



# East Bay Municipal Utility District Fontaine Pumping Plant Replacement Project Final Greenhouse Gas Technical Report

September 2021

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**September 2021**

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# 1 Introduction

## 1.1 Project Overview

The East Bay Municipal Utility District (EBMUD) is proposing to replace its existing Fontaine Pumping Plant (PP) to address aging water distribution infrastructure and improve operational reliability and redundancy. Specifically, the Fontaine Pumping Plant Replacement Project (Project) includes the following three primary components:

- Demolition of the existing 20-million-gallon-per-day (mgd) Fontaine PP and construction of a new retaining wall (shown on Figure 1) at 8445 Ney Avenue in the City of Oakland (Alameda County) and abandonment of existing pipelines by cutting, capping, and filling the pipelines with cellular concrete at three existing pipeline abandonment disconnection sites (shown on Figure 2);
- Construction of a new 20 mgd PP and 24-inch rate control station (shown on Figure 3) at 9601 MacArthur Boulevard in the City of Oakland (Alameda County); and
- Installation of approximately 1,300 feet of new 30-inch-diameter suction pipeline and approximately 3,600 feet of new 30-inch-diameter discharge pipeline (using open trench construction methods) that would connect the new PP to the distribution system (shown on Figure 4).

The new PP would consist of three pumps, associated mechanical and electrical equipment, and a 24-inch-diameter rate control station located inside an approximately 45-foot wide, 50-foot long, and 23-foot tall building. The new PP site would include an approximate 25-foot-tall antenna, outdoor light fixtures, site accesses, a parking area, outdoor transformer and switchgear, and perimeter fencing. The Project would also include building architectural treatments and site landscaping as described in the *East Bay Municipal Utility District Fontaine Pumping Plant Replacement Project Aesthetic Conceptual Design Report* (Panorama Environmental, Inc., MWA Architects, and Dillingham Associates, 2021).

## 1 INTRODUCTION

Figure 1 Existing Fontaine Pumping Plant (8445 Ney Avenue)



# 1 INTRODUCTION

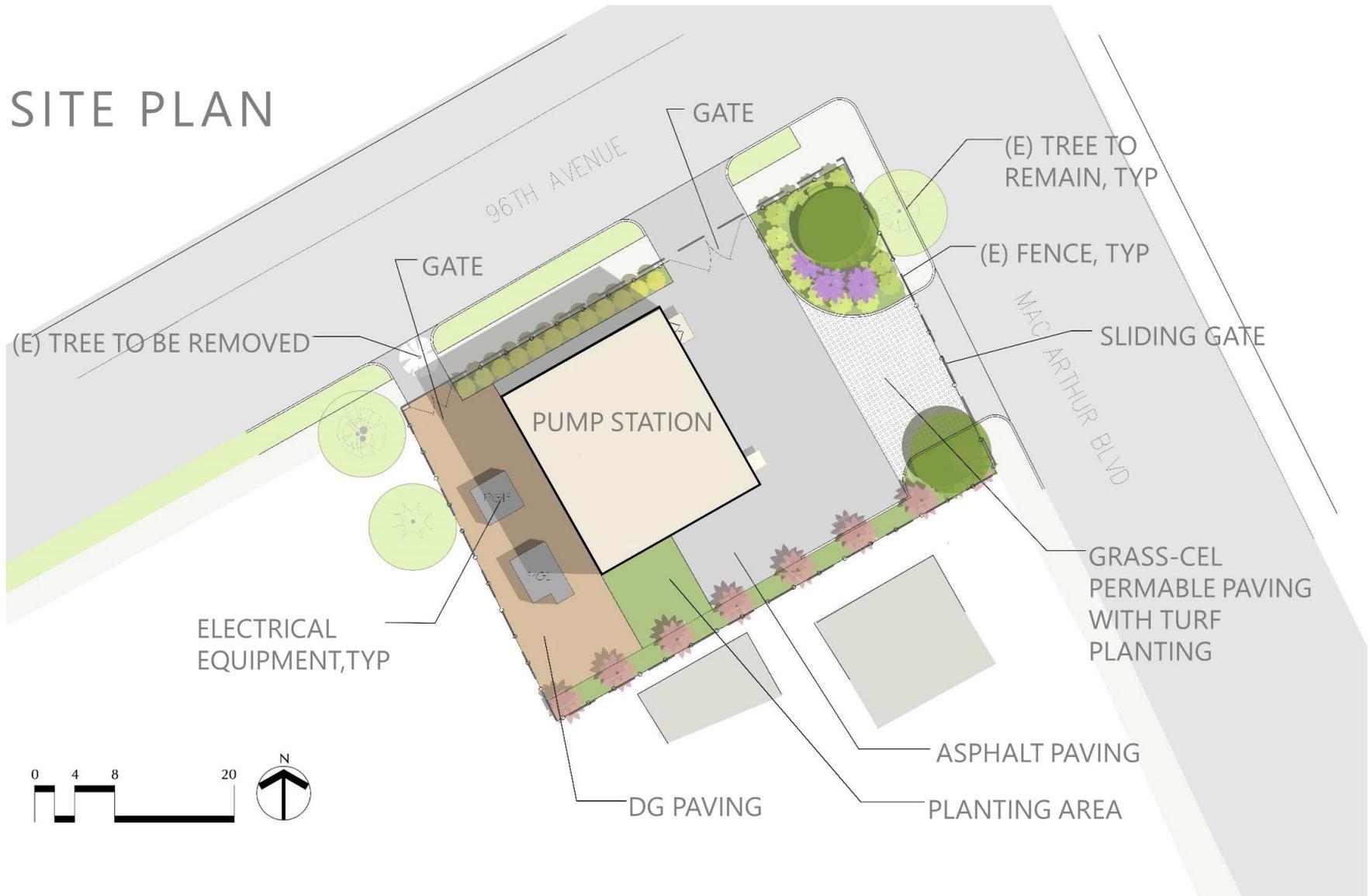
Figure 2 Existing Pipeline Abandonment Disconnection Sites



