East Bay Municipal Utility District

Fontaine Pumping Plant Replacement Project
Final Air Quality Technical Report

September 2021

717 Market Street, Suite 400
San Francisco, CA 94103
650-373-1200
www.panoramaenv.com

ILLINGWORTH & RODKIN, INC.
Acoustics • Air Quality

PANORAMA ENVIRONMENTAL, INC.

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Prepared for:
East Bay Municipal Utility District
375 11th Street
Oakland, CA 94607

Prepared by:
Panorama Environmental, Inc.
717 Market Street, Suite 400
San Francisco, CA 94103
650-373-1200
and
Illingworth & Rodkin, Inc.
429 E. Cotati Avenue
Cotati, CA 94931
707-794-0400

www.panoramaenv.com

ILLINGWORTH & RODKIN, INC.
Acoustics • Air Quality

PANORAMA
ENVIRONMENTAL, INC.

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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-feet wide, 50-feet long, and 23-feet 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).

Figure 1 Existing Fontaine Pumping Plant (8445 Ney Avenue)

Figure 2 Existing Pipeline Abandonment Disconnection Sites

Figure 3 New Fontaine Pumping Plant (9601 MacArthur Boulevard)

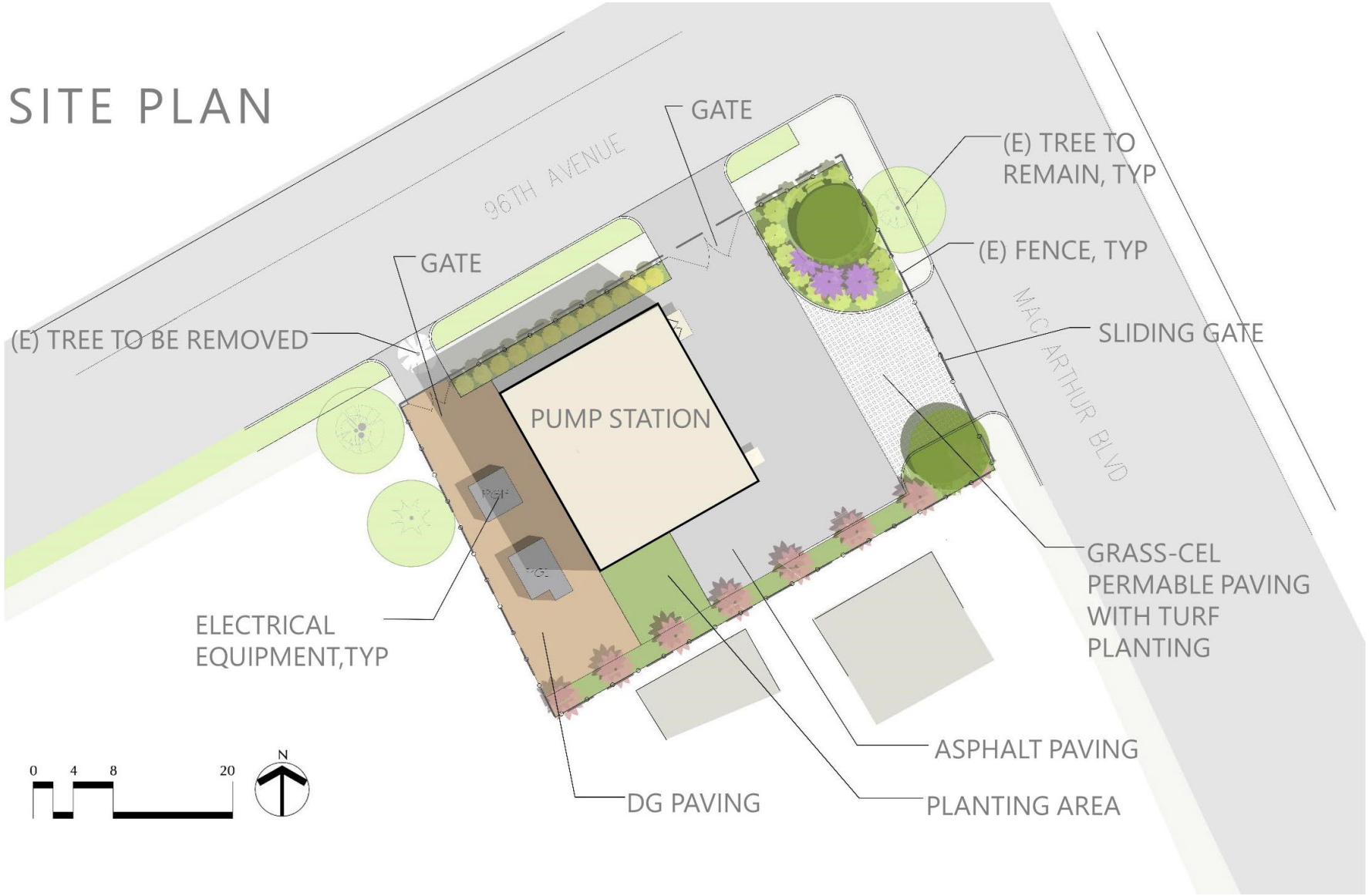

Figure 4 New Pumping Plant and New Pipeline Location

1.2 Definitions

1.2.1 Ozone

Ground-level ozone (O_3) forms through the reaction of pollutants emitted by industrial facilities, electric utilities, and motor vehicles. Chemicals that are precursors to ozone formation can also be emitted by natural sources. Ground-level ozone can pose risks to human health, in contrast to the stratospheric ozone layer that protects the earth from harmful wavelengths of solar ultraviolet radiation. Short-term exposure to ground-level ozone can cause a variety of respiratory health effects, including inflammation of the lining of the lungs, reduced lung function, and respiratory symptoms such as cough, wheezing, chest pain, burning in the chest, and shortness of breath.

1.2.2 Particulate Matter

Particulate matter (PM) is a generic term for a broad class of chemically and physically diverse substances that exist as discrete particles (liquid droplets or solids) over a wide range of sizes. Particulate matter is assessed and measured in terms of respirable particulate matter or particles that have a diameter of 10 micrometers or less (PM_{10}) and fine particulate matter where particles have a diameter of 2.5 micrometers or less ($PM_{2.5}$).

1.2.3 Carbon Monoxide

Carbon monoxide (CO) is created from the incomplete combustion of fuels. Gasoline-fueled vehicles and other on-road and non-road mobile sources are the primary sources of CO. Exposure to carbon monoxide reduces the capacity of the blood to carry oxygen, thereby decreasing the supply of oxygen to tissues and organs such as the heart.

1.2.4 Lead

Lead (Pb) is a toxic metal that can accumulate in bones, blood, and soft tissues of the body. The major source of lead emissions to the air was combustion of leaded gasoline in motor vehicles (such as cars and trucks). Following the elimination of leaded gasoline in the United States by the mid-1990s, the remaining sources of lead air emissions have been industrial sources, including lead smelting and battery recycling operations, and piston-engine small aircraft that use leaded aviation gasoline.

1.2.5 Nitrogen Oxides

Nitrogen oxides (NOx) are pollutants that include the various forms of nitrogen combined with oxygen, including nitric oxide (NO) and nitrogen dioxide (NO_2). NO_X are emitted from the burning of fuels by cars, trucks, buses, power plants, and non-road engines and equipment. Exposure to NO_2 has been associated with a variety of health effects, including respiratory symptoms, especially among asthmatic children, and respiratory-related emergency department visits and hospital admissions, particularly for children and older adults.

1.2.6 Sulfur Oxides

Sulfur oxides (SO_X) are pollutants that include the various forms of sulfur combined with oxygen, including sulfur dioxide (SO_2). SO_X are emitted from the burning of fossil fuel combustion by electrical utilities and industry. Studies have linked short-term SO_2 exposures to increased respiratory symptoms in children, especially those with asthma or chronic respiratory symptoms. Short-term exposures to SO_2 have also been associated with respiratory-related emergency department visits and hospital admissions, particularly for children and older adults.

1.2.7 Greenhouse Gases

Greenhouse gases (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 (HCHs).

Some gases are more effective than others at making the planet warmer. 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 (known as Super GHGs) include $CH_4$and N_2O.

