing PP site's frontage. Due to the narrow roads and significant grade changes along the recommended truck route serving the existing PP site, haul trucks may be limited to 9-cubic-yard capacity. For the purposes of the analysis, haul trucks serving the existing PP site are conservatively assumed to be limited to 9-cubic-yard capacity.



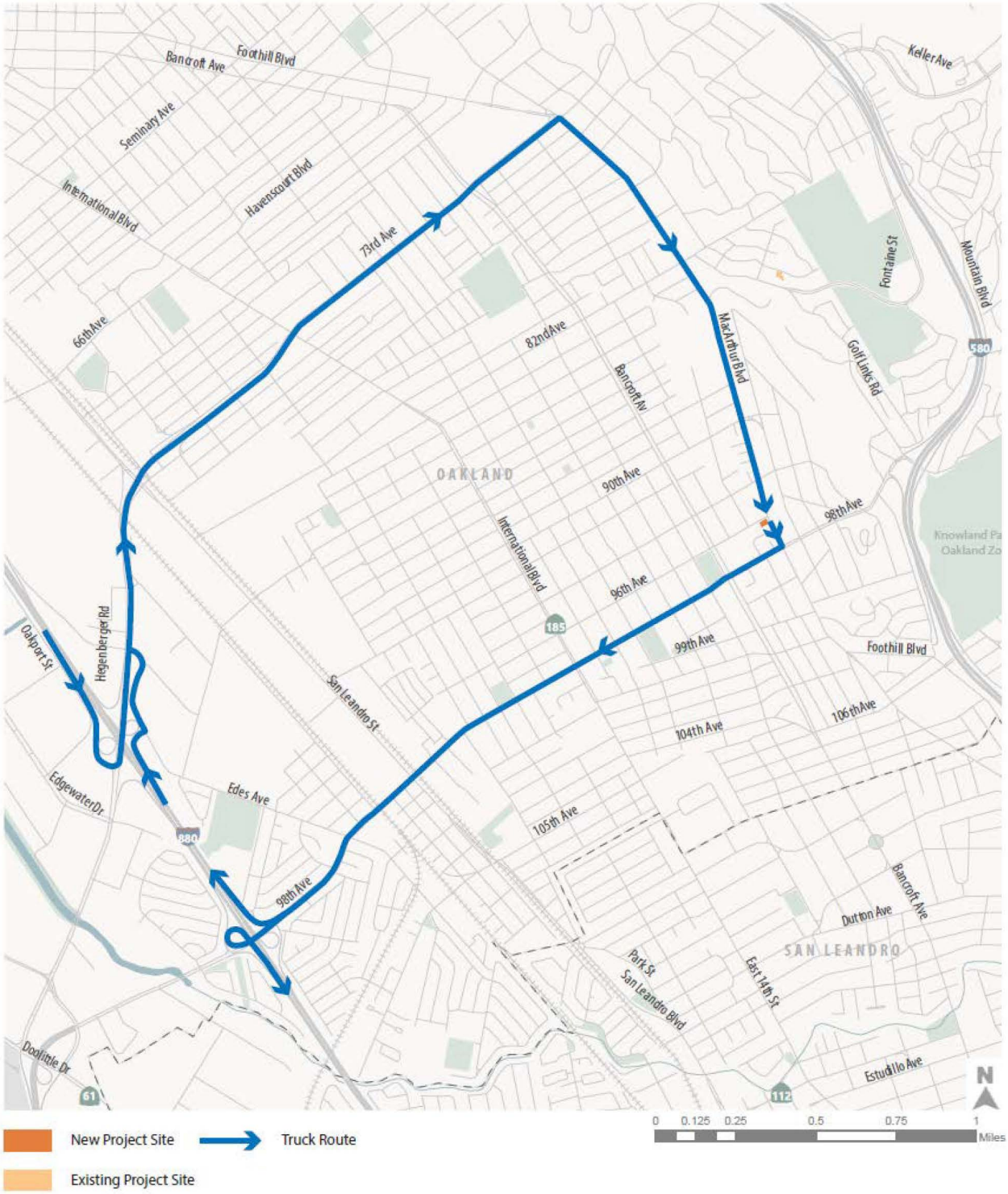
Worker and Truck Trip Distribution for New PP and New Pipeline Alignment Construction

Figure 3.4.17-1

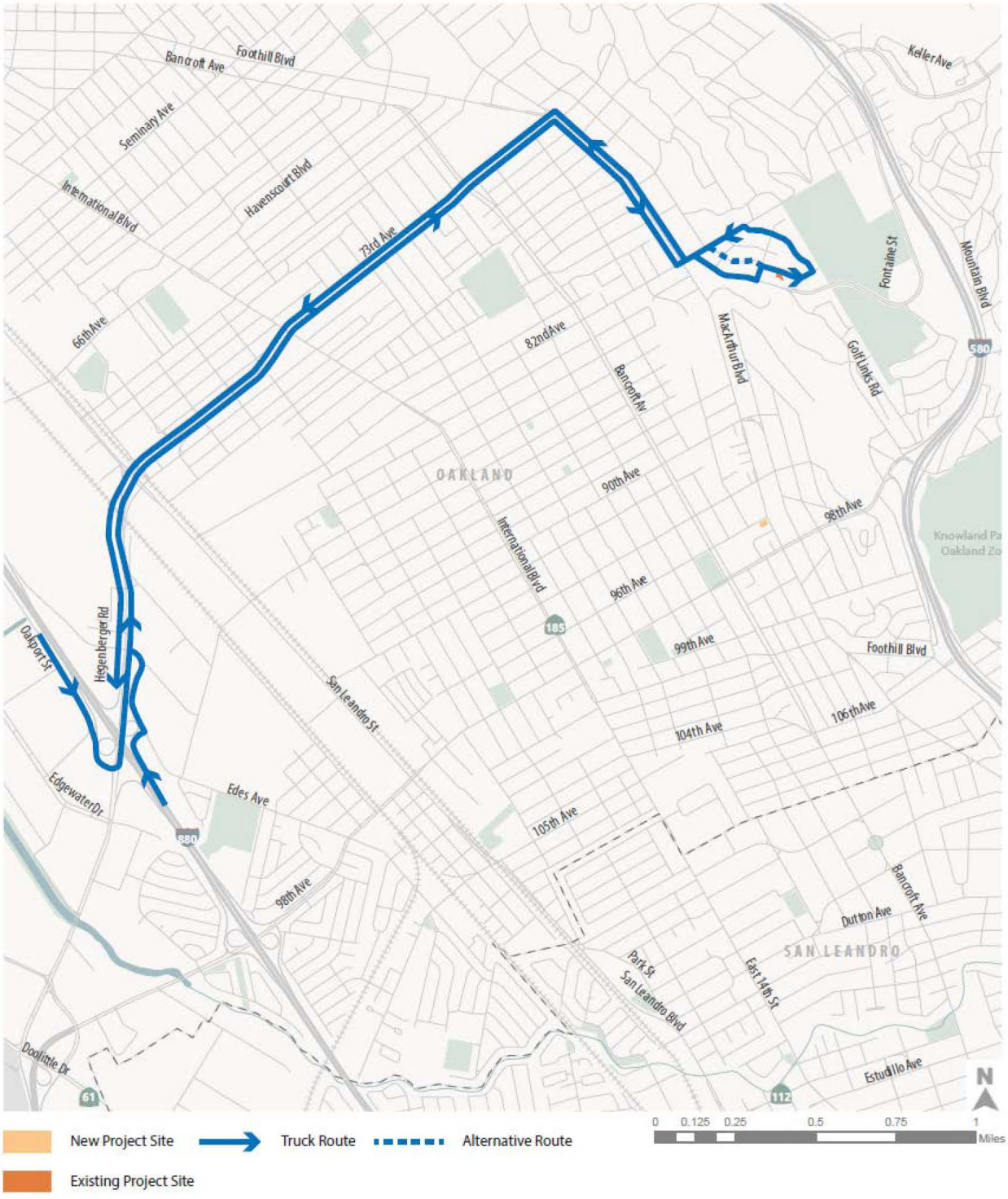


Worker and Truck Trip Distribution for Existing PP Construction and Existing Pipeline Abandonments

Figure 3.4.17-2



Truck Routing Plan for New PP Construction and New Pipeline Alignment
Figure 3.4.17-3



Truck Routing Plan for Existing PP Demolition and Existing Pipeline Abandonment

Figure 3.4.17-4

a. Less than Significant Impact with Mitigation.

Construction

The Project would generate short-term increases in vehicle trips by construction workers and construction vehicles on area roadways. Construction-generated traffic would be temporary and, therefore, would not result in long-term degradation in operating conditions or level of service on Project area roadways. The City does not require an analysis of intersection operations unless a project would generate more than 800 peak-hour vehicle trips on a long-term basis. Although, the Project would result in no more than 14 maximum hourly trips at the existing PP site and 38 maximum hourly trips at the new PP site during AM and PM peak-hours, an intersection operational analysis was performed for locations where maximum construction activities would occur at both the existing and new PP sites to provide information on projected intersection operating conditions with the addition of Project traffic and to identify any deficiencies (such as highly congested conditions that could lead to hazardous conditions for vehicles, bicycles, and pedestrians). The operational analysis evaluates transportation impacts for the following three traffic scenarios:

- **Existing Plus Project Construction** – Existing conditions with added maximum anticipated construction traffic.
- **Construction-Year Plus Project Construction** –Projected construction-year baseline traffic conditions with added maximum anticipated construction traffic.
- **Project Operation** – Post-construction when the Project would be expected to generate two vehicle trips per month for routine maintenance.

Existing Plus Project Construction

As shown in Table 3.4.17-1, the Project would generate a maximum total of 146 daily vehicle trips, including 52 worker vehicle trips and 94 truck trips, during the peak construction period at the new PP site, while the Project would generate a maximum total of 46 daily vehicle trips, including 20 worker vehicle trips and 26 truck trips, during the peak construction period at the existing PP site.

Using the hourly trip generation estimates and the trip distribution described above, Existing Plus Project segment traffic volumes were determined for the Project's construction phase. For a conservative analysis, it was assumed that all worker vehicle trips would travel to the Project sites during the AM peak hour and leave during the PM peak hour. It was also assumed that the hourly truck trips would arrive at the Project sites and leave the Project sites during each peak hour.

Peak hour volumes for the Existing Plus Project scenario were used to evaluate intersection operations at two intersections at the existing PP and five intersections at the new PP and pipeline alignments. Peak hour volumes for the Existing Plus Project scenario, which are shown on Figure 3.4.17-5, were used to evaluate intersection operations. Peak hour intersection operations with maximum construction traffic volumes assigned to the Project area roadway network are summarized in Table 3.4.17-2. Trucks behave differently than

passenger vehicles as they take longer to accelerate, decelerate, and negotiate turns. As such, they affect intersection and roadway operations differently. For the purposes of intersection operations analysis, truck trips are analyzed as passenger car equivalent (PCE), using a ratio of 1:2 (one truck is equivalent to two cars).