# 1 INTRODUCTION

Figure 3 New Fontaine Pumping Plant (9601 MacArthur Boulevard)

## SITE PLAN



# 1 INTRODUCTION

**Figure 4 New Pumping Plant and New Pipeline Location**



### 1.2 Definitions

#### 1.2.1 Greenhouse Gas

Greenhouse Gases (GHGs) are gases that trap heat in the atmosphere and include carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), and fluorinated gases, such as hydrofluorocarbons (HFCs).

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<sub>4</sub> and N<sub>2</sub>O.

#### 1.2.1 CO<sub>2</sub> Equivalent

CO<sub>2</sub> equivalent (CO<sub>2</sub>e) is calculated as the product of the mass of a given GHG and its specific GWP. While CH<sub>4</sub> and N<sub>2</sub>O have much higher GWPs than CO<sub>2</sub>, CO<sub>2</sub> is emitted in higher quantities and accounts for the majority of GHG emissions in CO<sub>2</sub>e.

#### 1.2.2 Metric Ton

A metric ton is a unit of weight equal to 1,000 kilograms (2,205 pounds).

## 2 Environmental Setting

### 2.1 Greenhouse Gases and Climate Change

GHGs are gases that trap heat in the atmosphere and regulate the earth's temperature. The most common GHGs are CO<sub>2</sub> and water vapor; other important GHGs include CH<sub>4</sub>, N<sub>2</sub>O, HFCs, perfluorocarbons (PFCs), and sulfur hexafluoride (SF<sub>6</sub>). GHGs are released into the earth's atmosphere through a variety of natural processes and human activities.

Sources of GHGs are generally as follows:

- Fuel Combustion: CO<sub>2</sub> and N<sub>2</sub>O
- Agricultural Operations: N<sub>2</sub>O from crop fertilization; CH<sub>4</sub> from off-gassing from livestock and landfill operations
- Refrigeration and Cooling: HFCs
- Industry Processes: PFCs and SF<sub>6</sub>

Each GHG has its own potency and effect upon the earth's energy balance, expressed in terms of a GWP, with CO<sub>2</sub> being assigned a value of 1 and SF<sub>6</sub> being several orders of magnitude stronger with a GWP of 23,900. In GHG emission inventories, the weight of each gas is multiplied by its GWP and is measured in units of equivalent CO<sub>2</sub> (CO<sub>2</sub>e).

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 will increasingly do so in the future.

Within the State of California (State), the climate and several naturally occurring resources (e.g., ground water, surface water, vegetation) 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.

According to the California Air Resources Board (CARB), total gross California GHG emissions in 2019, which is the most recent year for which GHG emissions are available, were 418.2 million metric tons of carbon dioxide equivalent (MMTCO<sub>2</sub>e). Table 1 shows the statewide GHG emissions estimated by CARB for the years 2000 and 2019. In 2019, transportation was the largest source of GHG emissions (40.7 percent), followed by industrial sources (23.9 percent), electricity (14.1 percent), commercial and residential sources (13.7 percent), and agriculture/forestry (7.6 percent) (CARB, 2021).