1.2.8 Emissions Model

Various computer programs may be used to calculate air emissions and emissions rates. Standard modeling programs include, but are not limited to, the California Emissions Estimator Model (CalEEMod version 2016.3.2), EMission FACtors (EMFAC), and Roadway Construction Emissions Model (RCEM). These computer programs are discussed further in Section 4.1.1.

1.2.9 Dispersion Model

A dispersion model is a computer program that estimates the ambient concentration of a pollutant at a given location once its emissions rate is estimated. The United States Environmental Protection Agency's (U.S. EPA) AERMOD is an example of a typically used dispersion model and is discussed further in Section 4.1.3.

1.2.10 Health Risk Assessment

A Health Risk Assessment (HRA) is a technical study that evaluates how toxic air contaminant (TAC) emissions are released from a project, how they disperse throughout the community, and how they may affect human health. Additional information on TACs is presented in Section 2.3.3. The State of California Office of Environmental Health Hazard Assessment (OEHHA) and California Air Resources Board (CARB) develop recommended methods for conducting HRAs. The TACs typically evaluated in an HRA are diesel particulate matter (DPM), $PM_{2.5}$, and organic gases (i.e., reactive organic gases [ROG]). DPM is a carcinogen and $PM_{2.5}$ has been identified as a pollutant with potential non-cancer health effects that should be included when evaluating potential community health impacts under the California Environmental Quality Act (CEQA).

1.2.11 Hazard Index

Potential non-cancer health hazards from TAC exposure are expressed in terms of a hazard index (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.

1.2.12 Maximally Exposed Individual

A maximally exposed individual (MEI) is a hypothetical individual who, because of proximity, activities, and living habits, would be exposed to the highest concentration(s) of TAC(s).

2 Environmental Setting

2.1 Climate and Meteorology

Climate and meteorology are important considerations for air quality. Local dispersion and regional transport of air pollutants directly relate to prevailing meteorology. Diurnal, seasonal, and regional air pollution patterns are controlled by a variety of meteorological factors. Wind directions and speeds, and vertical temperature structure (inversions) are the primary determinants of transport and dispersion effects.

Along Alameda County's western coast, temperatures are moderated by the San Francisco Bay, which can act as a heat source during cold weather or cool the air by evaporation during warm weather. It is generally sunnier farther inland from the coast, although partly cloudy skies are common throughout the summer. Average summer temperatures are mild overnight and moderate during the day. Winter temperatures are cool overnight and mild during the day. Higher temperatures are more common inland. Wind speeds vary throughout the county, with the strongest gusts along the western coast, often aided by dominant westerly winds and a San Francisco Bay-breeze effect. Rainfall totals average between 14 and 23 inches per year, with the highest totals in the northern end of the county and atop the Oakland-Berkeley hills.

2.2 Air Basins

Air basins are geopolitical regional areas designated by the State of California (State) for the purpose of air quality management and air pollution control. The proposed Project area is in the western portion of Alameda County within the San Francisco Bay Area Air Basin (Air Basin). The Air Basin is located along the northern coast of California and covers roughly 5,340 square miles, encompassing several counties, including all of Alameda County.

2.3 Existing Air Quality Conditions

2.3.1 Air Pollutants

The U.S. EPA set National Ambient Air Quality Standards (NAAQS) for six criteria air pollutants. The six criteria pollutants are ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, particulate matter, and lead. CARB, a department of the California EPA (CalEPA), has established the California Ambient Air Quality Standards (CAAQS). The CAAQS and NAAQS are shown in Table 1. The federal and State ambient standards were developed independently with differing purposes and methods, although both processes attempted to set standards that would avoid health-related effects. Federal and State standards differ in some cases. California

standards are generally more stringent than federal standards, which is particularly true for ozone and PM_{10}.

There are two types of NAAQS: primary and secondary. Primary standards are established to provide public health protection, including protecting the health of "sensitive" populations such as asthmatics and children. Secondary standards are established to provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings.

2.3.2 Air Quality Attainment Status

Table 2 presents a summary of the air quality attainment designations by the U.S. EPA and CARB for the Air Basin. An attainment area is a geographic area identified to have air quality as good as or better than the ambient air quality standards. Areas with air quality that is worse than adopted air quality standards are designated as "nonattainment" areas for the relevant air pollutants. Nonattainment areas are sometimes further classified by degree (i.e., marginal, moderate, serious, severe, and extreme) or status (i.e., nonattainment-transitional). Once a nonattainment area meets the standards and additional re-designation requirements in the Clean Air Act (CAA), the area is designated as a maintenance area. Unclassified areas are those with insufficient air quality monitoring data to support a designation of attainment or nonattainment but are generally presumed to comply with the ambient air quality standard.

The Air Basin meets all ambient air quality standards except for ozone, PM_{10}, and $PM_{2.5}$. Ozone and $PM_{2.5}$ are the major regional air pollutants of concern in the Air Basin. Ozone is primarily a problem in the summer, and fine particle pollution is a problem in the winter.

High ozone levels are caused by the cumulative emissions of precursor pollutants, including ROG and NO_x, that react under certain meteorological conditions. High ozone levels aggravate respiratory and cardiovascular diseases, reduce lung function, and increase coughing and chest discomfort. Controlling the emissions of precursor pollutants is the focus of the Bay Area Air Quality Management District's (BAAQMD's) attempts to reduce ozone levels. The highest ozone levels in the San Francisco Bay Area occur in the eastern and southern inland valleys that are downwind of air pollutant sources. In Alameda County west of the East Bay hills, ozone rarely exceeds health standards because the area is adjacent to the San Francisco Bay, which tends to keep temperatures well below prime levels for ozone formation.

Table 1 Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	National Standards[a]	
			Primary[b,c]	Secondary[b,d]
O_3	8-hour	0.070 ppm (137 µg/m^3)	0.075 ppm (147 µg/m^3)	—
	1-hour	0.09 ppm (180 µg/m^3)	—[e]	Same as primary
CO	8-hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	—
	1-hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	—
NO_2	Annual	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as primary
	1-hour	0.18 ppm (339 µg/m^3)	0.100 ppm[f] (188 µg/m^3)	—
SO_2	Annual	—	—[g]	—
	24-hour	0.04 ppm (105 µg/m^3)	—[g]	—
	3-hour	—	—	0.5 ppm (1300 µg/m^3)
	1-hour	0.25 ppm (655 µg/m^3)	0.075 ppm[g] (196 µg/m^3)	—
PM_{10}	Annual	20 µg/m^3	—	Same as primary
	24-hour	50 µg/m^3	150 µg/m^3	Same as primary
$PM_{2.5}$	Annual	12 µg/m^3	12 µg/m^3	—
	24-hour	—	35 µg/m^3	—
Pb	Calendar quarter	—	1.5 µg/m^3	Same as primary
	30-day average	1.5 µg/m^3	—	—

Notes:

ppm = parts per million

µg/m^3 = micrograms per cubic meter

mg/m^3 = milligrams per cubic meter

[a] Standards, other than for ozone and those based on annual averages, are not to be exceeded more than once a year. The ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than one.

[b] Concentrations are expressed first in units in which they were promulgated. Equivalent units given in parenthesis.

[c] Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health. Each state must attain the primary standards no later than 3 years after that state's implementation plan is approved by the U.S. EPA.

[d] Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[e] The national 1-hour ozone standard was revoked by U.S. EPA on June 15, 2005. A new 8-hour standard was established in May 2008.

[f] The form of the 1-hour NO_2 standard is the 3-year average of the 98th percentile of the daily maximum 1-hour average concentration.

[g] On June 2, 2010, the U.S. EPA established a new 1-hour SO_2 standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of the 1-hour daily maximum. The U.S. EPA also revoked both the existing 24-hour and annual average SO_2 standards.

Table 2 San Francisco Bay Area Air Basin Air Quality Attainment Designations

Pollutant	Federal Designation	State Designation
O_3	Marginal nonattainment	Nonattainment
CO	Attainment	Attainment
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment
Pb	Attainment	Attainment
PM_{10}	Unclassified	Nonattainment
$PM_{2.5}$	Moderate nonattainment	Nonattainment
Sulfates	No federal standard	Attainment
Hydrogen Sulfide (H_2S)	No federal standard	Unclassified
Visibility Reducing Particles	No federal standard	Unclassified

Sources: (CARB, 2018), (USEPA, 2015)

Elevated concentrations of PM_{10} and $PM_{2.5}$ are the result of both region-wide (or cumulative) emissions and localized emissions. High particulate matter levels aggravate respiratory and cardiovascular diseases, reduce lung function, increase mortality (e.g., lung cancer), and result in reduced lung function growth in children. Fine particle pollution is a concern in the San Francisco Bay region due to cool winter nights with light winds, wood smoke, and occasional pollution transport from the Livermore Valley to the east. The highest concentrations of particulates occur during winter, particularly at night due to cool temperatures, low wind speeds, low inversion layers, and high humidity (ABAG, 2017).