Due to the COVID-19 pandemic, traffic volumes have decreased, resulting in atypical and non-representative traffic levels in the area. As a result, alternative methods to estimate current traffic volumes were used. Traffic volumes were estimated for each study intersection through a combination of GIS analysis and traffic counts collected in 2015 by Fehr & Peers for the Oak Knoll Mixed Use Community Project EIR in East Oakland, which summarizes recent traffic volumes in the Project area and includes analysis of some of the same intersections studied in both projects. To estimate traffic generation on Ney Avenue, El Monte Avenue, 96th Avenue, and 99th Avenue, it was assumed that these streets only serve as local residential streets and are not used for through traffic. Alameda County parcel data was analyzed in GIS to estimate the number of residential units using the study intersections during the peak hours. Near the existing PP site and existing pipeline disconnection points, approximately 58 dwelling units are served by the Ney Avenue and El Monte intersections and approximately 64 dwelling units are served by the Golf Links Road and El Monte Avenue intersection. Near the new PP site and new pipelines, approximately 172 dwelling units are served by 96th Avenue and approximately 100 dwelling units are served by 99th Avenue. The dwelling units were distributed between the Bancroft Avenue intersection and the MacArthur Boulevard intersection on 96th Avenue and between the MacArthur Boulevard intersections and Stanley Avenue intersection on 99th Avenue.

Dwelling units were multiplied by the trip generation rate provided in the Institute of Transportation Engineers Trip Generation Manual, 10th Edition for Single-Family or Low-Rise Multifamily land use codes depending on the housing type coded to each parcel. For intersections allowing left, right, and through movements, traffic assignment was based on area land use patterns and thus 45 percent turn right, 45 percent turn left, and 10 percent proceed straight. If a straight movement is not allowed, the traffic was distributed equally to the right- and left-turn movements. The outputs of the analysis provided existing traffic volume estimates for coming from and going to Ney Avenue, El Monte Avenue, 96th Avenue, and 99th Avenue.

The outputs of the analysis were then combined with northbound and southbound traffic movements derived from counts collected in 2015 at the Golf Links Road intersection with Fontaine Street and the 98th Avenue intersections with Bancroft Avenue, MacArthur Boulevard, and Stanley Avenue. Using traffic data from these intersections, the northbound and southbound traffic on Golf Links Road, Bancroft Avenue, MacArthur Boulevard, and Stanley Avenue was calculated. The northbound and southbound traffic was multiplied by one percent per year growth factor for five years to establish existing traffic. The one percent growth factor is consistent with the upper bounds of growth used by Caltrans when forecasting traffic in Alameda County.[13] This guidance has been applied to multiple highway improvement projects on I-880, I-580, and I-680 over the past 20 years.

[13] For comparison, the 2015 Oak Knoll Mixed Use Community Project EIR included the MacArthur Boulevard/98th Avenue intersection as a study intersection and used a growth rate of 0.9 percent for future conditions analysis.

Table 3.4.17-2 Existing Plus Project Intersection Operations

Intersection		Control	Peak Hour	Existing		Existing Plus Project	
				Delay[a]	LOS	Delay[a]	LOS
Existing PP and Pipeline Disconnection Points							
1.	Ney Avenue/El Monte Avenue	Side-Street Stop	AM	6.7 (9.3)	A (A)	7.2 (9.3)	A (A)
			PM	8.0 (9.2)	A (A)	8.1 (9.3)	A (A)
2.	Golf Links Road/El Monte Avenue	All-Way Stop	AM	12.4	B	12.6	B
			PM	10.1	B	10.2	B
New PP and Pipelines							
3.	Bancroft Avenue/96th Avenue	Side-Street Stop	AM	1.1 (21.6)	A (C)	1.1 (21.7)	A (C)
			PM	0.9 (24.4)	A (C)	1.1 (27.3)	A (D)
4.	MacArthur Boulevard/96th Avenue	Side-Street Stop	AM	0.2 (12.9)	A (B)	0.4 (13.5)	A (B)
			PM	0.2 (13.1)	A (B)	0.3 (12.0)	A (B)
5.	MacArthur Boulevard/98th Avenue	Signal	AM	30.2	C	30.4	C
			PM	30.3	C	30.8	C
6.	MacArthur Boulevard/99th Avenue	Side-Street Stop	AM	0.5 (11.5)	A (B)	0.7 (11.8)	A (B)
			PM	0.4 (11.7)	A (B)	0.8 (11.9)	A (B)
7.	Stanley Avenue/99th Avenue	Side-Street Stop	AM	0.8 (10.4)	A (B)	1.3 (11.1)	A (B)
			PM	0.8 (10.6)	A (B)	1.3 (11.6)	A (B)

[a] Average vehicle delay in seconds. For side-street stop control intersections, average delay is listed first and delay for the worst approach is shown in parentheses

Intersection Level of Service (LOS) is used to rank traffic operation on various types of facilities, based on traffic volumes and roadway capacity, using a series of letter designations ranging from A to F. LOS measures the operational effectiveness of a roadway or intersection. LOS A represents relatively free-flow conditions with little delay at intersections and LOS F represents a significantly congested condition where traffic flows can exceed design capacities resulting in long vehicle delays.

As shown in Table 3.4.17-2, The LOS for the worst approach at the Bancroft Avenue/96th Avenue intersection is expected to degrade from C to D in the PM peak hour with the addition of Project construction traffic. Project construction traffic at all other intersections is not expected to increase the average LOS. Since 2017, the City has not had a policy on intersection LOS, and this reduction in LOS would not conflict with any program, plan, policy, ordinance or addressing traffic circulation. Impacts would be less-than-significant.

Construction-Year Plus Project Construction

The Construction-Year Plus Project Construction scenario represents estimated construction-year baseline traffic conditions with the addition of the proposed maximum construction activity Project traffic volumes. The maximum proposed Project traffic volumes were added to the estimated construction-year baseline traffic projections to develop the traffic forecasts. Intersection LOS for Construction-Year Plus Project Construction conditions are summarized in Table 3.4.17-3 and peak hour volumes are shown on Figure 3.4.17-6. For the purposes of intersection operations analysis, truck trips are analyzed as PCE.

Figure 3.4.17-5 Existing Peak Hour Intersection Volumes, Lane Configurations and Traffic Controls

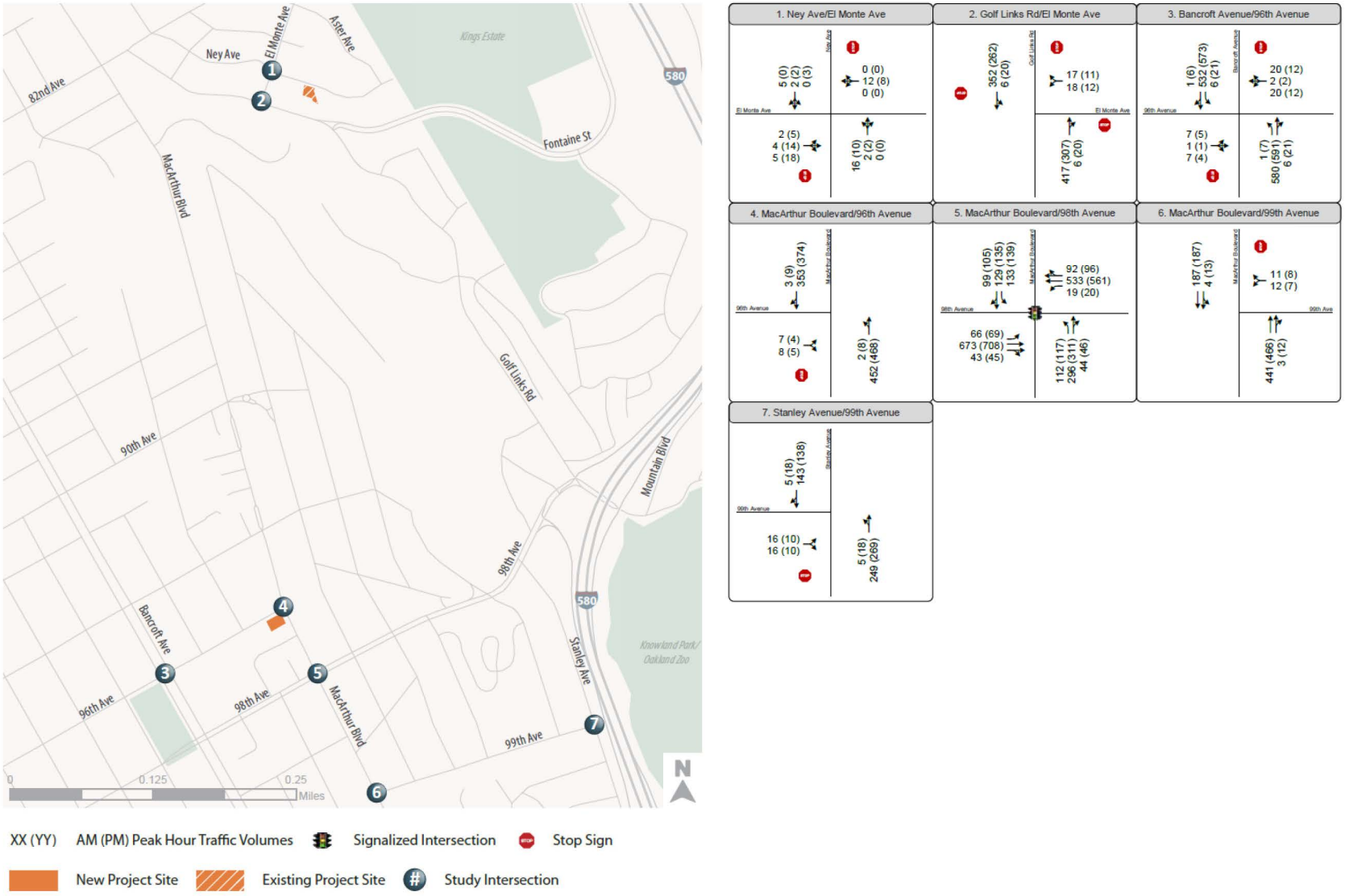
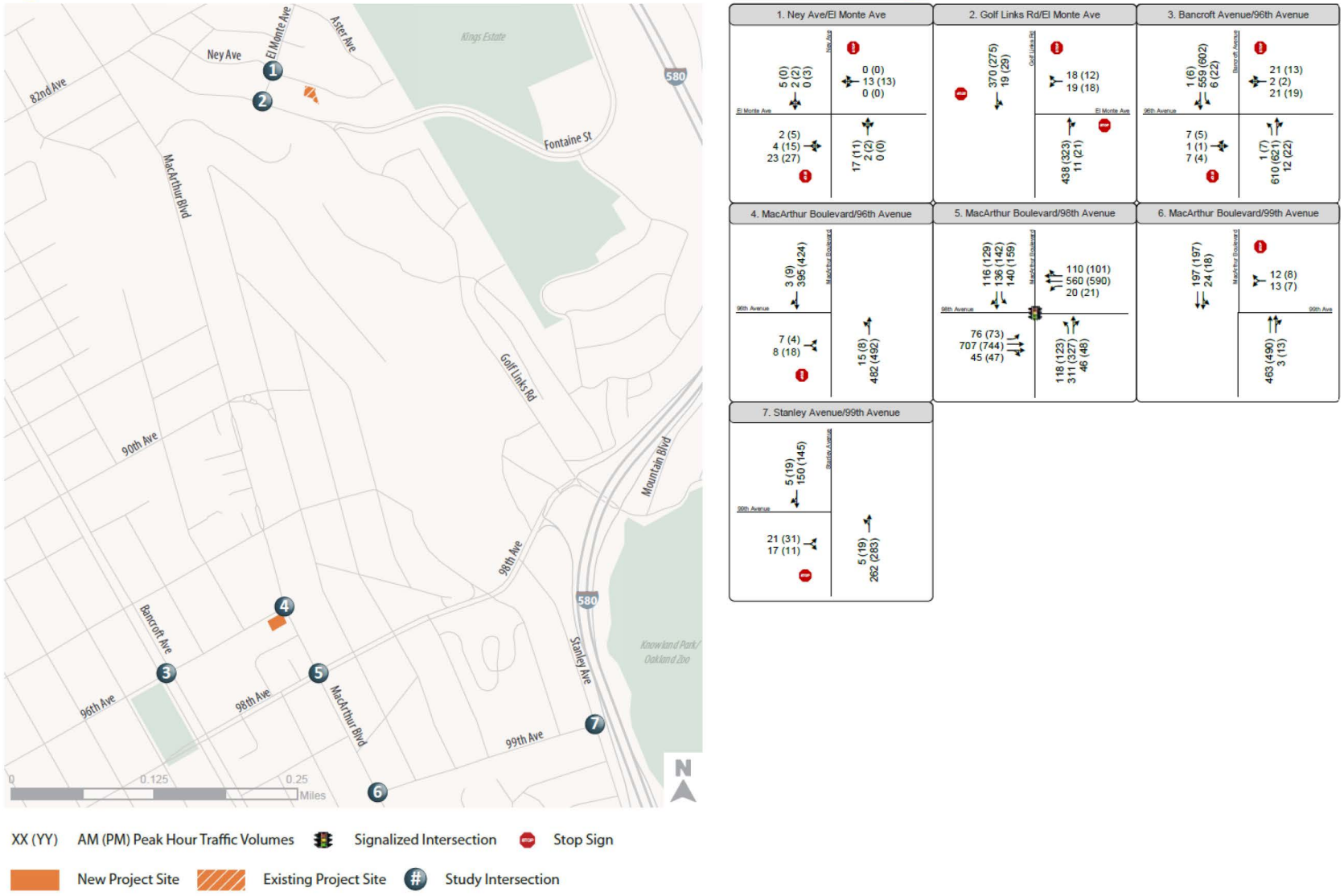