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**Table 1 California Greenhouse Gas Inventory**

Source Category	2000 (MMTCO <sub>2</sub> e)	2019 (MMTCO <sub>2</sub> e)
Transportation	178.4	166.1
Electric Power	104.7	58.8
Industrial	96.2	88.2
Commercial & Residential	43.9	43.8
Agriculture	31.0	31.8
High Global Warming Potential (e.g., refrigerants)	6.3	20.6
Recycling & Waste	7.4	8.9
<b>Gross California Emissions</b>	<b>467.9</b>	<b>418.2</b>

*Source: (CARB, 2021)*

Between 1990 and 2019, the population of California grew by 9.54 million (29.96 million in 1990 to 39.5 million in 2019) and the gross domestic product (GDP) for California grew by \$2.4 billion (\$0.8 billion in 1990 to \$3.2 billion in 2019) (U.S. Census Bureau, 2019) (Bureau of Economic Analysis, 2021). Despite a population growth of 32 percent and increase in GDP of 300 percent, GHG emissions decreased by 10.6 percent from 1990 to 2019. The decrease in GHG emission generation as compared to the significantly higher rate of population growth and GDP is likely attributed to energy efficiency and conservation efforts (CARB, 2019).

In March 2017, the BAAQMD released a Greenhouse Gas Emission Estimates and Draft Forecasts report presenting 2015 GHG-emissions data for the nine-county San Francisco Bay Area. GHG emissions from the transportation sector represented the largest source of the Bay Area's GHG emissions in 2015 at 41 percent, followed by stationary industrial sources at 26 percent, electricity generation and co-generation at 14 percent, and fuel use (primarily natural gas) by building at 11 percent. The remaining 8 percent of emissions is comprised of fluorinated gas emissions and emissions from solid waste and agriculture. Of the total transportation emissions in 2015, on-road sources accounted for approximately 87 percent, while off-road sources accounted for the remainder (BAAQMD, 2017).

### 2.2 City of Oakland Greenhouse Gas Emissions

In 2015, core GHG emissions, which refer to emissions generated within City limits in Oakland (City), equaled 2,497,088 MT CO<sub>2</sub>e. About 56 percent of core emissions were generated in the transportation and land use sectors of the community, including both vehicle emissions and stationary emitters such as the wastewater treatment plant. About 33 percent of emissions came from buildings and energy use, including electricity and natural gas use in homes, businesses, and other buildings. Less than 3 percent came from material consumption and waste, specifically from emissions associated with the breakdown of biological landfill contributions

## 2 ENVIRONMENTAL SETTING

from Oakland homes and businesses. GHG emissions from waste degradation are considered core emissions as the waste is generated within the City even though the degradation may take place within a landfill not within the City limits. Finally, about 6 percent came from the Port of Oakland and just 1.3 percent from City government activities (City of Oakland, 2018).

# 3 Regulatory Setting

## 3.1 Federal Regulations

### 3.1.1 Clean Air Act

On December 7, 2009, the United States Environmental Protection Agency (U.S. EPA) Administrator signed two distinct findings regarding GHGs under Section 202(a) of the federal Clean Air Act:

- **Endangerment Finding.** The current and projected concentrations of the six key well-mixed GHGs – CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs, and SF<sub>6</sub> – in the atmosphere threaten the public health and welfare of current and future generations.
- **Cause or Contribute Finding.** The combined emissions of well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution that threatens public health and welfare.

The findings do not themselves impose any requirements on industry or other entities.

### 3.1.2 Final Rule on Mandatory Reporting of Greenhouse Gases

In 2009, the U.S. EPA established the Final Rule on Mandatory Reporting of Greenhouse Gases, which requires reporting of GHG emissions from large sources and suppliers in the U.S. In general, the rule is referred to as Title 40 Code of Federal Regulations Part 98, which is intended to collect accurate and timely emissions data to inform future policy decisions. Facilities that emit 25,000 MTCO<sub>2</sub>e or more per year are required to submit annual reports to the U.S. EPA.

### 3.1.3 Light-Duty Vehicle Standards

In collaboration with the National Highway Traffic Safety Administration (NHTSA), the U.S. EPA finalized the program to reduce GHG emissions and improve fuel economy for light-duty vehicles (model years [MY] 2012–2016) in May 2010. The program was extended in 2012 to set more stringent standards for MY 2017–2025 light-duty vehicles. The revised standards are projected to reduce GHGs by approximately 2 billion metric tons and save 4 billion barrels of oil over the lifetime of MY 2017–2025 vehicles (U.S. EPA, 2012). Standards include fuel economy targets and improvements in vehicle technologies, including improved vehicle aerodynamics, reduced vehicle weight, lower tire rolling resistance, and expanded production of electric and hybrid vehicles.