Existing and probable future air quality in the Project area can best be inferred from examining ambient air quality measurements taken by BAAQMD at its monitoring station closest to the Project area, which is the Oakland East monitoring station located approximately 0.8 miles away from the new PP site. The Oakland East monitoring site does not, however, monitor SO_2. The West Oakland monitoring station was used to represent ambient concentrations of SO_2 in the Project area. Table 3 presents local ambient air quality monitoring data for 2014 through 2018 and compares measured pollutant concentrations with the most stringent applicable State and federal ambient air quality standards.

Table 3 Summary of Ambient Air Quality Data from Nearby Monitoring Stations

Pollutant	Most Stringent Applicable Standard	Number of Days where Exceeded and Maximum Concentration Measured				
		2014	2015	2016	2017	2018
O_3						
Number of days 1-hour standard exceeded	0.09 ppm[a]	0	**0**	0	**2**	0
Maximum 1-hour (ppm)		0.083	**0.094**	0.082	**0.136**	0.061
Number of days 8-hour standard exceeded	0.07 ppm[a]	0	**2**	0	**2**	0
Maximum 8-hour (ppm)		0.068	**0.074**	0.057	**0.100**	0.052
NO_2						
Number of days 1-hour standard exceeded		0	0	0	0	0
Maximum 1-hour (ppm)	0.18 ppm[a]	0.082	0.048	0.059	0.065	0.073
CO						
Number of days 1-hour standard exceeded	20 ppm[a]	0	0	0	0	0
Maximum 1-hour (ppm)		2.8	2.4	2.6	3.2	3.3
Number of days 8-hour standard exceeded	9 ppm[a]	0	0	0	0	0
Maximum 8-hour (ppm)		1.7	1.4	1.0	2.2	2.4
SO_2*						
Number of days 1-hour standard exceeded	0.25 ppm[a]	0	0	0	0	0
Maximum 1-hour (ppm)		0.0165	0.0216	0.0264	0.0169	0.0119
Number of days 24-hour standard exceeded	0.04 ppm[a]	0	0	0	0	0
Maximum 24-hour (ppm)		0.0033	0.0039	0.0031	0.0022	0.0025
PM_{10}						
Maximum 24-hour (µg/m3)	50 µg/m^3 [a,c]	—	—	—	—	—
Number of days 24-hour standard exceeded		—	—	—	—	—
$PM_{2.5}$						
Maximum 24-hour (µg/m^3)	35 µg/m^3 [b]	**37.6**	**44.7**	15.5	**70.2**	**172.1**
Number of days 24-hour standard exceeded		**1**	**1**	0	**7**	**14**
Annual average (µg/m^3)	12 µg/m^3 [a]	8.5	8.3	6.1	9.4	11.8

Notes:
Bold values are in excess of most stringent applicable standard
- indicates that no data is available
*Data from West Oakland monitoring station
ppm = parts per million
µg/m^3 = micrograms per cubic meter
[a] State standard, not to be exceeded
[b] Federal standard, not to be exceeded
[c] PM_{10} is only sampled every sixth to twelfth day

Source: (BAAQMD, 2014) (BAAQMD, 2015) (BAAQMD, 2016) (BAAQMD, 2017a) (BAAQMD, 2018)

2.3.3 Toxic Air Contaminants

TACs are a broad class of compounds known to have the potential to cause morbidity or mortality (i.e., have carcinogenic qualities) and include, but are not limited to, the criteria air pollutants listed above. TACs are commonly found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., diesel particulate matter near a freeway). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, state, and federal levels.

Diesel exhaust is the predominant TAC in urban air and is estimated to represent about three-quarters of the cancer risk from TACs (based on the San Francisco Bay Area average). According to CARB, diesel exhaust is a complex mixture of gases, vapors, and fine particles that make the evaluation of health effects of diesel exhaust a complex scientific issue. Some of the gaseous components of diesel exhaust, such as benzene, formaldehyde, and 1,3-butadiene, are suspected or known to cause cancer in humans. The particulate portion of diesel exhaust is mainly comprised of aggregates of spherical carbon particles coated with inorganic and organic substances. The inorganic fraction primarily consists of small solid carbon. The organic fraction consists of soluble organic compounds such as aldehydes, alkanes, and alkenes, and high-molecular weight polycyclic aromatic hydrocarbon (PAH) and PAH-derivatives. Many of the PAH and PAH-derivatives have been found to be potent mutagens and carcinogens. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by CARB, and are listed as carcinogens either under the State's Proposition 65 or under the federal Hazardous Air Pollutants programs. The most recent OEHHA risk assessment guidelines were published in February of 2015 (OEHHA, 2015). See Appendix A for a detailed description of the community risk modeling methodology used to develop the health risk assessment for this technical study.

CARB has adopted and implemented several regulations for stationary and mobile sources to reduce emissions of DPM. Several of the regulatory programs affect medium and heavy-duty diesel trucks that represent the bulk of DPM emissions from California highways, and include the solid waste collection vehicle rule, in-use public and utility fleets, and the heavy-duty diesel truck and bus regulations.

2.3.4 Odors

Land uses around the Project area are primarily residential and commercial (i.e., business space and retail). There are no stationary odor-producing land uses (e.g., landfills, refineries, confined animal feeding operations) in the Project area.

2.3.5 Sensitive Receptors

Some groups of people are more affected by air pollution than others. CARB has identified the following persons who are most likely to be affected by air pollution and are classified as sensitive receptors: children under 14, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. Locations that may contain a high

concentration of sensitive receptors include residential areas, hospitals, daycare facilities, elder care facilities, elementary schools, and parks. The closest sensitive receptors to project construction activities are residences, parks, and elementary schools located on streets adjacent to where construction would occur. For the purposes of the air quality and greenhouse gas emissions analyses, all residential locations in the vicinity of project construction activities are assumed to include infants, children, and adults. Table 4 summarizes the types of sensitive receptors located within the Project area.

Table 4 Nearest Sensitive Receptor Types within the Project Area

Project Element	Nearest Sensitive Receptor Type	Distance from the Edge of Construction Area to Nearest Receptor
Existing PP	Single Family Residences	Approximately 20 feet west
New PP	Single and Multi-Family Residences	Approximately 10 feet southeast
Suction Pipeline	Single and Multi-Family Residences	Approximately 43 feet north
Discharge Pipeline	Single and Multi-Family Residences	Approximately 27 feet east
Existing Pipeline Abandonment Disconnection Sites	Single Family Residences	Approximately 40 to 60 feet in any direction

3 Regulatory Setting

3.1 Federal Regulations

The U.S. EPA is responsible for enforcing the federal CAA and the 1990 amendments. The NAAQS, as previously discussed, were established by the federal CAA of 1970 and amended in 1977 and 1990. The ambient air quality standards are prescribed levels of pollutants that represent safe levels that avoid specific adverse health effects associated with each pollutant. Table 1presents the NAAQS for the criteria air pollutants at different averaging periods.

As part of its enforcement responsibilities, the U.S. EPA requires each state with nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the federal standards. The SIP must integrate federal, state, and local plan components and regulations, and identify specific measures to reduce pollution in nonattainment areas, using a combination of performance standards and market-based programs.

3.2 State Regulations

3.2.1 California Ambient Air Quality Standards

CARB oversees air quality planning and control throughout California. It is primarily responsible for ensuring implementation of the 1989 amendments to the California Clean Air Act (CCAA), responding to the federal CAA requirements, and regulating emissions from motor vehicles and consumer products within the State. CARB has established emission standards for vehicles sold in California and for various types of equipment available commercially. CARB also sets fuel specifications to further reduce vehicular emissions and develops airborne toxic control measures to reduce TACs identified under CARB regulations.

CARB is also responsible for establishing and reviewing State standards, compiling the California SIP, securing approval of the SIP from the U.S. EPA, conducting research and planning, and identifying TACs. CARB regulates mobile sources of emissions in California, such as construction equipment, trucks, and automobiles, and oversees the activities of California's air quality management districts, which are organized at the county or regional level.