Table 3.4.17-3 Construction-Year Plus Project Peak Hour Intersection Levels of Service

Intersection	Control	Peak Hour	Baseline		Baseline Plus Project	
			Delay[a]	LOS	Delay[a]	LOS
Existing PP and Pipeline Disconnection Points						
1. Ney Avenue/El Monte Avenue	Side-Street Stop	AM	6.9 (9.4)	A (A)	7.3 (9.4)	A (A)
		PM	8.0 (9.3)	A (A)	8.1 (9.3)	A (A)
2. Golf Links Road/El Monte Avenue	All-Way Stop	AM	13.0	B	13.3	B
		PM	10.4	B	10.5	B
New PP and Pipelines						
3. Bancroft Avenue/96th Avenue	Side-Street Stop	AM	1.1 (23.5)	A (C)	1.1 (23.6)	A (C)
		PM	1.0 (26.5)	A (D)	1.2 (29.9)	A (D)
4. MacArthur Boulevard/96th Avenue	Side-Street Stop	AM	0.2 (13.2)	A (B)	0.3 (13.9)	A (B)
		PM	0.2 (13.5)	A (B)	0.3 (12.3)	A (B)
5. MacArthur Boulevard/98th Avenue	Signal	AM	31.2	C	31.4	C
		PM	32.3	C	33.0	C
6. MacArthur Boulevard/99th Avenue	Side-Street Stop	AM	0.5 (11.7)	A (B)	0.7 (12.1)	A (B)
		PM	0.4 (12.0)	A (B)	0.5 (12.0)	A (B)
7. Stanley Avenue/99th Avenue	Side-Street Stop	AM	0.8 (10.6)	A (B)	1.0 (10.8)	A (B)
		PM	0.8 (10.8)	A (B)	1.3 (11.9)	A (B)

[b] Average vehicle delay in seconds. For side-street stop control intersections, average delay is listed first followed by (delay for the worst approach

Figure 3.4.17-6 Construction-Year Peak Hour Intersection Volumes, Lane Configurations and Traffic Controls



The addition of Project construction traffic in the estimated construction-year is not expected to degrade the average LOS or worst-approach LOS of any study intersection, as compared to construction-year baseline conditions. The Project would not conflict with any program, plan, policy, ordinance or addressing traffic circulation, and impacts would be less-than-significant.

Pedestrian Facilities
There may be temporary impacts to sidewalk access at the Project sites during construction activities associated with pipeline trench excavation, equipment and material delivery, driveway installations, and utility relocations. During existing pipeline abandonment disconnection and existing PP demolition, pedestrian facilities along Ney Avenue, 82nd Avenue, Aster Avenue, and Golf Links Road may be impacted. Pedestrian facilities on 96th Avenue, MacArthur Boulevard, and 99th Avenue may be impacted during new pipeline and new PP construction. Otherwise, sidewalks are anticipated to be open to the public at all times.

Specific traffic control requirements are provided in the 2017 City's *Supplemental design guidance: Accommodating pedestrians, bicyclists, and bus facilities in construction zones*. This guidance specifies that any blockage of a sidewalk along major transit corridors must be mitigated through a sidewalk diversion and does not allow for sidewalk detours. A sidewalk diversion is a temporary path created with traffic barriers for pedestrians to circumvent a construction-related obstacle whereas a sidewalk detour is a sidewalk closure with signage directing pedestrians to use an alternative path. MacArthur Boulevard is the only roadway classified as a major transit corridor.

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 3.4, Temporary Traffic Control, of EBMUD Standard Construction Specification 01 55 26, Traffic Regulation, which requires that sidewalks be kept open if safe for pedestrians and, if alternative pedestrian routes are required, signage would be installed to direct pedestrians to detour routes. However, use of a sidewalk detour (and not a sidewalk diversion) along MacArthur Boulevard, which is considered a major transit corridor according to the City's *Supplemental design guidance: Accommodating pedestrians, bicyclists, and bus facilities in construction zones*, would conflict with the City Complete Streets Policy and the City's Supplemental design guidance: *Accommodating pedestrians, bicyclists, and bus facilities in construction zones*. To mitigate potential conflicts with City policies and guidance, EBMUD would implement the following:

> **Mitigation Measure TRA-1: MacArthur Boulevard Pedestrian Diversion.** A temporary pedestrian diversion shall be provided around any sidewalk obstruction to maintain the pedestrian path of travel along the sidewalk corridor on MacArthur Boulevard at the new PP site. The temporary pedestrian diversion, if necessary, shall be clearly identified, wheelchair usable, shielded from motor vehicle traffic, and free of pedestrian hazards such as holes, debris, gravel, mud, etc. All temporary pedestrian diversion routes must keep and maintain a minimum 5.5-foot clear width

for pedestrian access. Pedestrian access plans shall be reviewed and approved by the City's Department of Transportation (OakDOT) prior to construction and included in the Project's Traffic Control Plan.

With implementation of EBMUD Standard Construction Specification 01 55 26, Traffic Regulation, including Section 3.4, Temporary Traffic Control, and Mitigation Measure TRA-1, the Project would not conflict with any programs, plans, or policies related to pedestrian facilities because alternative pedestrian routes would be provided for safe pedestrian travel around construction zones, therefore impacts would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (Appendix B) lists the applicable standard specifications language.

Bicycle Facilities

According to the City's Transportation Impact Review Guidelines, a project would have a significant effect on the environment if it would conflict with a plan, ordinance, or policy addressing the safety or performance of the circulation system, including transit, roadways, bicycle lanes, and pedestrian paths. Specific traffic control requirements are provided in the 2017 City's *Supplemental design guidance: Accommodating pedestrians, bicyclists, and bus facilities in construction zones*. Existing bike lanes must remain clear (minimum 5 feet) unless bike lane closure is specifically approved as part of a Traffic Control Plan and a reasonable accommodation for an alternate bicycle path of travel is implemented. Existing bicycle facilities near the new PP site and new pipeline alignment include a designated Class 2 Bike Lane on Bancroft Avenue with striped lanes in both the north and south direction, a Class 2 Bike Lane on 98th Avenue extending west from the Bancroft Avenue intersection, and a Class 3 Bike Route on Stanley Avenue. There are no bicycle facilities near the existing PP or existing pipeline abandonment disconnection sites. The increased construction traffic on public roadways would potentially decrease the safety of bicyclists because local users may not be accustomed to the presence of large construction vehicles.

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 1.2, Submittals, of 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 circulation on local streets. The Traffic Control Plan may include requirements such as signs, flashing lights, barricades, and other traffic safety devices to minimize impacts on circulation on the streets surrounding the Project sites.

With implementation of EBMUD Standard Construction Specification 01 55 26, Traffic Regulation, including Section 1.2, Submittals, which requires implementation of a Traffic Control Plan that includes, but is not limited to, the use of temporary traffic signs, flashing lights, barricades, markings and flaggers, the Project would not conflict with any programs, plans, or policies related to bicycle facilities, and impacts would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (Appendix B) lists the applicable standard specifications language.

Transit Facilities

According to the City's Transportation Impact Review Guidelines, a project would have a significant effect on the environment if it would conflict with a plan, ordinance, or policy addressing the safety or performance of the circulation system, including transit, roadways, bicycle lanes, and pedestrian paths. Project impacts during construction have the potential to conflict with the City's Public Transit and Alternative Modes Policy by blocking bus stops requiring closure or temporary relocation. The disconnection of the existing pipeline would include at most one lane closure on Golf Links Road, potentially requiring the short-term closure or relocation of the AC Transit bus stop serving lines 46, 46L, and 646 at the Golf Links Road/Fontaine Street intersection. The construction of the new PP and new pipeline would require haul trucks and delivery trucks that arrive from southbound MacArthur Boulevard and some of these trucks may temporarily stage during work hours along the southbound curb both north and south of 96th Avenue because of the relatively small size of the new PP site. Truck staging that extends north of 96th Avenue would conflict with the existing AC Transit bus stop at MacArthur Boulevard and 96th Avenue serving bus lines 57, 90, and 98. The nearest alternative bus stops are located approximately 600 feet north and 600 feet south of 96th Avenue. The Project would, therefore, require the temporary closure or relocation of the bus stop located at McArthur Boulevard and 96th Avenue. Pipeline construction on MacArthur Boulevard between 96th and 99th Avenues may also conflict with other bus stops on MacArthur Boulevard requiring temporary closure or relocation. Temporary closure or relocation of bus stops would require prior approval by AC Transit and OakDOT. Closure of a transit stop would conflict with the City's Complete Streets Policy and the City's *Supplemental design guidance: Accommodating pedestrians, bicyclists, and bus facilities in construction zones*. To mitigate potential conflicts with City policies and guidance, EBMUD would implement the following:

> **Mitigation Measure TRA-2: Golf Links Road and MacArthur Boulevard Bus Stop Relocation/Short-Term Closure.** EBMUD shall coordinate with and obtain written approval from AC transit and OakDOT for the temporary relocation or closure of any bus stops along Golf Links Road to accommodate existing pipeline abandonment disconnection, and along MacArthur Boulevard required to accommodate new PP and new pipeline construction. Any parking obstruction, sidewalk obstruction, travel lane obstruction, or other accommodation required for the closed or temporary bus stop shall be proposed through an obstruction permit application and documented in the Project's Traffic Control Plan.