### 3.1.4 Heavy-Duty Truck and Bus Standards

In August 2011, the U.S. EPA and the NHTSA announced the first-ever program to reduce GHG emissions and improve the fuel efficiency of heavy-duty trucks and buses. The final combined standards of the program will reduce CO<sub>2</sub> emissions by about 270 million metric tons and save

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about 530 million barrels of oil over the life of MY 2014 to 2018 heavy-duty vehicles (U.S. EPA 2011). The heavy-duty sector addressed in the U.S. EPA and NHTSA rules (including the largest pickup trucks and vans, semi-trucks, and all types and sizes of work trucks and buses in between) accounts for nearly 6 percent of total GHG emissions in the U.S. and 20 percent of transportation emissions. The program includes standards for fuel consumption and emissions for combination tractors and vocational vehicles, N<sub>2</sub>O and CH<sub>4</sub> emissions standards applicable to all heavy-duty engines, pick-ups, and vans, and standards for leakage of HFC refrigerants from air conditioning systems.

### 3.2 State Regulations

#### 3.2.1 Executive Order S-3-05

Executive Order S-3-05, signed in June 2005 by Governor Schwarzenegger, states that California is vulnerable to the impacts of climate change and that increased temperatures could reduce the Sierra snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To address those concerns, the Executive Order established the State's first GHG emissions targets:

- Reduce GHG emissions to 2000 levels by 2010;
- Reduce GHG emissions to 1990 levels by 2020; and
- Reduce GHG emissions to 80 percent below 1990 levels by 2050.

Executive Order S-3-05 requires biannual reports on progress made toward meeting the targets and the global warming impact on California.

#### 3.2.2 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. It directed CARB to begin developing discrete early actions to reduce GHG emissions while also preparing the Climate Change Scoping Plan (Scoping Plan), which outlines a framework of practices that would eventually be adopted and implemented to reach AB 32 goals. CARB approved the Scoping Plan in 2008 and updated it in May 2014. Regulations are being phased in over time. Adopted regulations include the 33 percent Renewable Portfolio Standard, the Cap-and-Trade Program, and the Low Carbon Fuel Standard. Relevant recommended actions of the updated Scoping Plan are generally related to transportation/goods movement and gases with a high GWP.

Reporting of GHG emissions by major sources is required by AB 32. In 2007, CARB established the Regulation for the Mandatory Reporting of Greenhouse Gas Emissions. Revisions to the GHG reporting regulation were approved by the California Office of Administrative Law, which became effective on January 1, 2012. Facilities that emit 10,000 MTCO<sub>2</sub>e or more of GHG emissions per year are required to submit annual reports to CARB.

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### 3.2.3 Senate Bill 97

Senate Bill (SB) 97 was passed by the State legislature and approved by Governor Schwarzenegger in August 2007. SB 97 acknowledges that climate change is a prominent environmental issue that requires analysis under the California Environmental Quality Act (CEQA). The California Natural Resources Agency adopted amendments to the CEQA Guidelines to address the analysis and mitigation of GHG emissions. The amendments to the CEQA Guidelines implementing SB 97 became effective on March 18, 2010.

### 3.2.4 CEQA Guidelines

CEQA Guidelines, Section 15064.4 addresses the significance of GHG emissions. Section 15064.4 calls for a lead agency to make a “good-faith effort” to “describe, calculate or estimate” GHG emissions in CEQA documents. Section 15064.4 further states that the analysis of GHG impacts should include consideration of: (1) the extent to which a project may increase or reduce GHG emissions, (2) whether project emissions would exceed a locally applicable threshold of significance, and (3) the extent to which a project would comply with “regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.” The revisions also state that a project’s incremental contribution to a cumulative effect is not cumulatively considerable if the project would comply with the requirements in a previously approved plan or mitigation program (including plans or regulations for the reduction of GHG emissions) that provides specific requirements that would avoid or substantially lessen the cumulative problem within the geographic area in which the project is located (CEQA Guidelines Section 15064(h)(3)). The CEQA Guidelines revisions do not, however, set a numerical threshold of significance for GHG emissions.

### 3.2.5 Assembly Bill 1826

Governor Brown signed AB 1826 (Chapter 727, Statutes of 2014) in October 2014. AB 1826 requires businesses to recycle their organic waste on and after April 1, 2016, depending on the amount of waste they generate per week. The law also requires local jurisdictions across California to implement organic waste recycling programs to divert organic waste generated by businesses, including multifamily residential buildings that consist of five or more units. AB 1826 was enacted to reduce the disposal of organic waste in landfills in efforts to reduce GHG emissions from landfills, which is a part of the Scoping Plan.

### 3.2.6 Executive Order B-30-15 & Senate Bill 32

In April 2015, Governor Brown signed 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 Executive Order B-30-15 and codified by SB 32. While the State is on track to exceed the AB 32 Scoping Plan 2020 targets, the 2017 Scoping Plan Update reflects the enacted SB 32 reduction target.