Pursuant to the CCAA, CARB is responsible for setting CAAQS under California Health and Safety Code Section 39606. The CAAQS, listed in Table 1 and previously discussed, are intended to protect public health, safety, and welfare.

3.2.2 On-Road Heavy-Duty Diesel Vehicles (In-Use) Regulation

In 2008, CARB approved the On-Road Heavy-Duty Diesel Vehicles (In-Use) Regulation to reduce emissions of DPM and NO_x from existing on-road heavy-duty diesel-fueled vehicles

(CARB, Truck and Bus Regulations, 2014). The regulation requires affected vehicles to meet specific performance requirements between 2014 and 2023, with all affected diesel vehicles required to have 2010 model-year engines or equivalent by 2023. The requirements are phased in over the compliance period and depend on the model year of the vehicle.

3.3 Local Regulations

3.3.1 Overview

Pursuant to California Government Code Section 53091, 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.

3.3.2 Bay Area Air Quality Management District Regulations

BAAQMD is the regional agency responsible for air quality regulations within the Air Basin. BAAQMD regulates air quality through its planning and review activities. BAAQMD has permit authority over most types of stationary emission sources, 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 regulates new or expanding stationary sources of toxic air contaminants.

In 2017, the BAAQMD issued the 2017 Clean Air Plan, Spare the Air, Cool the Climate (2017 Plan). The 2017 Plan focuses on two closely-related goals: protecting public health and protecting the climate. Because the region is designated nonattainment for both the 1- and 8-hour State ozone standards, and emissions of ozone precursors in the Air Basin contribute to air quality problems in neighboring air basins, the 2017 Plan lays the groundwork for a long-term effort to reduce Bay Area GHG emissions 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050, consistent with the GHG reduction targets adopted by the State. The 2017 Plan addresses four categories of pollutants: ozone and ozone precursors (ROG and NO_x), particulate matter (primarily $PM_{2.5}$), air toxics, and greenhouse gases (GHGs) and uses a control strategy that includes 85 control measures (BAAQMD, 2017b).

In response to Senate Bill 656, BAAQMD completed the Particulate Matter Implementation Schedule in November 2005. The implementation schedule evaluates the applicability of 103 PM control measures identified by CARB. BAAQMD implements several regulations and programs to reduce PM emissions, such as controlling dust from earthmoving and construction/ demolition operations, limiting emissions from various combustion sources such as cement kilns and furnaces, and reducing PM emissions from composting and chipping activities. In addition to limiting stationary sources, BAAQMD implements a variety of mobile source incentive programs to encourage fleet operators and the public to purchase low-emission

vehicles, re-power old polluting heavy-duty diesel engines, and install aftermarket emission control devices to reduce particulates and NO_x emissions.

BAAQMD Significance Thresholds

BAAQMD has adopted thresholds of significance, included in the most recent BAAQMD's *CEQA Air Quality Guidelines* (BAAQMD Guidelines, 2017). 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 and are summarized in Table 5.

Table 5 BAAQMD Air Quality Significance Thresholds

Criteria Air Pollutant	Construction Thresholds	Operational Thresholds	
	Average Daily Emissions (lbs./day)	Average Daily Emissions (lbs./day)	Annual Average Emissions (tons/year)
ROG	54	54	10
NO_x	54	54	10
PM_{10}	82 (Exhaust)	82	15
$PM_{2.5}$	54 (Exhaust)	54	10
CO	Not Applicable	9.0 ppm (8-hour average) or 20.0 ppm (1-hour average)	
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices	Not Applicable	
Health Risks and Hazards	**Single Sources Within 1,000-foot Zone of Influence**	**Combined Sources (Cumulative from all sources within 1000-foot zone of influence)**	
Excess Cancer Risk	>10 per one million	>100 per one million	
Hazard Index	>1.0	>10.0	
Incremental annual $PM_{2.5}$	>0.3 µg/m^3	>0.8 µg/m^3	

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 CAP.

3.3.3 City of Oakland

City of Oakland General Plan

The City of Oakland General Plan Open Space, Conservation, and Recreation Element, adopted in 1994 provide objectives, policies, and actions for air resources (City of Oakland, 1996).

Objective CO-12	To improve air quality in Oakland and the surrounding Bay Region.
Policy CO-12.6	Control of dust emissions. Require construction, demolition and grading practices which minimize dust emissions.
Action CO-12.6.1	Grading Ordinance Review. Review the grading ordinance on a regular basis to ensure that it includes sufficient provisions for minimizing airborne dust.

Department of Planning and Building Standard Conditions of Approval

The City of Oakland has adopted thresholds from BAAQMD's Guidelines for the analysis of projects proposed within the City. The City of Oakland has adopted and implemented Standard Conditions of Approval that are relevant to the Project's air quality impacts and are also consistent with BAAQMD recommendations. The City's Standard Conditions of Approval apply to all projects under the purview of the City and generate air pollutant emissions. 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. EBMUD's practice, however, is to work with local jurisdictions and neighboring communities during project planning and to consider local environmental protection policies for guidance.

3.4 EBMUD Practices and Procedures

3.4.1 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 air quality that would be implemented as part of the Project include the following:

- Standard Construction Specification 01 35 44, Environmental Requirements
- Standard Construction Specification 02 83 13, Lead Hazard Control Activities
- Standard Construction Specification Section 02 82 13, Asbestos Control Activities

Specific planning documents and procedures related to air quality emissions that are required by EBMUD for construction are described in the following sections by relevant Standard Construction Specification.

Standard Construction Specification 01 35 44, Environmental Requirements

EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements includes practices and procedures for minimizing air quality impacts such as dust control and monitoring, emissions control, and use of BAAQMD-compliant architectural coatings, as described below.

Submittal of a Dust Control and Monitoring Plan

In accordance with Section 1.3.E, Dust Control and Monitoring Plan, of Standard Construction Specification 01 35 44, Environmental Requirements, the Project's contractor must submit a Dust Control and Monitoring Plan detailing the means and methods for controlling and monitoring dust generated by demolition and other work on the site (EBMUD, 2018). The plan must meet the following requirements.

- Comply with all applicable regulations including but not limited to the BAAQMD visible emissions regulation and Public Nuisance Rule.
- Include items such as practices to control fugitive dust emissions generated by construction activities.
- Outline best management practices for preventing dust emissions, provide guidelines for training of employees, and identify procedures to be used during operations and maintenance activities.
- Include requirements for the control of paint overspray generated during the painting of exterior surfaces.
- Detail the equipment and methods used to monitor compliance with the plan.

Dust Control Standard Practices

In accordance with Section 3.3.B, Dust Control, of Standard Construction Specification 01 35 44, Environmental Requirements (EBMUD, 2018), the Project contractor must implement all necessary dust control requirements, including but not limited to the following:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) must be watered minimum two times per day or as directed by the engineer.
- Water and/or coarse rock all dust-generating construction areas as directed by the Engineer to reduce the potential for airborne dust from leaving the site.
- Water and/or cover soil stockpiles daily.
- Cover all haul trucks entering/leaving the site and trim their loads as necessary.
- Using wet power vacuum street sweepers (dry power sweeping is prohibited) to:
    - Sweep all paved access road, parking areas, and staging areas at the construction site daily or as often as necessary.

    - Sweep public roads adjacent to the site at least twice daily or as often as necessary.
- All trucks and equipment, including their tires, must be washed off prior to leaving the site.
- Gravel or apply nontoxic soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites.
- Site accesses to a distance of 100 feet from the paved road must be treated with 12-inches of compacted coarse rock.
- Sandbags or other erosion control devices must be installed to prevent silt run-off to public roadways from sites with a slope greater than 1 percent.
- All roadways, driveways, and sidewalks to be paved must be completed as soon as possible.
- Building pads must be laid as soon as possible after grading unless seeding or soil binders are used.
- Vegetative ground cover (e.g., fast-germinating native grass seed) must be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.
- Wind breaks (e.g., fences) must be installed on the windward sides(s) of actively disturbed areas of construction. Wind breaks should have a maximum 50 percent air porosity.
- The simultaneous occurrence of excavation, grading, and ground disturbing construction activities on the same area at any one time must be limited. Activities must be phased to reduce the amount of disturbed surfaces at any one time.
- All excavation, grading, and/or demolition activities must be suspended when average wind speeds exceed 20 mph.
- All vehicle speeds must be limited to 15 mph or less on the construction site and any adjacent unpaved roads.