With implementation of Mitigation Measure TRA-2, the Project would not conflict with any programs, plans, or policies related to transit facilities because coordination and approval for short-term bus stop closure or temporary relocation would be completed with AC transit and OakDOT, and impacts would be less than significant.

Parking

Although no CEQA significance criterion addresses parking, the temporary loss of on-street vehicle parking along construction routes was considered in this analysis. On-street parking is available along 96th Avenue, MacArthur Boulevard, and 99th Avenue in the vicinity of the new PP site and pipelines and along Ney Avenue, El Monte Avenue, Aster Avenue, 82nd Avenue, and southbound Golf Links Road near the existing PP and existing pipeline

abandonment disconnection points. It is expected that construction workers would find available on-street parking and walk to work sites. Through observations of aerial imagery, it is concluded that there is adequate on-street parking within one to two blocks of work sites to accommodate construction worker parking throughout the construction period.

New pipeline construction requires a work zone with a minimum 25-foot-wide easement that would temporarily restrict on-street parking within the work zone. As the work zone moves with the pipeline construction on-street parking restrictions would also shift. In addition, construction of the new PP may require temporary truck staging on southbound MacArthur Boulevard approaching 96th Avenue. There is adequate on-street parking during the construction work hours to accommodate these temporary parking restrictions. Because on-street parking is typically underutilized, the loss of parking is not expected to inconvenience local residents.

Operation

All roadways and sidewalks would be restored after construction is complete and operation of the Project would generate approximately two roundtrips per month for routine maintenance and inspection of the facility. Operation of the proposed Project would have a negligible effect on traffic circulation and not conflict with any program plans, ordinances, or policies addressing the circulation system. No impact would occur during operation.

b. Less than Significant Impact.

CEQA Guidelines Section 15064.3, contains new criteria that were certified and adopted in December 2018. Section 15064.3 states that Vehicle Miles Traveled (VMT) is the most appropriate metric to assess transportation impacts. On September 21, 2016, the City Planning Commission updated Oakland's CEQA Thresholds of Significance Guidelines to adopt a shift in transportation impact analysis under CEQA from a focus on automobile delay, as measured by LOS and similar metrics, toward a focus on reducing VMT.

Consistent with the City's guidelines, VMT impacts would be less than significant for a project if any of the identified screening criteria outlined below are met:

1. **Small Projects**: The project generates fewer than 100 vehicle trips per day.
2. **Low-VMT Areas**: The project meets map-based screening criteria by being in an area that exhibits below-threshold VMT, or 15 percent or more below the regional average.
3. **Near Transit Stations**: The project is in a Transit Priority Area or within one-half mile of a Major Transit Corridor or Stop[14] and satisfies the following:
    a. Has a Floor Area Ratio (FAR) of more than 0.75,
    b. Does not include more parking for use by residents, customers, or employees of the project than other typical nearby uses, or more than

[14] "Major transit stop" is defined in CEQA Section 21064.3 as a rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods.

required by the City (if parking minimums pertain to the site) or allowed without a conditional use permit (if minimums and/or maximums pertain to the site),

c. Is consistent with the applicable Sustainable Communities Strategy (as determined by the lead agency, with input from the Metropolitan Transportation Commission).

Construction and Operation

Construction of the Project would on average generate 46 daily worker and truck trips at the new PP site and on average 24 daily worker and truck trips at the existing PP site. The construction phase of the Project satisfies the "Small Projects" screening criteria as construction would generate fewer than 100 vehicle trips per day. Furthermore, once constructed, the Project would generate approximately two trips per month, similar to existing conditions and operation of the existing PP. Because the Project would generate trips that are less than those identified in the City's VMT screening criteria, the Project would not conflict with or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b), and impacts related to VMT would be less than significant.

c. Less than Significant Impact.

Construction

Construction of the Project would not modify the geometric design features of any publicly accessible roadway. An increase in hazards due to presence of construction equipment within roadways could occur during construction of the new pipelines.

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 2.1, Traffic Control Devices, of EBMUD Standard Construction Specification 01 55 26, Traffic Regulation, which requires the Contractor incorporate various traffic control requirements into a Traffic Control Plan that reduce potential for traffic hazards including the use of temporary traffic signs, flashing lights, barricades, markings and flaggers.

With implementation of EBMUD Standard Construction Specification 01 55 26, Traffic Regulation, including Section 2.1, Traffic Control Devices, which requires implementation of a Traffic Control Plan that includes, but is not limited to, the use of various traffic control requirements that reduce potential for traffic hazards, impacts related to construction traffic hazards from the Project would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (Appendix B) lists the applicable standard specifications language.

Operation

All roadways and sidewalks would be restored after construction is complete. No impact would occur during operation.

d. Less than Significant Impact.

Construction

NEY AVENUE

One of the three existing pipeline abandonment disconnection location points is at the existing PP site on Ney Avenue. Pipeline abandonment at this location could potentially require full road closure, which would result in inadequate emergency vehicle access.

82ND AVENUE, ASTER AVENUE, AND GOLF LINKS ROAD

The remaining two of three existing pipeline abandonment disconnection location points are at the intersection of 82nd Avenue and Aster Avenue and at the intersection of Golf Links Road and Fontaine Street. Construction at these two disconnection points could potentially require one-lane closures on 82nd Avenue, Aster Avenue, and Golf Links Road. No lane or road closures are anticipated on Fontaine Street. Closure of one lane would still accommodate adequate emergency response vehicle access. However, if any full road closures are required to accommodate disconnection construction activities, potential impacts to emergency vehicle access could occur.

96TH AND 99TH AVENUES

New pipeline installation would require a 25-foot-wide work area for pipeline trenching, truck staging, and vehicle parking. 96th and 99th Avenues are approximately 30 feet wide. New pipeline installation would require closure of the segment of 96th Avenue between Bancroft Avenue and MacArthur Boulevard as well as closure of the segment of 99th Avenue between MacArthur Boulevard and Stanley Avenue. Closure of 96th and 99th Avenues may result in inadequate emergency vehicle access.

MACARTHUR BOULEVARD

MacArthur Boulevard is approximately 50 feet wide and would also require an approximately 25-foot-wide work area for new pipeline installation including pipeline trenching, truck staging, and vehicle parking for Project construction. As a result, the Project would require closure of approximately half of MacArthur Boulevard within the work zone; leaving adequate street width to maintain two-way traffic flow. In the event that any full road closures are required to accommodate construction activities, potential impacts to emergency vehicle access could occur.

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 1.2, Submittals, and Section 3.0, Execution, of EBMUD Standard Construction Specification 01 55 26, Traffic Regulation, which require preparation of a Traffic Control Plan that includes a description of emergency response vehicle access. If the road or area is completely blocked, preventing access by an emergency responder, a contingency plan that provides immediate emergency response vehicle access must be included. The Traffic Control Plan must conform to the most current version of the Caltrans

Manual of Traffic Controls for Construction and Maintenance Work Zones and the Manual on Uniform Traffic Control Devices.

With implementation of EBMUD Standard Construction Specification 01 55 26, Traffic Regulation, including Section 1.2, Submittals, and Section 3.0, Execution, which require implementation of a Traffic Control Plan that includes the development of an emergency vehicle access plan that would require a contingency plan for immediate emergency response vehicle access for streets with full road closures, and providing adequate street width to maintain two-way traffic flow on MacArthur Boulevard thereby allowing emergency vehicle access at all times, impacts related to emergency vehicle access on any roadway impacted by the Project would be less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (Appendix B) lists the applicable standard specifications language.

Operation

All roadways and sidewalks would be restored to pre-Project conditions after construction is complete. No impact would occur during operation.

REFERENCES

Panorama, Fontaine Pumping Plant Replacement Project Transportation and Traffic Technical Report, September 2021.

EBMUD, Standard Construction Specification 01 55 26, Traffic Regulation, February 9, 2017.

Alameda County Transportation Commission (Alameda CTC), Congestion Management Program, 2017.

Alameda-Contra Costa Transit District, Bus System Map, 2021. Available online at http://www.actransit.org/.

Caltrans, Truck Networks on California State Highways, 2020. Available online at http://www.dot.ca.gov/hq/traffops/trucks/truckmap/truckmap-d04.pdf.

Caltrans, Truck Route List, 2020. Available online at http://www.dot.ca.gov/hq/traffops/trucks/truckmap/truck-route-list.xls.

City of Oakland, Envision Oakland – City of Oakland General Plan Land Use and Transportation Element, March 1998.

City of Oakland, Resolution Adopting a Complete Streets Policy to Further Ensure that Oakland Streets Provide Safe and Convenient Travel Options for All Users, January 3, 2013.

City of Oakland, Oakland Walks! 2017 Pedestrian Plan Update, 2017.

City of Oakland, City of Oakland Transportation Impact Review Guidelines Land Use Development Projects, April 14, 2017.

City of Oakland, Supplemental design guidance: Accommodating pedestrians, bicyclists, and bus facilities in construction zones, 2017.

City of Oakland, Let's Bike Oakland, 2019 Oakland Bike Plan, May 2019.

City of Oakland, Truck Routes, 2020. Available online at https://www.arcgis.com/home/webmap/viewer.html?webmap=8cd63bb6e50042d994d2e29e8308c950&extent=-122.3566,37.6323,-122.0192,37.9202.

3.4.18 Tribal Cultural Resources

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

DISCUSSION

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.

EBMUD maintains an Archaeological Resources GIS database that is updated annually with the results of a records search of the NWIC of the California Historical Resources Information System. A GIS survey of the existing PP site, three existing pipeline abandonment disconnection sites, new PP site, and new pipeline alignment found no recorded occurrences of archaeological resources within the immediate vicinity (half mile) of any of the Project sites. However, the potential for inadvertent discovery of cultural resources is a potential impact.

EBMUD has not received any requests from tribes for Project notifications under PRC Section 21080.3.1(b)(1). However, EBMUD contacted the NAHC on August 24, 2020 for a search of the Sacred Lands files for any cultural resources that may be within or adjacent to the Project. EBMUD also requested a list of Native American individuals/organizations that may have

knowledge of cultural resources within the Project sites. The NAHC responded on August 26, 2020, noting that no significant resources had been recorded in the Sacred Lands files, and provided a list of seven tribes that are affiliated with the Project sites. EBMUD subsequently sent letters to all seven tribes affiliated with the Project area on September 10, 2020 regarding the Project, via certified return receipt, to all of the tribes on the NAHC list. To date, none of the tribes have responded to EBMUD.

a.i through a.ii. Less than Significant Impact.