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CARB's 2017 Scoping Plan Update was published on January 20, 2017, as directed by SB 32 and companion legislation AB 197. The mid-term 2030 target is considered critical by CARB on the path to obtaining an even deeper GHG emissions target of 80 percent below 1990 levels by 2050, as directed in Executive Order S-3-05. The 2017 Scoping Plan Update outlines the suite of policy measures, regulations, planning efforts, and investments in clean technologies and infrastructure, providing a blueprint to continue driving down GHG emissions and obtain the statewide goals.

The 2017 Scoping Plan Update establishes a strategy that will reduce GHG emissions in California to meet the 2030 target (note that the AB 32 Scoping Plan only addressed 2020 targets and a long-term goal). Key features of this the 2017 Scoping Plan Update are:

- Cap-and-Trade program places a firm limit on 80 percent of the State's emissions;
- Achieving a 50-percent Renewable Portfolio Standard by 2030 (currently at about 29 percent statewide);
- Increase energy efficiency in existing buildings;
- Develop fuels with an 18-percent reduction in carbon intensity;
- Develop more high-density, transit-oriented housing;
- Develop walkable and bikeable communities;
- Greatly increase the number of electric vehicles on the road and reduce oil demand in half;
- Increase zero-emissions transit so that 100 percent of new buses are zero emissions;
- Reduce freight-related emissions by transitioning to zero emissions where feasible and near-zero emissions with renewable fuels everywhere else; and
- Reduce "super pollutants" by reducing CH<sub>4</sub> and HFCs by 40 percent.

In the 2017 Scoping Plan Update, CARB recommends statewide targets of no more than 6 metric tons CO<sub>2</sub>e per capita (statewide) by 2030 and no more than 2 metric tons CO<sub>2</sub>e per capita by 2050. The statewide per capita targets account for all emissions sectors in the State, statewide population forecasts, and the statewide reductions necessary to achieve the 2030 statewide target under SB 32 and the longer-term State emissions reduction goal of 80 percent below 1990 levels by 2050.

#### **3.2.7 Executive Order B-55-18**

In 2018, a new statewide goal was established to achieve carbon neutrality as soon as possible, but no later than 2045, and to maintain net negative emissions thereafter. CARB and other relevant State agencies are tasked with establishing sequestration targets and create policies/programs that would meet this goal.

#### **3.2.8 Senate Bill 375**

In 2009, Governor Schwarzenegger enacted SB 375 to expand the efforts of AB 32 by controlling indirect GHG emissions caused by urban sprawl. SB 375 provides incentives for local governments and applicants to implement new conscientiously planned growth patterns which

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includes incentives for creating attractive, walkable, and sustainable communities and revitalizing existing communities. The legislation also allows applicants to bypass certain environmental reviews under CEQA if they build projects consistent with the new sustainable community strategies. Development of more alternative transportation options that would reduce vehicle trips and miles traveled, along with traffic congestion, would be encouraged. SB 375 enhances CARB's ability to reach the AB 32 goals by directing the agency in developing regional GHG emission reduction targets to be achieved from the transportation sector for 2020 and 2035. CARB works with the metropolitan planning organizations (e.g., Association of Bay Area Governments [ABAG] and Metropolitan Transportation Commission [MTC]) to align their regional transportation, housing, and land use plans to reduce vehicle miles traveled and demonstrate the region's ability to attain its GHG reduction targets. A similar process is used to reduce transportation emissions of ozone precursor pollutants in the Bay Area.

#### **3.2.9 Senate Bill 350**

In September 2015, the California Legislature passed, and Governor Brown signed SB 350, which increases the State's Renewables Portfolio Standard (RPS) for content of electrical generation from the 33-percent target for 2020 to a 50-percent renewables target by 2030.

#### **3.2.10 Senate Bill 100**

In September 2018, SB 100 was signed by Governor Brown to revise California's RPS program goals, furthering California's focus on using renewable energy and carbon-free power sources for its energy needs. SB 100 would require all California utilities to supply a specific percentage of their retail sales from renewable resources by certain target years. By December 31, 2024, 44 percent of the retail sales would need to be from renewable energy sources, by December 31, 2027, the target would be 52 percent, and by December 31, 2030, the target would be 60 percent. By December 31, 2045, all California utilities would be required to supply retail electricity that is 100 percent carbon-free and sourced from eligible renewable energy resource to all California end-use customers.