Dust Monitoring During Demolition and Construction

In accordance with Section 3.3.C, Dust Monitoring During Demolition and Construction, of Standard Construction Specification 01 35 44, Environmental Requirements, the contractor is required to provide air monitoring per the Dust Control and Monitoring Plan along the perimeter of the jobsite (EBMUD, 2018). A minimum of four stations, one on each side of the EBMUD property, must be established, capable of continuous measurement of total particulate concentration when any dust generating activity is occurring. Dust monitoring must meet the following requirements.

- The Project contractor must not emit from any source for a period or periods aggregating more than 3 minutes in any hour, a visible emission that is as dark as or darker than No. 1 on the Ringelmann Smoke Chart, or of such opacity as to obscure an observer's view to an equivalent or greater degree.
- The Project contractor must not emit from any source for a period or periods aggregating more than 3 minutes in an hour an emission equal to or greater than 20

percent opacity as perceived by an opacity sensing device, where such device is required by BAAQMD regulations.
- All environmental and personal air sampling equipment must be in conformance with the Association of Industrial Hygiene and National Institute of Safety and Health standards.
- All analysis must be completed by a California Department of Health Services certified laboratory for the specific parameters of interest.
- The Project contractor must provide all test results to the Project engineer within 72 hours of sampling.

Dust Control System Compliance
In accordance with Section 3.3.D. of EBMUD Standard Construction Specification 01 35 44 (Environmental Requirements), the Project contractor must implement a dust control system to comply with the Dust Control and Monitoring Plan and any applicable laws and regulations (EBMUD, 2018).

Air Quality and Emissions Control
In accordance with Section 3.4.A, Air Quality and Emissions Control, of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements (EBMUD, 2018), the Project contractor must implement the following control requirements:

- Ensure that line power is used instead of diesel generators at all construction sites where line power is available
- 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.) must 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 must be properly registered with the CARB or otherwise permitted by the BAAQMD, as required.
- Implementation of standard air emissions controls such as:
    - Minimize the use of diesel generators where possible
    - Idling times must 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 must be provided for construction workers at all access points
    - Minimize the idling time of diesel-powered construction equipment to 5 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
- Implementation of the following requirements to reduce GHG emissions from fuel combustion:
    - On road and off-road vehicle tire pressures must be maintained to manufacturer specifications. Tires must be checked and re-inflated at regular intervals
    - Construction equipment engines must be maintained to manufacturer's specifications. All equipment must be checked by a certified mechanic and determined to be running in proper condition prior to operation.
    - All construction equipment, diesel trucks, and generators must be equipped with Best Available Control Technology (BACT) for emission reductions of NOx and PM.

Architectural Coatings

In accordance with Section 3.4.B, Architectural Coatings, of Standard Construction Specification 01 35 44, Environmental Requirements, the Project contractor must use architectural coatings in compliance with appropriate Volatile Organic Compound (VOC) limits as established in the BAAQMD's Regulation 8, Rule 3, and any amendments thereto (EBMUD, 2018).

Standard Construction Specification 02 83 13, Lead Hazard Control Activities

In accordance with Section 1.4.B, Submittals (Pre-Job), of Standard Construction Specification 02 83 13, Lead Hazard Control Activities, before the start of demolition, the Project contractor must prepare a Lead Demolition Plan detailing handling, engineering control, removal, and disposal procedures for lead-containing materials (EBMUD, 2016). 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 procedures, 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.

Standard Construction Specification 02 82 13, Asbestos Control Activities

In accordance with Section 1.1.A of Standard Construction Specification 02 82 13, Asbestos Control Activities, the Project contractor must implement the following control requirements:

- 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. EPA; Occupational Safety and Health Administration; BAAQMD; California Department of Toxic Substance Control; California Department of Occupational Safety and Health; 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.

Section 1.1.B of Standard Construction Specification 02 82 13, Asbestos Control Activities, requires the BAAQMD to be notified at least 10 workdays prior to the beginning of demolition of any asbestos containing structures. Section 1.5.B.1, Asbestos Abatement, a requires that a detailed plan of the procedures proposed for use in complying with the regulations included in this specification and requires that asbestos abatement be included in the Construction and Demolition Waste Disposal Plan (required in Standard Construction Specification 01 35 44, Environmental Requirements, Section 1.3.C, Construction and Demolition Waste Disposal Plan) (EBMUD, 2014).

4 Impact Analysis

4.1 Methodology for Analysis

4.1.1 Construction Emissions

The analysis of potential air quality impacts uses the project-level analysis methodology identified by the 2017 BAAQMD Guidelines. Based on the 2017 BAAQMD Guidelines, construction emissions from the Project are quantified and compared to significance thresholds recommended by the BAAQMD and adopted by the City of Oakland. Both the CalEEMod version 2016.3.2 and the Sacramento Air Quality Management District RCEM Version 9.0 were used to estimate emissions from the Project. 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). Emissions from the construction areas (demolition of the existing PP and construction of the new PP) were estimated using CalEEMod, while construction emissions related to the linear portions of the Project (installation of the new suction and discharge pipelines) were estimated using RCEM.

The latest version of the CalEEMod model is based on the older version of the CARB 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 information estimated by EBMUD 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.[1] The number of workdays, equipment for each Project phase (Demolition, Pipeline Abandonment, New PP Construction, and New Pipelines), and trip estimates provided by EBMUD were also input into CalEEMod and RCEM to generate construction emissions estimates.

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

CalEEMod Land Use Inputs. Land uses were input into CalEEMod as follows:

- 2,250 square feet (sf) entered as "Industrial – General Light Industry" on 0.25-acres for the construction of the new PP, and
- 0 sf entered as "Industrial – General Light Industry" on 0.14-acres for the demolition of the existing Fontaine PP.

RCEM Project Type Inputs. The Project inputs for the RCEM model include:

- Other Linear Project Type 4; Non-roadway (i.e., pipeline)
- Predominate Soil/Site Type 1; Sand Gravel

For the purposes of this analysis, the following information, which was provided by EBMUD, regarding construction methods, schedule, and trip generation was used:

- **Construction Inputs.** The construction build-out scenario, including equipment list and schedule, were based on information provided by EBMUD for each of the construction phases (i.e., demolition of the existing PP, existing pipeline abandonment, construction of the new PP, and pipeline construction). CalEEMod computes annual emissions for construction that are based on the project type, size, and acreage. The model 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.
- **Construction Durations.** This air quality analysis is based on a conservative set of data and assumptions regarding the start of construction and project duration. A compressed schedule of 11 months over which the construction emissions would be produced was used for the analysis, incorporating overlapping schedules for installation of the new pipeline and construction of the new PP. This approach would result in higher concentrations of pollutants than anticipated, given the current Project schedule. The current Project durations include a 25-week (5.7 months) pipeline installation phase, a 51-week (11.8 months) new PP construction phase, and a 10-week (2.3 months) demolition phase, which would result in a construction duration of approximately 20 months if all work is not completed concurrently. The 11-month duration used in this analysis presents more conservative emissions results, because the same amount of emissions would occur over a shorter period and because there is a potential that the pipeline installation phase and new PP construction phase will occur concurrently. Emissions would be at a maximum at any one time.
- **Construction Traffic Emissions.** Construction would produce traffic in the form of worker trips, vendor trips, and material hauling trips. Traffic-related emissions from the Project are based on estimates of worker, vendor, and material hauling trips provided by EBMUD and on EMFAC2017 emissions

factors for 2025. EMFAC2017 provides aggregate emission rates in grams per mile for each vehicle type. The construction traffic vehicle mix for this analysis was based on CalEEMod default assumptions, where worker trips were assumed to be comprised of light-duty autos (EMFAC category LDA) and light duty trucks (EMFAC category LDT1 and LDT2). Vendor trips were comprised of delivery and large trucks (EMFAC category MHDT and HHDT) and haul trips, including cement trucks, were comprised of large trucks (EMFAC category HHDT). Travel distances were based on CalEEMod default lengths, which are approximately 10.8 miles for worker travel, approximately 7.3 miles for vendor trips, and approximately 20 miles for hauling. Because CalEEMod does not address cement or asphalt haul trips, these were treated as vendor travel distances (approximately 7.3 miles). Each trip was assumed to include an idle time of 5 minutes and emissions associated with vehicle starts were also included. EMFAC2017 emission rates from calendar year 2025 for Alameda County were used. Emissions rates for years beyond 2025 are less than those anticipated in 2025 because of anticipated future reduction in emissions from use of improved and more efficient future equipment and technology. Therefore, 2025 emissions represent a conservative estimate should the Project go into 2026 or beyond. Table 6 provides the traffic inputs that were combined with the EMFAC2017 emission factors to compute vehicle emissions for construction of the new site and demolition of the old one.