The results of the background research of EBMUD's Archeological Resources GIS indicates that there are no archaeological tribal cultural resources within any of the Project sites and that there is a low potential to uncover resources during Project implementation. Despite the low archaeological sensitivity, the possibility of inadvertent discovery 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 Section 3.9, Protection of Cultural and Paleontological Resources, of EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements, which requires appropriate cultural resources management practices and complies with statutory requirements. Specifically, Section 3.9, Protection of Cultural and Paleontological Resources, 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.

With implementation of EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements, including Section 3.9, Protection of Cultural and Paleontological Resources, which requires implementation of procedures that address the inadvertent discovery of cultural resources and ensures compliance with legal requirements regarding the protection of such resources, the Project's construction impacts related to tribal cultural resources are less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (Appendix B) lists the applicable standard specifications language.

REFERENCES

EBMUD, Standard Construction Specification, Section 01 35 44, Environmental Requirements, August 31, 2018.

3.4.19 Utilities and Service Systems

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

DISCUSSION

a. No Impact.

The Project would not include or require new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunication facilities. Therefore, there would be no impact associated with relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunication facilities.

b. No Impact.

The Project would not require additional water supplies; rather, the Project would ensure continuation of existing water supplies for existing and reasonably foreseeable future development demands during normal, dry and multiple dry years by replacing existing aging infrastructure, improving reliability and providing redundancy, as needed.

c. No Impact.

The Project would not generate long-term wastewater outputs, as the Project replaces facilities within a closed, potable water distribution system.

d. and e. Less than Significant Impact.

Construction
The Project would generate construction debris from demolition of the existing PP, construction of the new PP, and pipeline trenching and excavation of in-place soils. Construction debris would only be generated during construction and the impact would therefore be temporary. Soils and any solid waste encountered during demolition, construction, and trenching and excavations would be disposed of at an appropriate landfill.

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 1.3.C, Construction and Demolition Waste Disposal Plan, of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, which includes submittal of a Construction and Demolition Waste Disposal Plan that:

- Identifies how the Contractor would remove, handle, transport, and dispose of all materials 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 disposal of removed materials.
- Requirements for removing, handling, transporting, and disposing of any waste material (except liquid wastes addressed in the Water Control and Disposal Plan).
- Includes a list of reuse facilities, recycling facilities and processing facilities that would be receiving recovered materials.
- Identifies each type of waste material to be reused, recycled or disposed of, and the estimated amount, by weight.
- Includes a sampling and analytical program for characterizing any waste material, as needed, prior to reuse, recycling or disposal.
- Identifies the disposal method for soil and the approved disposal site and includes written documentation that the disposal site would accept the waste. Prior to disposition of wastes, the Contractor must submit copies to EBMUD of waste profile forms and correspondence between the Contractor and the disposal facility. Prior to disposal of hazardous wastes, the Contractor must submit copies of the waste manifests to EBMUD and provide documentation that the waste hauler is regulated by the state to transport hazardous wastes.

With implementation of Section 1.3.C, Construction and Demolition Waste Disposal Plan, of EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements, which includes provisions for identifying disposal methods for soil, reusing or recycling construction debris, and the approved disposal site, Project impacts from generating solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals for the Project would be

less than significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (Appendix B) lists the applicable standard specifications language.

Operation
The Project would not generate long-term solid waste outputs, as the Project upgrades and replaces facilities within a closed, potable water distribution system.

REFERENCES

EBMUD. Standard Construction Specification 01 35 44, Environmental Requirements. August 31, 2018.

3.4.20 Wildfire

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

DISCUSSION

a. Less than Significant Impact.

Construction

The City has adopted Emergency Management Plans that provide a general framework for local agencies to implement emergency response and evacuation procedures. Construction of the new pipelines could require full and/or partial closure of roadways, which could impede emergency access during these closures.

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 1.2, Submittals, of EBMUD Standard Construction Specification 01 55 26, Traffic Regulation, which requires the preparation and submittal of a Traffic Control Plan that conforms to the most current version of the Caltrans Manual of Traffic Controls for Construction and Maintenance Work Zones and requires that the Traffic Control Plan include 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.

With implementation of the requirements specified in EBMUD Standard Construction Specification 01 55 26, Traffic Regulation, including Section 1.2, Submittals, which requires the preparation and submittal of a Traffic Control Plan, impacts to an adopted emergency response plan or emergency evacuation plan during construction would be less than

significant. The EBMUD Practices and Procedures Monitoring and Reporting Plan (Appendix B) lists the applicable standard specifications language.

Operation
Operation of the new PP and pipelines would not require lane or road closures and would not impair or physically interface with an adopted emergency response plan or emergency evacuation plan. No impacts to emergency response or evacuation plans from operation of the Project would occur.

b. No Impact

The proposed Project does not include any new facilities or structures that would be occupied. Therefore, there would be no impact of the Project that would expose Project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.

c. and d. No Impact

Although the Project does contain construction of new infrastructure including the new PP structure and the underground pipeline, the new infrastructure would be located completely in urban/suburban areas and would not be located within a mapped landslide area. Therefore, there is no impact from the Project due to 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 or expose people or structures to post-wildfire risks including flooding, landslides, slope instability or drainage changes.

REFERENCES

CAL FIRE, Fire Hazard Severity Zones in SRA, 2007. Map. Scale 1:100,000.

CAL FIRE, Very High Fire Hazard Severity Zones in LRA (Oakland), 2008. Map. Scale 1:40,000.

City of Oakland, City of Oakland General Plan, Safety Element Maps, November 2004. Available at: http://www2.oaklandnet.com/oakca1/groups/ceda/documents/webcontent/oak035222.pdf.

EBMUD, Standard Construction Specification 01 55 26, Traffic Regulation, February 9, 2017.

3.4.21 Mandatory Findings of Significance

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

DISCUSSION

a. Less than Significant with Mitigation Incorporated.

The Project has the potential to degrade the quality of the environment. However, as described in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project. For impacts related to Air Quality, Biological Resources, Cultural Resources, Energy, Geology and Soils, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Hydrology and Water Quality, Noise, Tribal Cultural Resources, and Utilities and Service Systems, the relevant EBMUD standard practices and procedures discussed in the MND ensure that impacts would be less than significant.

Further, as described in the MND above, the Project has the potential to cause significant impacts related to Aesthetics and Transportation. Mitigation measures have been identified to reduce these impacts to less than significant levels. No further mitigation would be required, and the Project would not degrade the quality of the environment (see Sections 3.4.1 to 3.4.20 above for detailed analysis).

The Project has the potential to degrade the quality of the environment. The impact from construction night lighting on nighttime views could be potentially significant. However, this

impact would be reduced to less than significant levels through implementation of Mitigation Measure AES-1. For additional discussion of Mitigation Measure AES-1, please refer to Section 3.4.1, Aesthetics. No further mitigation would be required. The impact from construction on pedestrian routes could be potentially significant. However, this impact would be reduced to less than significant levels through implementation of Mitigation Measure TRA-1. The impact from construction on bus stops requiring closure or temporary relocation could be potentially significant. However, this impact would be reduced to less than significant levels through implementation of Mitigation Measure TRA-2. For additional discussion of Mitigation Measures TRA-1 and TRA-2, please refer to Section 3.4.17, Transportation. No further mitigation would be required.

The Project does not have the potential to substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, reduce the number or restrict the range of a rare or endangered plant or animal, threaten to eliminate a plant or animal community, or eliminate important examples of the major periods of California history or prehistory, as described in the Biological Resources, Cultural Resources, and Tribal Cultural Resources environmental discipline sections of the document. No further mitigation would be required.

b. Less than Significant Impact.

As described in the document above, the Project has the potential to cause significant impacts related to Aesthetics and Transportation. Mitigation measures have been identified that would reduce these impacts to less than significant levels.

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. For impacts related to Air Quality, Biological Resources, Cultural Resources, Energy, Geology and Soils, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Hydrology and Water Quality, Noise, Tribal Cultural Resources, and Utilities and Service Systems, the relevant EBMUD standard practices and procedures discussed in the MND ensure that impacts would be less than significant.

For any impacts to act cumulatively on any past, present, or any reasonably foreseeable projects, these projects would have to have individual impacts in the same resource areas at the same time and in the same localized area as the proposed Project. A review of projects near the Project sites found the following past, current and probable future projects:

<u>Alameda County Transportation Commission</u>
- East Bay Bus Rapid Transit (complete)

<u>Caltrans</u>
- 580 Rehabilitation/Roadway Improvement Project (complete)

<u>City of Oakland</u>
- Oak Knoll Mixed Use Community (expected completion 2024)

EBMUD

- Golf Links Cluster Pipeline Replacement (expected completion 2021)
- Seneca Reservoir Demolition (expected completion 2022)
- Lawlor Cluster Pipeline Replacement (expected completion 2023)
- Outlook Cluster South Pipeline Replacement (expected completion 2024)
- Upper San Leandro Water Treatment Plant Improvements (expected completion 2025)

No other projects were identified near the Project sites during review of the following agencies: Amtrak, BART, PG&E and Union Pacific. The projects listed above are scheduled to be completed before Project construction is expected to begin in 2028.

The scope and analysis for cumulative impacts on aesthetic resources encompasses the locations from which a viewer could see the Project construction or operations elements, along with views of other projects. The cumulative impacts analysis also considers consecutive views where cumulative projects may be seen in close succession as a viewer moves through an area. A significant cumulative effect related to light and glare would result if the effects of the Project combined in space and time with those of other projects to cause substantial nuisance or hazard conditions on the same light-sensitive receptor.

The geographical extent for cumulative impacts related to transportation includes areas in the vicinity of the Project site that would experience construction activity at the same time as the Project. Given that the Project would not result in additional traffic during its operational period, only the construction period is evaluated relative to potential cumulative impacts. None of the projects listed above are currently scheduled to overlap (in time and space) with the Project's anticipated construction schedule. However, delays to any of the projects listed above such that they overlap with the Project construction could result in potentially significant cumulative impacts on traffic. Such impacts would include a short-term increase in vehicle traffic, and reductions in the number or the available width of travel lanes on roads where construction would occur. In addition, concurrent construction of these projects could create traffic safety hazards for vehicles, bicyclists, and pedestrians on public roadways. Access to adjacent land uses and streets for both general traffic and emergency vehicles could be disrupted.

Potentially significant cumulative traffic and transportation access and facility impacts of the type described above could occur along the regional transportation corridors and identified truck routes, in the vicinity of the Project site. Such impacts also would be expected along local arterial and neighborhood roadways connecting regional thoroughfares with specific project construction sites.

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 the preparation of a Traffic Control Plan. This Traffic Control Plan would reduce the

Project's safety hazards, emergency access, and bicycle and pedestrian facilities impacts. Therefore, the Project's contribution to cumulative construction-related transportation impacts would be less than significant.

c. Less than Significant with Mitigation Incorporated. The Project has the potential to result in substantial adverse effects on human beings or their environment, either directly or indirectly. As described in the document above, the Project has the potential to cause significant impacts related to Aesthetics and Transportation. Mitigation measures have been identified that would reduce these impacts to less than significant levels.

In addition, 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. For impacts related to Air Quality, Biological Resources, Cultural Resources, Energy, Geology and Soils, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Hydrology and Water Quality, Noise, Tribal Cultural Resources, and Utilities and Service Systems, the relevant EBMUD standard practices and procedures discussed in the MND ensure that impacts would be less than significant.