#### **3.2.11 California Building Standards Code – Title 24 Part 11 & Part 6**

The California Green Building Standards Code (CALGreen Code) is part of the California Building Standards Code under Title 24, Part 11 (California Building Standards Commission, 2020). The CALGreen Code encourages sustainable construction standards that involve planning/design, energy efficiency, water efficiency resource efficiency, and environmental quality. These green building standard codes are mandatory statewide and are applicable to residential and non-residential developments. The most recent CALGreen Code (2019 California Building Standard Code) was effective as of January 1, 2020.

The California Building Energy Efficiency Standards (California Energy Code) is under Title 24, Part 6 and is overseen by the California Energy Commission. The California Energy Code includes design requirements to conserve energy in new residential and non-residential developments, while being cost effective for homeowners and is enforced and verified by cities during the planning and building permit process. The current energy efficiency standards (2019

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Energy Code) replaced the 2016 Energy Code as of January 1, 2020. Under the 2019 standards, single-family homes are predicted to be 53 percent more efficient than homes built under the 2016 standard due more stringent energy-efficiency standards and mandatory installation of solar photovoltaic systems. For nonresidential developments, it is predicted that these buildings will use 30 percent less energy due to lighting upgrades (California Energy Commission, 2019).

### 3.3 Local Regulations

#### 3.3.1 Overview

Pursuant to California Government Code Section 53091, EBMUD, as a local agency and utility district serving a broad regional area is not subject to building and land use zoning ordinances for projects involving facilities for the production, generation, storage, or transmission of water. However, it is the practice of EBMUD to work with local jurisdictions and neighboring communities during project planning, and to consider local environmental protection policies for guidance.

#### 3.3.2 Bay Area Air Quality Management District CEQA Guidelines

The Bay Area Air Quality Management District (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 (BAAQMD CEQA Guidelines). The BAAQMD CEQA Guidelines also outline a methodology for estimating GHG emissions. In jurisdictions where a qualified GHG Reduction Strategy has been reviewed under CEQA and adopted by decision-makers, compliance with the GHG Reduction Strategy would reduce a project's contribution to cumulative GHG emission impacts to a less than significant level. The BAAQMD CEQA Guidelines also outline a methodology for estimating GHG emissions.

#### 3.3.3 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 2017 Clean Air Plan (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 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, 2017b).

#### 3.3.4 City of Oakland General Plan

The City of Oakland General Plan Open Space, Conservation, and Recreation Element (City of Oakland, 1996) includes the following policies relevant to the reduction in energy use, which would also reduce GHG emissions.

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- **Policy CO-13.2: Energy Efficiency.** Support public information campaigns, energy audits, the use of energy-saving appliances and vehicles, and other efforts which help Oakland residents, businesses, and City operations become more energy efficient.
- **Policy CO-13.3: Construction Methods and Materials.** Encourage the use of energy-efficient construction and building materials. Encourage site plans for new development which maximize energy efficiency.
- **Policy CO-13.4: Alternative Energy Sources.** Accommodate the development and use of alternative energy resources, including solar energy and technologies which convert waste or industrial byproducts to energy, provided that such activities are compatible with surrounding land uses and regional air and water quality requirements.

#### 3.3.5 City of Oakland Energy and Climate Action Plan

The City of Oakland has prepared an Energy and Climate Action Plan (ECAP) to reduce citywide GHG emissions. The City of Oakland has 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 Oakland ECAP to achieve emissions reductions in the transportation, residential, and commercial sector.

PA 20	Refine Implementation of the Construction and Demolition (C&D) Recycling Ordinance.
Action MW-2	Refine implementation of Oakland's C&D Debris Waste Reduction & Recycling Ordinance (OMC 15.34) to capture greater amounts of materials for reuse, recycling and composting.

#### Department of Planning and Building Standard Conditions of Approval

The City of Oakland has adopted and implemented Standard Conditions of Approval that apply to projects when they receive discretionary planning-related approval. They were initially adopted in November of 2008, and recently revised in January of 2020. Under Section 53091 of the California Government Code, EBMUD, as a local agency and utility district, is not subject to building and land use zoning ordinances for projects involving facilities for the production, generation, storage, treatment, or transmission of water. However, EBMUD's practice is to work with local jurisdictions and neighboring communities during project planning and to consider local environmental protection policies for guidance.

#### 3.3.6 EBMUD 2014 Climate Change Monitoring and Response Plan

In 2008, EBMUD adopted a climate change objective in EBMUD's Strategic Plan focusing on using resources (economic, environmental, and human) in a responsible manner that meets current needs without compromising the ability to meet future needs. In response to the climate change objective, EBMUD prepared the EBMUD 2014 Climate Change Monitoring and Response Plan. EBMUD also prepared an Action Plan that provides guidance to inform EBMUD of decisions regarding water supply, water quality, and infrastructure planning.

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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 MTCO<sub>2e</sub> which was 31 percent below 2000 GHG emission levels. EBMUD tracks GHG emissions per the California Climate Action Registry protocols (EBMUD, 2014).