Table 6 Construction Traffic Data Used for EMFAC2017 Model Runs

CalEEMod Run/Land Uses and Construction Phase	Trips by Trip Type			Notes
	Total Worker[1]	Total Vendor[1]	Total Haul	
Vehicle mix[1]	71.1% LDA 6.9% LDT1 22.0% LDT2	34.5% MHDT 65.5% HHDT	100% HHDT	N/A
Trip Length (miles)[2]	10.8	7.3	20 soil 7.3 asphalt 7.3 concrete	5-minute truck idle time
Demolition	1,235	60	400	335 cubic yard (cy) material removed 120 cy backfill
Construction	4,004	730	190	600 cy soil export 200 cy soil import 96 cement truck trips 38 cy asphalt

[1] Based on 2025 EMFAC2017 vehicle fleet mix for Alameda County.
[2] Based on CalEEMod default lengths.
Table Notes:
LDA: Light-duty autos
LDT1 and LDT2: Light-duty trucks
MHDT: Delivery trucks
HHDT: Large trucks

Phases, trips, and equipment were provided by EBMUD. For entry into CalEEMod default construction phases, the provided phases were grouped and modeled as shown in Table 7.

Table 7 CalEEMod Construction Phase Grouping

CalEEMod Phase	EBMUD Phase
Demolition	Mobilization; Pipeline Abandonment; Existing PP Retaining Wall, Backfill, Site Restoration; New PP Sidewalk Removal
Site Preparation	New PP Site Preparation, Tree Removal, and Driveway Installation
Grading	Initial Excavation and Grading
Trenching	On-site PP Suction and Discharge Pipelines
Retaining Wall	New PP Retaining Wall
Building Construction	New PP Construction (Concrete Work)
	New PP Onsite Drainage
Architectural Coating	PP Construction (Other)
Paving	Final Grading, Backfill, and Paving
Landscaping/Fencing	Landscaping and Fence Installation
	Demobilization

RCEM estimates trip emissions using information input on soil and asphalt import/export volumes, miles per trip, number of employees, and the estimated trips per day. Worker commute trips are assumed to be comprised of light-duty trucks (EMFAC category LDT1 and

LDT2) and all other trips are assumed to be made by heavy-heavy duty diesel trucks (EMFAC category HHDT). Table 8 provides the traffic inputs used to compute emissions estimates for construction of the new pipeline using RCEM.

Table 8 Construction Traffic Data Used for RCEM Model Runs

Material Type	Material Hauling Quantity Input			Notes[1]
	Import (CY/Day)	Export (CY/Day	Haul Capacity (CY)	
Soil	115	143	20	Used RCEM Default Haul Capacity
Asphalt	33	0	5	Haul Capacity, provided by EBMUD
Trip Type	**Round Trips Per Day**		**Miles Per Round Trip**	**Notes**
Soil	11		20	Based on information provided
Asphalt	Default[2]		7.3	Based on material volume
Worker	19		20	19 workers

[1] Based on the higher of following: RCEM default haul capacity and haul capacity provided by EBMUD.
[2] Default value is 1 round trip per day.

4.1.2 Operational Emissions

Once operational, the Project would not include any new sources of 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. Therefore, operational emissions were not quantified for the Project.

4.1.3 Health Risk Assessment

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

The HRA is a quantitative analysis of project construction emissions, given the proximity of construction activity on the project site to sensitive receptors. The analysis evaluates whether the Project would cause health risks at nearby receptors that exceed the BAAQMD thresholds.

Acute risks were not evaluated as DPM exposure does not represent an acute health risk. The Project would not include any operational sources of TAC emissions, nor would it include any land uses considered sensitive to TACs emitted by surrounding land uses. Therefore, no further discussion of operational TAC impacts is included.

5 Project Impacts

5.1 Significance Criteria

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

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

5.2 Impact Discussion

Impact Air Quality-1: Potential to conflict with or obstruct implementation of the applicable air quality plan. (*Less than Significant*)

The 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 air quality plans prepared for the Bay Area (BAAQMD, 2017a).

The most recently adopted air quality plan applicable to the Project is the BAAQMD's 2017 Plan. The primary goals of the 2017 Plan are to attain air quality standards, reduce population exposure, protect public health in the Bay Area, reduce GHG emissions, and protect the climate. The 2017 Plan includes a range of control measures that 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: O_3 precursors, PM, air toxics, and/or GHGs. Other measures focus on a single type of pollutant, super GHGs such as methane and black carbon, or harmful fine particles that affect public health.

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 CAP. Table 9 below summarize the construction emissions from the Project. The emissions would not exceed any of the BAAQMD significance thresholds.

As indicated in Impact Air Quality-2 and Impact Air Quality-3 below, and the *Fontaine Pumping Plant Replacement Project Greenhouse Gas Technical Report* (Panorama Environmental and Illingworth & Rodkin, Inc., 2021), the Project's TAC and GHG emissions would also not exceed threshold levels (consistent with the BAAQMD Guidelines), indicating that project-related emissions would not have a significant impact on regional air quality or climate change, and would not pose significant health risks to the public (Panorama Environmental and Illingworth & Rodkin, Inc., 2021).

Regardless of whether 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 Section 3.4.1, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, would be incorporated into the Project, including EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements. Specifically, Section 3.3.B, Dust Control, includes requirements consistent with BAAQMD measures recommended for all projects, including the following:

- Watering of exposed surfaces two times per day (or as directed by the engineer)
- Covering all haul trucks entering/leaving the site
- Using wet power vacuum street sweepers on paved work areas and adjacent public roads
- Paving of roadways, driveways, and sidewalks as soon as possible
- Limiting all vehicle speeds to 15 mph or less.

EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements, Section 3.3.B, Dust Control, also includes standard practices consistent with BAAQMD's Construction Mitigation Measures Recommended for Projects with Construction Emissions above Thresholds, including the following:

- Suspending excavation, grading, and/or demolition when average wind speeds exceed 20 mph
- Installing wind breaks on the windward side(s) of actively disturbed areas of construction
- Limiting simultaneous excavation, grading, and ground-disturbing activities on the same area at any one time
- Planting of vegetative ground cover as soon as possible and watering until vegetation is appropriately established

- Washing of all trucks and equipment (including tires) prior to leaving the construction site
- Treating site accesses with 12 inches of compacted coarse rock to a distance of 100 feet from paved roads
- Installing sandbags or other erosion control measures to prevent silt run-off from sites with a slope greater than 1 percent

In addition, EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements, Section 3.4.B, Architectural Coatings, requires EBMUD to use architectural coatings compliant with appropriate VOC limits as established in the BAAQMD regulations to reduce VOCs (i.e., ROG) emissions during construction and maintenance.

All demolition activities of asbestos and lead containing structures would also be conducted in accordance with the requirements of EBMUD Standard Construction Specification 02 82 13, Asbestos Control Activities, and EBMUD Standard Construction Specification 02 83 13, Lead Hazard Control Activities, respectively, which would ensure compliance with the procedures required by the BAAQMD for the safe removal and disposal of asbestos- and lead-containing material.

Because the estimated construction emissions from the Project would be less than the recommended BAAQMD significance thresholds for construction and operation and EBMUD and its contractor would implement Standard Construction Specification 01 35 44, Environmental Requirements, Standard Construction Specification 02 82 13, Asbestos Control Activities, and EBMUD Standard Construction Specification 02 83 13, Lead Hazard Control Activities, and as part of the Project which require implementation of various construction-related dust and airborne asbestos and lead control procedures and compliance with VOC limits for architectural coatings, the Project would be consistent with the three BAAQMD criteria described above and would not conflict with or obstruct implementation of the 2017 CAP resulting in a less than significant impact.