REFERENCES

EBMUD, Standard Construction Specification 01 55 26, Traffic Regulation, February 9, 2017.

EBMUD, Construction projects in my neighborhood. Available at https://www.ebmud.com/about-us/construction-and-maintenance/construction-my-neighborhood/. Accessed September 2021.

Alameda County Transportation Commission, Projects: Capital Project Fact Sheets and Web Pages. Available at https://www.alamedactc.org/projects/. Accessed September 2021.

Amtrak, Projects & Stations. Available at https://nec.amtrak.com/nec-projects-stations/. Accessed September 2021.

Bay Area Rapid Transportation, Projects. Available at https://www.bart.gov/about/projects. Accessed September 2021.

Caltrans, District 4: Projects by County. Available at https://dot.ca.gov/caltrans-near-me/district-4. Accessed September 2021.

City of Oakland, Major Development Projects. Available at https://www.oaklandca.gov/topics/major-development-projects. Accessed September 2021.

Pacific Gas & Electric, Current Projects. Available at https://www.pge.com/en_US/safety/electrical-safety/safety-initiatives/transmission-project-overview.page. Accessed September 2021.

Union Pacific, Public Projects. Available at https://www.up.com/real_estate/roadxing/industry/index.htm. Accessed September 2021.

APPENDIX A

MITIGATION MONITORING AND REPORTING PROGRAM

This page intentionally left blank.

APPENDIX A
MITIGATION MONITORING AND REPORTING PROGRAM

Impact Area	Mitigation Measure	Responsible for Implementation	Responsible for Monitoring and/or Enforcement	Timing of Implementation
Aesthetics				
Impact Aesthetics d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.	**Mitigation Measure AES-1: Nighttime Lighting Controls.** Stationary lighting used during nighttime construction (if required) shall be shielded and directed downward or oriented such that the light source is not directed toward residential areas or into streets.	EBMUD and EBMUD's Construction Contractor	EBMUD	For the duration of nighttime construction
Transportation				
Impact Transportation a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.	**Mitigation Measure TRA-1: MacArthur Boulevard Pedestrian Diversion**. A temporary pedestrian diversion shall be provided around any sidewalk obstruction to maintain the pedestrian path of travel along the sidewalk corridor on MacArthur Boulevard at the new PP site. The temporary pedestrian diversion, if necessary, shall be clearly identified, wheelchair usable, shielded from motor vehicle traffic, and free of pedestrian hazards such as holes, debris, gravel, mud, etc. All temporary pedestrian diversion routes must keep and maintain a minimum 5.5-foot clear width for pedestrian access. Pedestrian access plans shall be reviewed and approved by the City's Department of Transportation (OakDOT) prior to construction and included in the Project's Traffic Control Plan.	EBMUD and EBMUD's Construction Contractor	EBMUD	Prior to and during construction
	Mitigation Measure TRA-2: Golf Links Road and MacArthur Boulevard Bus Stop Relocation/Short-Term Closure. EBMUD shall coordinate with and obtain written approval from AC transit and OakDOT for the temporary relocation or closure of any bus stops along Golf Links Road to accommodate existing pipeline abandonment disconnection, and along MacArthur Boulevard required to accommodate new PP and new pipeline construction. Any parking obstruction, sidewalk obstruction, travel lane obstruction, or other accommodation required for the closed or temporary bus stop shall be proposed through an obstruction permit application and documented in the Project's Traffic Control Plan.	EBMUD and EBMUD's Construction Contractor	EBMUD	Prior to construction

This page intentionally left blank.

APPENDIX B

EBMUD PRACTICES AND PROCEDURES MONITORING AND REPORTING PLAN

This page intentionally left blank.

APPENDIX B
EBMUD PRACTICES AND PROCEDURES MONITORING AND REPORTING PLAN

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
Air Quality				
Air Quality a): Conflict with or obstruct implementation of the applicable air quality plan.	**EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 1.3.E, 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. The plan shall 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. The plan shall include items such as mitigation measures to control fugitive dust emissions generated by construction activities. The Plan shall outline best management practices for preventing dust emissions, provide guidelines for training of employees, and procedures to be used during operations and maintenance activities. The plan shall also include measures for the control of paint overspray generated during the painting of exterior surfaces. The plan shall detail the equipment and methods used to monitor compliance with the plan. The handling and disposal of water used in compliance with the Dust Control Plan shall be addressed in the Water Control and Disposal Plan. 2. Containment, as described in Article 3.3, shall be utilized during any abrasive blasting of the exterior of structures. *Section 3.3., Dust Control and Monitoring* B. Dust Control 1. Contractor shall implement all necessary dust control measures, including but not limited to the following: a. All exposed surfaces with the potential of dust-generating shall be watered at least twice daily, or be covered with coarse rock, or as directed by the Engineer to reduce the potential for airborne dust from leaving the site. b. The simultaneous occurrence of more than two ground disturbing construction phases 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, as appropriate. c. Cover all haul trucks entering/leaving the site and trim their loads as necessary. d. Using wet power vacuum street sweepers to:	EBMUD and EBMUD's Contractor	EBMUD	Prior to and During Construction

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
	1) Sweep all paved access road, parking areas and staging areas at the construction site daily or as often as necessary. *2)* Sweep public roads adjacent to the site at least twice daily or as often as necessary. e. THE USE OF DRY POWER SWEEPING IS PROHIBITED. f. ALL TRUCKS AND EQUIPMENT, INCLUDING THEIR TIRES, SHALL BE WASHED OFF PRIOR TO LEAVING THE SITE. g. GRAVEL OR APPLY NON-TOXIC SOIL STABILIZERS ON ALL UNPAVED ACCESS ROADS, PARKING AREAS AND STAGING AREAS AT CONSTRUCTION SITES. h. WATER AND/OR COVER SOIL STOCKPILES DAILY. i. SITE ACCESSES TO A DISTANCE OF 100 FEET FROM THE PAVED ROAD SHALL BE TREATED WITH 12-INCHES LAYER OF COMPACTED COARSE ROCK. j. 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. k. ALL ROADWAYS, DRIVEWAYS, AND SIDEWALKS TO BE PAVED SHALL BE COMPLETED AS SOON AS POSSIBLE. l. BUILDING PADS SHALL BE LAID AS SOON AS POSSIBLE AFTER GRADING. m. 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. n. WIND BREAKS (E.G., FENCES) SHALL BE INSTALLED ON THE WINDWARD SIDES(S) OF ACTIVELY DISTURBED AREAS OF CONSTRUCTION. WIND BREAKS SHOULD HAVE A MAXIMUM 50 PERCENT AIR POROSITY. o. ALL VEHICLE SPEEDS SHALL BE LIMITED TO FIFTEEN (15) MPH OR LESS ON THE CONSTRUCTION SITE AND ANY ADJACENT UNPAVED ROADS. C. Dust Monitoring During Demolition and Construction 1. Provide air monitoring per the Dust Control and Monitoring Plan 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. a. 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. b. 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			

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
	or greater than 20% opacity as perceived by an opacity sensing device, where such device is required by Air Quality Management District regulations. 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. d. All analysis shall be completed by a California Department of Health Services certified laboratory for the specific parameters of interest. e. The Contractor shall provide to the Engineer, within 72 hours of sampling all test results. D. The dust control system shall comply with the Dust Control and Monitoring Plan, the requirements of this section, and any applicable laws and regulations *Section 3.4., Emissions Control* A. Air Quality and Emissions Control 1. The Contractor shall ensure that line power is used instead of diesel generators at all construction sites where line power is available. 2. 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. 3. 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. 4. Contractor shall implement standard air emissions controls such as: a. Minimize the use of diesel generators where possible. b. 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. c. Follow applicable regulations for fuel, fuel additives, and emission standards for stationary, diesel-fueled engines. d. Locate generators at least 100 feet away from adjacent homes and ball fields. e. Perform regular low-emission tune-ups on all construction equipment, particularly haul trucks and earthwork equipment.			

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
	5. Contractor shall implement the following measures to reduce greenhouse gas emissions from fuel combustion: a. On road and off-road vehicle tire pressures shall be maintained to manufacturer specifications. Tires shall be checked and re-inflated at regular intervals. b. 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. c. All construction equipment, diesel trucks, and generators shall be equipped with Best Available Control Technology for emission reductions of Oxide of Nitrogen (NOx) and Particulate Matter (PM). d. Demolition debris shall be recycled for reuse to the extent feasible. See the Construction and Demolition Waste Disposal Plan paragraphs above for requirements on wood treated with preservatives. B. Architectural Coatings 1. Architectural coatings used shall comply with appropriate Volatile Organic Compound limits as established in the Bay Area Air Quality Management District's Regulation 8, Rule 3 and/or the San Joaquin Valley Air Pollution Control District's Regulation IV, Rule 4601, and any amendments thereto. **EBMUD's 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 asbestos 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 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. Whenever there is a conflict or overlap of the above references, the most stringent provision is applicable. **EBMUD's Standard Construction Specification 02 83 13, Lead Hazard Control Activities** *Section 1.4, Submittals (Pre-Job)* B. Lead Demolition Plan: Lead-containing coating handling, engineering control, removal, and disposal procedures.			
Air Quality b): Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an	**EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 3.4.A, Air Quality and Emissions Control* (Details as listed under Impact Air Quality a) *Section 3.4.B, Architectural Coatings* (Details as listed under Impact Air Quality a)	EBMUD and EBMUD's Contractor	EBMUD	Prior to and During Construction

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
applicable federal or state ambient air quality standard.				
Air Quality c): Expose sensitive receptors to substantial pollutant concentrations.	**EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 3.4.A, Air Quality and Emissions Control* (Details as listed under Impact Air Quality a)	EBMUD and EBMUD's Contractor	EBMUD	Prior to and During Construction
Air Quality d): Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.	**EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 1.3.I, Tuneup Logs* 1. The Contractor shall submit a log of required tune-ups for all construction equipment, particularly haul and delivery trucks, on a quarterly basis for review. *Section 3.4.A, Air Quality and Emissions Control* (Details as listed under Impact Air Quality a)	EBMUD and EBMUD's Contractor	EBMUD	Prior to and During Construction
Biological Resources				
Biological Resources a): Have a substantial adverse impact, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by the California Dept. of Fish & Game or U.S. Fish & Wildlife Service.	**EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 3.8, Protection of Birds Protected Under the Migratory Bird Treaty Act and Roosting Bats* A. The District 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 THE DISTRICT 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 A DISTRICT-DESIGNATED LOCATION, CONDUCTED BY A QUALIFIED BIOLOGIST PROVIDED BY THE DISTRICT. 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 THE DISTRICT. PRIOR TO ACCESSING OR PERFORMING CONSTRUCTION WORK, ALL CONTRACTOR PERSONNEL SHALL:	EBMUD and EBMUD's Contractor	EBMUD	Prior to and During Construction

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
	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 the District 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, the District 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 will be determined by the District 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, a qualified biologist provided by the District will 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 qualified 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 District's biologist, would be necessary. c. ROOSTING BATS: 1) If construction commences between March 1 and July 31, during the bat maternity period, the District 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.			