#### 3.3.7 EBMUD Standard Construction Specifications

EBMUD Standard Construction Specifications set forth the contract requirements for environmental compliance to which EBMUD and its contractors must adhere. These specifications are implemented on all EBMUD projects as part of standard construction procedures and stipulate that EBMUD and its contractors are responsible for maintaining compliance with applicable federal, State, and local requirements. Standard Construction Specifications related to GHGs that would be implemented as part of the Project include Standard Construction Specification 01 35 44, Environmental Requirements.

#### Standard Construction Specification 01 35 44, Environmental Requirements

EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements, includes practices and procedures for minimizing GHG emissions from fuel combustion as described below (EBMUD, 2018). Specifically, EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, Section 3.4.A, Air Quality and Emissions Control, requires implementation of the following control standard practices:

- The Contractor shall ensure that line power is used instead of diesel generators at all construction sites where line power is available.
- The Contractor shall ensure that for operation of any stationary, compression-ignition engines as part of construction, comply with Section 93115, Title 17, California Code of regulations, Airborne Toxic Control Measure for Stationary Compression Ignition Engines, which specifies fuel and fuel additive requirements as well as emission standards.
- Fixed temporary sources of air emissions (such as portable pumps, compressors, generators, etc.) shall be electrically powered unless the Contractor submits documentation and receives approval from the East Bay Municipal Utility District 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 CARB or otherwise permitted by the appropriate local air district, as required.
- Contractor shall implement standard air emissions controls such as:
  - Minimize the use of diesel generators where possible.
  - Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes as required by the California Airborne Toxics Control Measure (ATCM) Title 13, Section 2485 of California Code of Regulations. Clear signage shall be provided for construction workers at all access points.

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- Minimize the idling time of diesel-powered construction equipment to five minutes.
- 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 and ball fields.
- Perform regular low-emission tune-ups on all construction equipment, particularly haul trucks and earthwork equipment.
- Contractor shall implement the following standard practices to reduce greenhouse gas emissions from fuel combustion:
  - On road and off-road vehicle tire pressures shall be maintained to manufacturer specifications. Tires shall be checked and re-inflated at regular intervals.
  - Construction equipment engines shall be maintained to manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
  - All construction equipment, diesel trucks, and generators shall be equipped with Best Available Control Technology for emission reductions of Nitrogen Oxides (NOx) and Particulate Matter (PM).
  - Demolition debris shall be recycled for reuse to the extent feasible.

# 4 Impact Analysis

## 4.1 Methodology for Analysis

For quantifying a project's GHG emissions, BAAQMD recommends that all GHG emissions from a project be estimated, including a project's direct and indirect GHG emissions from operations. Direct emissions refer to emissions produced from the 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, 2017b).

The BAAQMD CEQA Guidelines include significance thresholds for land use development projects and other projects with stationary sources that generate GHGs. 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 on the site. Direct GHG emissions from worker trips for maintenance activities and from temporary equipment, as well as indirect emissions from electricity use for operation and maintenance, would be similar to existing conditions. 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. Both the California Emissions Estimator Model (CalEEMod version 2016.3.2) and the Sacramento Air Quality Management District Road Construction Emissions Model (RCEM) Version 9.0 were used to estimate GHG emissions from construction of the new PP, new pipeline, demolition of the existing PP, and pipeline abandonment. Construction activities include off-road equipment emissions, and on-road construction worker, haul, and vendor truck emissions. Model outputs are provided as part of *East Bay Municipal Utility District Fontaine Pumping Plant Replacement Project Air Quality Technical Report* (Panorama Environmental and Illingworth & Rodkin, 2021).

Direct and indirect GHG emissions from operation of the new PP are evaluated in context of the goals of AB 32 and the 2017 Scoping Plan Update, SB 32, the BAAQMD's 2017 CAP, and the Oakland ECAP to determine whether the Project would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

Both BAAQMD and the California Air Pollution Control Officers Association (CAPCOA) consider GHG impacts to be exclusively cumulative impacts, in that no single project could, by itself, result in a substantial change in climate (BAAQMD, 2017b and CAPCOA, 2008). Therefore, the evaluation of GHG impacts evaluates whether the Project would make a considerable contribution to cumulative climate change effects.