Impact Air Quality-2: Potential result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or State ambient air quality standard. (*Less than Significant*)

Construction

Emissions from demolition of the existing PP and construction of the new PP were estimated using CalEEMod, while construction emissions related to the installation of the new suction and discharge pipelines were estimated using RCEM. Average daily emissions were computed by summing the emissions from each phase and dividing the total construction emissions by the number of total workdays for the 11-month schedule conservatively used for this analysis. Table 9 provides the average daily construction emissions (unmitigated) of ROG, NO_X, PM_{10} exhaust, and $PM_{2.5}$ exhaust estimated during construction of the Project. Model output from CalEEMod and RCEM are included as Appendix B and EMFAC2017 vehicle emissions modeling outputs are included in Appendix C.

Table 9 Construction Period Emissions

Scenario	ROG (tons)	NOx (tons)	PM_{10} Exhaust (tons)	$PM_{2.5}$ Exhaust (tons)
New PP Construction	0.105	0.841	0.034	0.032
New PP Construction Trips	0.004	0.029	0.003	0.001
New Pipeline Construction with Trips	0.021	0.198	0.010	0.008
Existing PP Demolition	0.019	0.164	0.007	0.007
Demolition Trips	0.001	0.028	0.002	0.001
Total construction emissions (tons)	0.15 tons	1.26 tons	0.06 tons	0.05 tons
Average daily emissions (pounds)[2]	1.8 lbs/day	15.3 lbs/day	0.7 lbs/day	0.6 lbs/day
BAAQMD Thresholds (pounds per day)	*54 lbs/day*	*54 lbs/day*	*82 lbs/day*	*54 lbs/day*
Exceed Threshold?	No	No	No	No

[2]Analysis uses a more conservative condensed project duration of 11 months. Pounds per day would be less if dispersed over a longer construction duration.

As indicated in Table 9, predicted construction-period emissions would not exceed the BAAQMD significance thresholds. As detailed in Section 3.4.1, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, would be incorporated into the Project, which would further reduce construction-related emissions. EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, Section 3.4.A, Air Quality and Emissions Control, would be implemented as part of the Project, which requires the project contractor to implement the following requirements:

- Use of line power instead of diesel generators at all construction sites where line power is available.
- Compression-ignition engines must 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.
- Portable pumps, compressors, generators, etc. must be electrically powered unless such equipment is not practical, feasible, or available.
- All portable engines and equipment units used as part of construction must be properly registered with CARB or otherwise permitted by BAAQMD.
- Idling times must 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 ATCM Title 13, Section 2485 of California Code of Regulations.
- All construction equipment, diesel trucks, and generators must be equipped with BACT for emission reductions of NOx and PM. Low-emission tune-ups must be performed on all construction equipment, particularly haul trucks and earthwork equipment.

Additionally, Section 3.4.B, Architectural Coatings, of EBMUD Standard Construction Specification 01 35 44, Environmental Requirements requires the project contractor to comply with appropriate limits as established by BAAQMD's Regulation 8, Rule 3.

Because the Project is consistent with the 2017 Plan as discussed under Impact Air Quality-1 and because compliance with existing regulations and programs are mandatory and EBMUD and its contractor would implement EBMUD Standard Construction Specifications 01 35 44, Environmental Requirements as part of the Project, the Project would not result in a cumulatively considerable net increase of any criteria pollutant and impacts from construction would be less than significant.

Operation

As discussed in Section 4.1.2, the new PP and new pipelines would be operated in a similar manner as the existing PP and pipelines. Because the Project would not result in a change to operational emissions, the impact would be less than significant.

Impact Air Quality-3: Potential to expose sensitive receptors to substantial pollutant concentrations. (*Less than Significant*)

Construction

Overview

Although it was concluded under Impact Air Quality-1 and Impact Air Quality-2 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 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 OEHHA and CARB recommended methods for conducting health risk assessments. BAAQMD thresholds for cancer risk, $PM_{2.5}$ concentration, and 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 $PM_{2.5}$.

Construction Period Emissions

The CalEEMod model provided total annual PM_{10} exhaust emissions (assumed to be DPM) for the off-road construction equipment and EMFAC2017 was used to estimate exhaust emissions from on-road vehicles. Total DPM emissions from the construction site of the new PP was estimated to be 0.002 tons (3.9 pounds), the total DPM emissions from the installation of the new pipeline was estimated to be less than 0.002 tons (3.4 pounds), and the demolition site would generate less than 0.001 tons (1.3 pounds) of DPM emissions. It was assumed emissions from on-road vehicles traveling at or near the site would occur at the construction site. The on-road emissions on-site are a result of haul truck travel during grading and excavation activities, worker travel, and vendor deliveries during construction. An on-site trip length of a mile was

used to represent vehicle travel within the Project work areas along the pipeline installation alignment, while an on-site trip length of a half mile was used to represent vehicle travel within the Project work areas at the new PP site and demolition site. Fugitive $PM_{2.5}$ dust emissions from the construction of the new PP were estimated to be 0.004 tons (8.8 pounds) using the same methods and assumptions used to estimate site DPM emissions. Fugitive $PM_{2.5}$ emissions from the new pipeline construction site and demolition site were estimated to be 0.007 tons (13.3 pounds) and less than 0.001 tons (0.8 pounds) respectively.

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 site locations. This conservatively results in an over estimation of the potential health impacts near the demolition site.

Dispersion Modeling

The U.S. EPA AERMOD dispersion model was used to predict DPM and $PM_{2.5}$ concentrations at sensitive receptors (i.e., residents, school children, elderly) in the vicinity of the Project construction areas. The AERMOD dispersion model is a BAAQMD-recommended model for use in modeling ambient impacts of these types of emission activities for CEQA projects (BAAQMD, 2012). The modeling utilized area sources to represent the on-site construction emissions of the new PP and the demolition of the existing PP. Line-area sources were created to represent construction emissions from the new pipelines (suction and discharge). An area source was created for each pollutant modeled at each site (i.e., one for exhaust emissions and one for fugitive dust emissions, or two area sources per site). To represent the construction equipment exhaust emissions, an emission release height of approximately 19.7 feet (6 meters) was used, based technical guidance provided by CARB (CARB, 2007). The elevated source height reflects the height of the equipment exhaust pipes plus an additional distance for the height of the exhaust plume above the exhaust pipes to account for plume rise of the exhaust gases. For modeling fugitive $PM_{2.5}$ emissions, a near-ground level release height of approximately 6.6 feet (2 meters) was used as the average release height across the construction site. Emissions from the construction equipment and on-site vehicle travel were distributed throughout the modeled area sources. Construction emissions were conservatively modeled as occurring daily between 7:00 a.m. to 4:00 p.m. when most of the site activity would occur in order to analyze the highest concentration and potential impacts.

The modeling used a five-year data set (2013-2017) of hourly meteorological data from Oakland Airport[2] that was prepared for use with the AERMOD model by BAAQMD. Annual DPM and $PM_{2.5}$ concentrations from construction activities during the construction and demolition

[2] This meteorological data is the closest available BAAQMD dataset to the project site.

periods were calculated using the model. DPM and $PM_{2.5}$ concentrations were calculated at nearby sensitive receptors. Receptor heights of approximately 5 feet (1.5 meters), 14.9 feet (4.55 meters), and 24.9 feet (7.6 meter) were used to represent the breathing heights on the ground, second, and third floors at the nearby single-family and multi-family residences, as appropriate.

Project Construction Community Risk Impacts

Overview

The maximum modeled annual DPM and $PM_{2.5}$ concentrations, which includes both the DPM and fugitive $PM_{2.5}$ concentrations, were identified at nearby sensitive receptors for the new PP and new pipeline construction, and existing PP demolition (as shown in Figure 5 and Figure 6) to find the MEIs. Using the maximum annual modeled DPM concentrations, the maximum increased cancer risks were calculated using BAAQMD recommended methods and exposure parameters described in Appendix A. HI and maximum annual $PM_{2.5}$ concentrations were also calculated and identified. Appendix D includes the emission calculations used for the construction area source modeling and the cancer risk calculations.

New Pumping Plant and New Pipelines

Results of the health risk assessment for construction and demolition activities indicated that the MEIs 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 (discharge pipeline site, shown in Figure 5). Table 10 summarizes the cancer risks, $PM_{2.5}$ concentrations, and HI for project-related construction activities affecting the off-site residential MEIs.