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
	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, a qualified biologist provided by the District will 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 District 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 a qualified biologist provided by the District 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.			
Cultural Resources				
Cultural Resources b): Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?	**EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 3.9, 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 the District or a third party or may be discovered directly by the Contractor 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	EBMUD and EBMUD's Contractor	EBMUD	Prior to and During Construction

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
	prehistoric or historic artifacts or fossils along the Work Area, or at Work facilities, is strictly prohibited. C. Before beginning construction, all Contractor construction personnel shall attend a cultural resources training course provided by the District 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 a District designated location, conducted by a qualified archaeologist provided by the District, or by District 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 the District. 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 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" 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 notify the Engineer who will engage a qualified archaeologist provided by the District 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. The District 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 District, 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 District, the archaeologist (and Native American representative) will determine when construction can resume. 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 the District to evaluate the find. The			

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
	Contractor is responsible for stopping work and notifying the Engineer and shall not recommence work until authorized to do so by the Engineer. b. The District 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 the District 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 the District 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. The District 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 District, and implemented to the satisfaction of the paleontologist. In consultation with the paleontologist, the District will determine when construction can resume. E. If the District 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.			
Cultural Resources c): Disturb any human remains, including those interred outside of formal cemeteries?	**EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 3.9, Protection of Cultural and Paleontological Resources* (Details as listed under Impact Cultural Resources b)	EBMUD and EBMUD's Contractor	EBMUD	Prior to and During Construction
Energy				

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
Energy a): Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?	**EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 3.4.A, Air Quality and Emissions Control* (Details as listed under Impact Air Quality a)	EBMUD and EBMUD's Contractor	EBMUD	Prior to and During Construction
Geology and Soils				
Geology and Soils a): Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. ii. Strong seismic ground shaking? iii. Seismic-related ground failure, including liquefaction? iv. Landslides?	**EBMUD's Pumping Plant Design Guide** EBMUD's Pumping Plant Design Guide establishes the minimum requirements to follow in the design of EBMUD drinking water pumping plants. The Pumping Plant Design Guide details design criteria, conditions for PPs, outlines applicable codes and design standards, and requires the completion of a geotechnical investigation during design and incorporation of geotechnical design recommendations in project plans and specifications. **EBMUD's Engineering Standard Practice 550.1, Seismic Design Requirements and 512.1, Water Main and Services Design Criteria** 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 fault rupture, ground shaking, liquefaction-related phenomena, landslides, seiches and tsunamis and requires that EBMUD establish project-specific seismic design criteria for pipelines with a diameter of greater than 12 inches. Engineering Standard Practice 550.1, Seismic Design Requirements, includes basic requirements for structures and design standard for structures to withstand seismic hazards including compliance with applicable seismic design standards found in the latest editions of the California Building Code and American Society of Civil Engineers 7, Minimum Design Loads for Buildings and Other Structures.	EBMUD and EBMUD's Contractor	EBMUD	Prior to and During Construction
Geology and Soils b): Result in substantial soil erosion or the loss of topsoil?	**EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 1.1.B, Site Activities*	EBMUD and EBMUD's Contractor	EBMUD	Prior to and During Construction

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
	B. Site Activities 1. No debris including, but not limited to, demolition material, treated wood waste, stockpile leachate, soil, silt, sand, bark, slash, sawdust, asphalt, rubbish, paint, oil, cement, concrete or washings thereof, oil or petroleum products, or other organic or earthen materials from construction activities shall be allowed to enter into storm drains or surface waters or be placed where it may be washed by rainfall or runoff outside the construction limits. When operations are completed, excess materials or debris shall be removed from the work area as specified in the Construction and Demolition Waste Disposal Plan. 2. Excess material shall be disposed of in locations approved by the Engineer consistent with all applicable legal requirements and disposal facility permits. 3. Do not create a nuisance or pollution as defined in the California Water Code. Do not cause a violation of any applicable water quality standards for receiving waters adopted by the Regional Board or the State Water Resources Control Board, as required by the Clean Water Act. 4. Clean up all spills and immediately notify the Engineer in the event of a spill. 5. Stationary equipment such as motors, pumps, and generators, shall be equipped 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. Following completion of Work, ditches, dikes, or other ground alterations made by the Contractor shall be removed and the ground surfaces shall be returned to their former condition, or as near as practicable, in the Engineer's opinion. 7. Maintain construction sites to ensure that drainage from these sites will minimize erosion of stockpiled or stored materials and the adjacent native soil material. 8. Furnish all labor, equipment, and means required and shall carry out effective measures wherever, and as often as necessary, to prevent Contractor's operations from causing visible dust emissions to leave the work areas. These measures shall include, but are not limited to, providing additional watering equipment, reducing vehicle speeds on haul roads, restricting traffic on haul roads, covering haul vehicles, and applying a dust palliative to well-traveled haul roads. The Contractor shall provide the specifications of the dust palliative for Engineer approval prior to use. The Contractor shall be responsible for damage resulting from dust originating from its operations. The dust abatement measures shall be continued for the duration of the Contract. Water the site in the morning and evening, and as often as necessary, and clean vehicles leaving the site as necessary to prevent the transportation of dust and dirt onto public roads. Dust control involving water shall be done in such a manner as to minimize waste and runoff from the site.			

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
	9. Construction staging areas shall be graded, or otherwise protected with Best Management Practices (BMPs), to contain surface runoff so that contaminants such as oil, grease, and fuel products do not drain towards receiving waters including wetlands, drainages, and creeks. 10. All construction equipment shall be properly serviced and maintained in good operating condition to reduce emissions. Contractor shall make copies of equipment service logs available upon request. 11. Any chemical or hazardous material used in the performance of the Work shall be handled, stored, applied, and disposed of in a manner consistent with all applicable federal, state, and local laws and regulations. 12. Contaminated materials excavated and/or removed from the construction area shall be disposed of in a manner consistent with all applicable local, state, and federal laws and regulations. *Section 1.3.A, Storm Water Management* A. Storm Water Management 1. Construction General Permit a. The Contractor shall create a user account on the SWRCB's Storm Water Multi-Application & Report Tracking System (SMARTS). The Engineer will link the Contractor to the District's account as a Data Submitter. The Contractor shall prepare and upload to SMARTS Permit Registration Documents (PRDs), including, but not limited to, a Notice of Intent, a Site Specific Risk Assessment, a Site Map, and a Storm Water Pollution Prevention Plan (SWPPP) for the Engineer's review which meets the requirements of the SWRCB, for coverage under the General Construction Stormwater Permit (Order No. 2009-0009-DWQ) and amendments thereto. Upon acceptance by the Engineer, the Engineer will electronically certify and file the PRDs to gain permit coverage and the Contractor shall submit the registration and the subsequent annual fees as required by the SWRCB. b. The Contractor shall be responsible for complying with the requirements of the Construction General Permit. The Contractor's responsibilities include, but are not limited to, providing qualified professionals as described in the permit to prepare and certify all permit-required documents/submittals and to implement effective stormwater/non-stormwater management practices, and conducting inspections and monitoring as required by the permit. The Contractor shall, in compliance with the permit, prepare and upload to SMARTS all required documents, photos, data, and/or reports (including the Annual Reports) and ensure permit coverage termination upon construction completion by preparing a Notice of Termination on SMARTS. The Contractor shall inform the Engineer when documents/reports are available on SMARTS for Engineer certification and submittal. 2. Storm Water Pollution Prevention Plan			

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
	a. Submit a Stormwater Pollution Prevention 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 chlorine residual and all other contaminants known to exist at the jobsite location as described in Document 00 31 24 - Material Assessment Information. *Section 3.3., Dust Control and Monitoring* (Details as listed under Impact Air Quality a) **EBMUD's Pumping Plant Design Guide** (Details as listed under Impact Geology and Soils a)			
Geology and Soils c): Be located on strata 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?	**EBMUD's Standard Construction Specification 01 35 24, Project Safety Requirements** *Section 1.3.K, 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.	EBMUD and EBMUD's Contractor	EBMUD	Prior to and During Construction
Geology and Soils d): Be located on expansive soil as defined in Table 18-1-B of the Uniform Building Code 1994, creating substantial risks to life or property?	**EBMUD's Engineering Standard Practice 550.1, Seismic Design Requirements and 512.1, Water Main and Services Design Criteria** (Details as listed under Geology and Soils a)			
Geology and Soils f): Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?	**EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 3.9, Protection of Cultural and Paleontological Resources* (Details as listed under Impact Cultural Resources a)	EBMUD and EBMUD's Contractor	EBMUD	Prior to and During Construction

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
Greenhouse Gas Emissions				
Greenhouse Gas Emissions a): Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	**EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 3.4.A, Air Quality and Emissions Control* (Details as listed under Impact Air Quality a)	EBMUD and EBMUD's Contractor	EBMUD	Prior to and During Construction
Greenhouse Gas Emissions b): Conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	**EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 3.4.A, Air Quality and Emissions Control* (Details as listed under Impact Air Quality a)	EBMUD and EBMUD's Contractor	EBMUD	Prior to and During Construction
Hazards and Hazardous Materials				
Hazards and Hazardous Materials a and b): Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, or create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	**EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 1.3.A.2, Storm Water Pollution Prevention Plan* 2. Storm Water Pollution Prevention Plan a. Submit a Stormwater Pollution Prevention 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 chlorine residual and all other contaminants known to exist at the jobsite location as described in Document 00 31 24 - Material Assessment Information. *Section 1.3.B, Water Control and Disposal Plan* B. Water Control and Disposal Plan 1. The Contractor shall submit a detailed Water Control and Disposal Plan for the Engineer's acceptance prior to any work at the jobsite. a. Plan shall comply with all requirements of the Specification and applicable discharge permits. Table 1 summarizes discharge permits that may be applicable to District projects. b. Contractor shall maintain proper control of the discharge at the discharge point to prevent erosion, scouring of bank, nuisance, contamination, and excess sedimentation in the receiving waters.	EBMUD and EBMUD's Contractor	EBMUD	Prior to and During Construction

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
	2. Drinking Water System Discharges a. Plan shall include the estimated flow rate and volume of all proposed discharges to surface waters, including discharges to storm drains. All receiving waters shall be clearly identified. b. Contractor shall track all discharges directly to a surface water body or a storm drain system that drains to a surface water body. A record consisting of discharge locations and volumes shall be submitted to the Engineer prior to Contract Acceptance. c. A monitoring program is required for drinking water system discharges greater than 325,850 gallons in conformance with Attachment E, Monitoring and Reporting Program, of the General Drinking Water Discharges Permit, when the water will be discharged either directly into a surface water body or a storm drain system that drains to a surface water body. A record consisting of discharge locations, volumes and Water Quality (WQ) data shall be submitted to the Engineer. The Planned Discharge Tracking Form, attached to the end of this section, may be used to fulfill this requirement. All monitoring results shall be submitted to the Engineer prior to Contract Acceptance. 1. Contractor shall notify the Engineer, at least one week prior to the start of a planned discharge equal to or greater than 325,850 gallons, of the following: a) The discharge start date; b) The discharge location and the applicable receiving water; c) The flow rate and volume to be discharged; and d) The reason(s) for discharge. d. Contractor shall dechlorinate all drinking water system discharges to achieve a total chlorine residual concentration of < 0.1 mg/L measured with a handheld chlorine meter utilizing a US EPA approved method and provide effective erosion & sediment control to achieve a visual turbidity concentration of ≤ 100 NTU by implementing BMPs which meet the District minimum standards (see Figure 1 attached to the end of this section) or better. e. Instead of discharging to surface waters, where feasible, Contractor shall beneficially reuse water derived from drinking water systems as defined in the General Drinking Water Discharges Permit. Potential reuse strategies include, but are not limited to, landscape irrigation, agricultural irrigation, dust control, and discharge to stormwater capture basins or other groundwater recharge systems. Contractor shall do so without impacting property or the environment. Contractor shall provide a record of reuse location(s) and volume(s) and submit it to the Engineer prior to Contract Acceptance. f. Contractor shall ensure that the pH level of any discharges shall not be depressed below 6.5, nor elevated above 8.5. If there is potential for discharges to be below 6.5 or above 8.5, Contractor shall employ pH adjustment best			