# 5 Project Impacts and Mitigation Measures

## 5.1 Significance Criteria

Consistent with Appendix G of the CEQA Guidelines, the Project is considered to have a significant impact related to greenhouse gas emissions if it would:

1. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
2. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

## 5.2 Impacts and Mitigation Measures

**Impact GHG-1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. (*Less than Significant*)**

### Construction

GHG emissions associated with development of the Project would occur over the short-term from construction activities, consisting primarily of emissions from equipment exhaust and worker and vendor trips. Both the California Emissions Estimator Model (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 (i.e., the new PP site, new pipeline alignments, and existing PP) and other project-specific information were input to each model, as described in the *East Bay Municipal Utilities District Fontaine Pumping Plant Replacement Project Air Quality Technical Report* (Panorama Environmental and Illingworth & Rodkin, 2021).

GHG emissions associated with construction were computed to be 305 MT of CO<sub>2e</sub>. These are the emissions from construction and demolition equipment, vendor and hauling truck trips, and worker trips. BAAQMD has not adopted thresholds of significance for construction related GHG emissions, though BAAQMD recommends quantifying emissions and disclosing that GHG emissions would occur during construction. BAAQMD also encourages the incorporation of best management practices (BMPs) to reduce GHG emissions during construction where feasible and applicable. As detailed in Section 3.3.7, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including Standard Construction Specification 01 35 44, Environmental Requirements. Specifically, Section 3.4.A, Air Quality and Emissions Control, of EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements, requires EBMUD and its contractor to implement the following:

- Maintaining tire pressures to manufacturer specifications for on- and off-road vehicles and checking and reinflating of tires at regular intervals.

## 5 PROJECT IMPACTS AND MITIGATION MEASURES

- Maintaining construction equipment engines to manufacturer specifications with all equipment checked by a certified mechanic and determined to be running in proper condition prior to operation.
- Equipping all construction equipment, diesel trucks, and generators with Best Available Control Technology (BACT) for emissions reductions of NOx and PM.
- Recycling of demolition debris for reuse to the extent feasible.

Because EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements, has been incorporated into the Project and includes various GHG-reduction BMPs such as specified 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 best achievable control technology (BACT) on all equipment, the Project's construction impacts related to GHG emissions would be less than significant.

### **Operation**

Long-term operational GHG emissions of the existing PP are associated with worker trips to conduct routine inspection and maintenance activities and energy usage. Operation of the new PP and new pipelines would not include any new sources of GHG emissions. The new PP and new 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 two trips per month required. Indirect operational GHG emissions would be associated with emissions from electricity generation for line power provided by the Pacific Gas and Electric Company 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.

**Impact GHG-2: Potential to conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. (*Less than Significant*)**

### **Construction**

Project GHG emissions are analyzed in the context of the GHG reduction goals of AB 32, SB 32, the 2017 Scoping Plan Update, the BAAQMD's 2017 CAP, and the Oakland ECAP to determine whether the Project would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions.

Construction of the new PP and new pipelines 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-

## 5 PROJECT IMPACTS AND MITIGATION MEASURES

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 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 2017 CAP and the City of Oakland 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 2017 Clean Air Plan and the Oakland ECAP, the City of Oakland implements its waste reduction goal through its Construction and Demolition Debris Recycling Ordinance. As detailed in Section 3.3.7, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the project, including Standard Construction Specification 01 35 44, Environmental Requirements. Section 3.4.A, Air Quality and Emissions Control, of this specification requires the contractor to recycle construction waste or demolition materials to the extent feasible. Furthermore, construction of the new PP would use recycled materials and reuse excavated earth on site to the extent feasible, as directed in Section 4.3.4, Use of Recycled Materials, of the *East Bay Municipal Utility District Fontaine Pumping Plant Replacement Project Aesthetic Conceptual Design Report* (Panorama Environmental, Inc., MWA Architects, and Dillingham Associates, 2021). Therefore, the Project would be consistent with the goals in the 2017 Clean Air Plan and the Oakland ECAP and construction-related GHG emissions would not conflict with any plans, policies, or regulations adopted for the purpose of reducing GHG emissions (i.e., 2017 Scoping Plan Update actions, 2017 Clean Air Plan, and the City of Oakland ECAP).

Additionally, as detailed in Section 3.3.7, 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 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. As such, 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.

### **Operation**

According to EBMUD's 2014 Climate Change Monitoring and Response Plan, 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 new pipelines would operate in a similar manner as the existing PP and pipelines, which are

## 5 PROJECT IMPACTS AND MITIGATION MEASURES

currently operated and monitored remotely. Worker vehicle trips for operation and maintenance would be similar to existing conditions, with approximately two trips per month required. GHG emissions associated with maintenance traffic would be similar to existing levels with no substantial increase in direct operational GHG emissions resulting from the Project. EBMUD's 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 2017 CAP.

With respect to indirect operational GHG emissions associated with electrical energy use, the Project would not increase electricity demand over existing conditions. Furthermore, as set forth in the 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, 2017 CAP, or the BAAQMD CEQA significance thresholds and the impact would be less than significant.

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