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
	management practices to ensure discharges are within the range of 6.5 and 8.5. Contractor shall conduct onsite field measurements for pH per quality assurance and quality control (QA/QC) protocol that conform to U.S. EPA guidelines, or procedures approved by the American Water Works Association or other professional drinking water industry association. Contractor shall submit all monitoring results to the Engineer prior to Contract Acceptance. 3. Non-Stormwater Discharges a. 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 or other liquid that has been in contact with any interior surfaces of District facilities. Contractor shall provide the Engineer with containment, handling, treatment and disposal designs and a sampling & analysis plan for approval before commencing the Work. Sampling and analysis shall be in conformance with Sections 1.3 (K) Analytical Test Results and 3.1 SAMPLING AND ANALYSIS. 4. Sanitary Sewer Discharges a. It is District policy to send superchlorinated discharges from pipeline disinfection to the sanitary sewer system. Plan shall include a sampling and analytical program for superchlorinated discharges in conformance with the Sanitary Sewer Discharge Permit. All monitoring results shall be submitted to the Engineer prior to the end of the Work. b. Obtain and provide to the Engineer documentation from the agency (e.g., wastewater treatment plant, local sewer owner) having jurisdiction, authorizing the Contractor to dispose of the liquid and describing the method of disposal. Discharges destined for the District's main wastewater treatment plant in Oakland can reference Special Discharge Permit (SDP) #50333261, issued to the District's Regulatory Compliance Office, when obtaining authorization from the pertinent local jurisdiction that owns the sewers to be used. Contractor shall, prior to the end of the Work, report to the Engineer the volumes of all discharges performed pursuant to the said SDP along with copies of any profile forms and/or correspondence between Contractor and disposal facility. *Section 1.3.C, Construction and Demolition Waste* C. Construction and Demolition Waste Disposal Plan 1. Prepare a Construction and Demolition Waste Disposal Plan and submit a copy of the plan for the Engineer's acceptance prior to disposing of any material (except for water wastes which shall be addressed in the Water Control and Disposal Plan). a. The plan shall identify how the Contractor will remove, handle, transport, and dispose of all materials required to be removed under this contract in a safe,			

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
	appropriate, and lawful manner in compliance with all applicable regulations of local, state, and federal agencies having jurisdiction over the disposal of removed materials. b. The Contractor shall procure the necessary permits required by the local, state, and federal agencies having jurisdiction over the handling, transportation, and disposal of construction and demolition waste. c. Include a list of reuse facilities, recycling facilities and processing facilities that will be receiving recovered materials. d. 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). e. Identify how the Contractor will comply with The California Department of Toxic Substances Control's (DTSC) Alternative Management Strategies (AMS) when handling and disposing of treated wood waste (TWW) in compliance with 22 CCR 66261.9.5. f. TWW records including but not limited to manifests, bills of lading should be submitted to the Engineer within 5 working days of off-haul. Records should 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; and (3) date of the shipment of TWW. (Cal. Code Regs., tit. 22, §§ 67386.8(a) and (e)(1)). g. List the permitted landfill, or other permitted disposal facilities, that will be accepting the disposed waste materials. h. Identify each type of waste material to be reused, recycled or disposed of and estimate the amount, by weight. i. Plan shall include the sampling and analytical program for characterization of any waste material, as needed, prior to reuse, recycle or disposal. 2. Materials or wastes shall only be recycled, reused, reclaimed, or disposed of at facilities approved of by the District. 3. 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 District 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. 4. All information pertinent to the characterization of the material or waste shall be disclosed to the District 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. 5. Submit name and Environmental Laboratory Accreditation Program Certificate number of laboratory that will analyze samples for suspected hazardous			

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
	substances. Include statement of laboratory's certified testing areas and analyses that laboratory is qualified to perform. Submit prior to any laboratory testing. *Section 1.3.D, Spill Prevention and Response Plan* D. 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. 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. 2. Submit a Safety Data Sheet (SDS) for each hazardous substance proposed to be used prior to delivery of the material to the jobsite *Section 1.3.E, Dust Control and Monitoring Plan* (Details as listed under Impact Air Quality a) **EBMUD's Standard Construction Specification 01 35 24, Project Safety Requirements** *Section 1.3.B, Project Health and Safety Plan* 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.J, 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: 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 **EBMUD's Standard Construction Specification 02 82 13, Asbestos Control Activities** *Section 1.5.B, Plan of Action* 1. Asbestos Abatement:			

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
	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's Standard Construction Specification 02 83 13, Lead Hazard Control Activities** *Section 1.4, Submittals (Pre-Job)* (Details as listed under Impact Air Quality a) **EBMUD's Engineering Standard Practice 514, Identifying Buried Conflicts** *Section V, Requirements and Guidelines of Planning, Design, and Construction* **Procedure 711, Hazardous Waste Removal**			
Hazards and Hazardous Materials c): Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	**EBMUD's Standard Construction Specification 01 35 24, Project Safety Requirements** *Section 1.3.B, Project Health and Safety Plan* (Details as listed under Impact Hazards and Hazardous Materials a) **EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 1.3.D, Spill Prevention and Response Plan* (Details as listed under Impact Hazards and Hazardous Materials a)	EBMUD and EBMUD's Contractor	EBMUD	Prior to and During Construction
Hazards and Hazardous Materials f): Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	**EBMUD's Standard Construction Specification 01 55 26, Traffic Regulation** *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 California Manual on Uniform Control Devices. 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.	EBMUD and EBMUD's Contractor	EBMUD	Prior to and During Construction

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
	5. Locations for parking by construction workers.			
Hydrology and Water Quality				
Hydrology and Water Quality a): Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	**EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 1.3.A.2, Storm Water Pollution Prevention Plan* (Details as listed under Impact Hazards and Hazardous Materials a) *Section 1.3.B, Water Control and Disposal Plan* (Details as listed under Impact Hazards and Hazardous Materials a) *Section 1.3.D, Spill Prevention and Response Plan* (Details as listed under Impact Hazards and Hazardous Materials a)	EBMUD and EBMUD's Contractor	EBMUD	Prior to and During Construction
Hydrology and Water Quality c): Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: i. Result in substantial erosion or siltation on- or off-site; ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial	**EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 1.1.B, Site Activities* (Details as listed under Impact Geology and Soils b) *Section 1.3.A.2, Storm Water Pollution Prevention Plan* (Details as listed under Impact Hazards and Hazardous Materials a) *Section 1.3.B, Water Control and Disposal Plan* (Details as listed under Impact Hazards and Hazardous Materials a) *Section 1.3.D, Spill Prevention and Response Plan* (Details as listed under Impact Hazards and Hazardous Materials a)	EBMUD and EBMUD's Contractor	EBMUD	Prior to and During Construction

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
additional sources of polluted runoff; or iv. impede or redirect flood flows?				
Hydrology and Water Quality e): Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	**EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 1.3.A.2, Storm Water Pollution Prevention Plan* (Details as listed under Impact Hazards and Hazardous Materials a)	EBMUD and EBMUD's Contractor	EBMUD	Prior to and During Construction
Noise				
Noise a): Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	**EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 1.3, Submittals* 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 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. *Section 3.7, Noise Control* A. Comply with sound control and noise level rules, regulations and ordinances as required herein and in the CEQA documents which apply to any work performed pursuant to the contract. B. Contractor is responsible for taking 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. No internal combustion engine shall be operated on the project without said muffler. D. 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.	EBMUD and EBMUD's Contractor	EBMUD	Prior to and During Construction

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
	E. Truck operations (haul trucks and concrete delivery trucks) will 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. If they must be located near receptors, adequate muffling (with enclosures) shall be used. 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. Material stockpiles as well as maintenance/equipment staging and parking areas (all on-site) shall be located as far as practicable from residential receptors. **EBMUD's 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 8:00 a.m. and 4:00 p.m., Monday through Friday. **Procedure 600, Public Outreach and Community Relations**			
Noise b): Generation of excessive groundborne vibration or groundborne noise levels?	**EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 1.3.H, Vibration Control and Monitoring Plan* 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 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. *Section 3.6, Vibration Control* A. Limit 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.	EBMUD and EBMUD's Contractor	EBMUD	Prior to and During Construction
Transportation				
Transportation a): Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	**EBMUD's Standard Construction Specification 01 55 26, Traffic Regulation** *Section 1.2, Submittals* (Details as listed under Impact Hazards and Hazardous Materials f) *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 direction 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	EBMUD and EBMUD's Contractor	EBMUD	Prior to and During Construction

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
	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. 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.			
Transportation c): Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	**EBMUD's Standard Construction Specification 01 55 26, Traffic Regulation** *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.	EBMUD and EBMUD's Contractor	EBMUD	Prior to and During Construction
Transportation d): Result in inadequate emergency access?	**EBMUD's Standard Construction Specification 01 55 26, Traffic Regulation** *Section 1.2, Submittals* (Details as listed under Impact Hazards and Hazardous Materials f) *Section 3.0, Execution* 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. 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.	EBMUD and EBMUD's Contractor	EBMUD	Prior to and During Construction

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
	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. 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. 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. 3.4 TEMPORARY TRAFFIC CONTROL (Details as listed under Impact Transportation a)			
Tribal Cultural Resources				
Tribal Cultural Resources a): Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources	**EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 3.9, Protection of Cultural and Paleontological Resources* (Details as listed under Impact Cultural Resources b)	EBMUD and EBMUD's Contractor	EBMUD	Prior to and During Construction

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe				
Utilities and Service Systems				

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
Utilities and Service Systems d and e): Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals, or comply with federal, state, and local management and reduction statutes and regulations related to solid waste??	**EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 1.3.C, Construction and Demolition Waste* (Details as listed under Impact Hazards and Hazardous Materials a)	EBMUD and EBMUD's Contractor	EBMUD	Prior to and During Construction
Wildfire				
Wildfire a): Substantially impair an adopted emergency response plan or emergency evacuation plan?	**EBMUD's Standard Construction Specification 01 55 26, Traffic Regulation** *Section 1.2, Submittals* (Details as listed under Impact Hazards and Hazardous Materials f)	EBMUD and EBMUD's Contractor	EBMUD	Prior to and During Construction

NOTES:
1 In EBMUD Standard Specifications, "District" = EBMUD; "Engineer" = EBMUD Engineer; "Contractor" = EBMUD Contractor; "Work" = Scope of Work for the Project