Figure 5 New Pumping Plant and New Pipelines Construction Site, Locations of Off-Site Sensitive Receptors, and Location of MEIs

Table 10 Construction Risk Impacts at the Off-site Residential MEIs – New Pumping Plant and New Pipeline

Source	Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
New PP and New Pipeline Construction (without Standard Construction Specification 01 35 44 measures applied)	86.9 (infant)	1.41	0.19
New PP and New Pipeline Construction (with Standard Construction Specification 01 35 44 measures applied)	5.4 (infant)	0.17	0.01
BAAQMD Single-Source Threshold	***>10.0***	***>0.3***	***>1.0***
*Exceed Threshold?**	*No*	*No*	*No*

* Impacts account for the emission reductions that would accompany EBMUD's Standard Construction Specification 01 35 44 (Environmental Requirements), Section 3.4.A, Air Quality and Emissions Control.

The increased cancer risks and maximum $PM_{2.5}$ concentration from construction would exceed the BAAQMD single-source thresholds of greater than 10.0 per million for cancer risk and greater than 0.3 $\mu g/m^3$ for annual $PM_{2.5}$ concentration. As detailed in Section 3.4.1, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, would be incorporated into the Project, including Standard Construction Specification 01 35 44, Environmental Requirements. Section 3.4.A, Air Quality and Emissions Control, of Standard Construction Specification 01 35 44, Environmental Requirements, requires the implementation of various air quality and emissions controls, including, but not limited to, requiring that all construction equipment, diesel trucks, and generates be equipped with 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, EPA's most stringent standards for off-highway diesel engines, as the BACT for all construction equipment. As indicated in Table 10, with implementation of requirements specified in Standard Construction Specification 01 35 44, Environmental Requirements, the Project would not exceed the BAAQMD single-source thresholds of greater than 10.0 per million for cancer risk and greater than 0.3 $\mu g/m^3$ for annual $PM_{2.5}$ concentration. The non-cancer hazards from construction activities would be below the single-source significance threshold of 1.0. Because Standard Construction Specification 01 35 44, Environmental Requirements, has been incorporated into the Project and includes implementation of various emission controls such as use of BACT-equipped equipment and trucks, the impacts to sensitive receptors related to construction emissions of the new PP and new pipelines would be less than significant.

Existing Pumping Plant

The MEIs for the demolition of the existing PP site are located at a single family home adjacent to the eastern boundary of the site (shown in Figure 6). Table 11 summarizes the cancer risks,

$PM_{2.5}$ concentrations, and health hazard indexes for project-related construction activities affecting the off-site residential MEIs.

Table 11 Construction Risk Impacts at the Off-site Residential MEIs - Demolition

Source	Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
Site Demolition (No EBMUD Standard Construction Specifications Applied)	8.9 (infant)	0.39	0.06
Site Demolition (with Standard Construction Specification 01 35 44 measures applied)	2.2 (infant)	0.12	0.01
BAAQMD Single-Source Threshold	***>10.0***	***>0.3***	***>1.0***
*Exceed Threshold?**	*No*	*No*	*No*

* Impacts account for the emission reductions that would accompany EBMUD's Standard Construction Specification 01 35 44 (Environmental Requirements), Section 3.4.A, Air Quality and Emissions Control.

The increased maximum annual $PM_{2.5}$ concentration from demolition of the existing site would exceed the BAAQMD single-source thresholds of greater than 0.3 $\mu g/m^3$ for annual $PM_{2.5}$ concentration. As detailed in Section 3.4.1, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, would be incorporated into the Project, including Standard Construction Specification 01 35 44, Environmental Requirements. Section 3.4.A, Air Quality and Emissions Control, of Standard Construction Specification 01 35 44, Environmental Requirements, requires that all construction equipment, diesel trucks, and generators be equipped with BACT for emission reductions of NOx and PM, the impacts related to demolition of the existing PP would be less than significant. 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, EPA's most stringent standards for off-highway diesel engines, as the BACT for all construction equipment. As indicated in Table 11, with implementation of requirements specified in Standard Construction Specification 01 35 44, Environmental Requirements, 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. The thresholds of greater than 10.0 per million for cancer risk and 1.0 for HI from construction activities would not be exceeded by demolition of the existing PP, with or without implementation of Standard Construction Specification 01 35 44, Environmental Requirements. Because Standard Construction Specification 01 35 44, Environmental Requirements, has been incorporated into the Project and includes implementation of various emission controls, the impacts to sensitive receptors related to demolition of the existing PP would be less than significant.

Figure 6 Existing Pumping Plant Demolition Site, Locations of Off-Site Sensitive Receptors, and Location of MEI

Existing Pipeline Abandonment

Given the short-term and temporary nature of pipeline abandonment activities (approximately 5 days at each existing pipeline abandonment disconnection site), the health risk impacts associated with these activities were not quantitatively assessed. The emissions from the abandonment activities were included in the health risk assessment for the demolition of the existing PP. As identified above, cancer risk and HI are below BAAQMD single-source thresholds for the demolition site MEIs, while annual $PM_{2.5}$ concentrations near the demolition site would exceed the BAAQMD single-source thresholds. Activities at the demolition site would require a longer duration and have a greater intensity of DPM and $PM_{2.5}$ emissions, resulting in higher impacts than would be experienced near the existing pipeline abandonment disconnection sites identified in Figure 2. As detailed in Section 3.4.1, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, would be incorporated into the Project, including Standard Construction Specification 01 35 44, Environmental Requirements, which includes implementation of various emission controls. Therefore, the impacts to sensitive receptors near the existing pipeline abandonment disconnection sites would be significantly less than those at the demolition site MEI and, thus, less than significant.

Operation

Operation of the new PP and associated pipeline would not be a source of significant TAC pollutant emissions. No fuel combustion equipment (i.e., diesel generators or pumps) 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), would be less than those generated by a single residence. Furthermore, emissions associated with maintenance traffic would be similar to existing levels with no substantial increase in direct operational emissions resulting from the project. EBMUD's maintenance vehicles would comply with the latest vehicle emission standards established by CARB. Therefore, operation of the Project would not expose sensitive receptors to substantial pollutant concentrations, and the impact would be less than significant.

Impact Air Quality-4: Potential to result in other emissions (such as those leading to odors) adversely affecting a substantial number of people. (*Less than Significant*)

Construction

The Project would generate localized emissions of diesel exhaust during construction equipment operation and truck activity. These emissions may be noticeable from time to time by adjacent receptors. However, exhaust emissions and the odors they create would be highly localized and largely confined to the areas directly adjacent to the construction. The odors generated by construction are not likely to adversely affect people off-site or result in odor complaints. Because construction of the Project would not include any sources of significant odors, the impacts to nearby receptors would be less than significant.

Operation

Operation of the new PP and new pipelines would not generate emissions that are likely to adversely affect the public off site or result in confirmed odor complaints. Because the new PP and new pipelines would not include any new sources of significant odors, the impact would be less than significant.

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Appendix A Health Risk Calculation Methodology

Health Risk Calculation Methodology

A health risk assessment (HRA) for exposure to Toxic Air Contaminates (TACs) requires the application of a risk characterization model to the results from the air dispersion model to estimate potential health risk at each sensitive receptor location. The State of California Office of Environmental Health Hazard Assessment (OEHHA) and California Air Resources Board (CARB) develop recommended methods for conducting health risk assessments. The most recent OEHHA risk assessment guidelines were published in February of 2015.[29] These guidelines incorporate substantial changes designed to provide for enhanced protection of children, as required by State law, compared to previous published risk assessment guidelines. CARB has provided additional guidance on implementing OEHHA's recommended methods.[30] This HRA used the 2015 OEHHA risk assessment guidelines and CARB guidance. The BAAQMD has adopted recommended procedures for applying the newest OEHHA guidelines as part of Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants.[31] Exposure parameters from the OEHHA guidelines and the recent BAAQMD HRA Guidelines were used in this evaluation.

Cancer Risk

Potential increased cancer risk from inhalation of TACs is calculated based on the TAC concentration over the period of exposure, inhalation dose, the TAC cancer potency factor, and an age sensitivity factor to reflect the greater sensitivity of infants and children to cancer causing TACs. The inhalation dose depends on a person's breathing rate, exposure time and frequency and duration of exposure. These parameters vary depending on the age, or age range, of the persons being exposed and whether the exposure is considered to occur at a residential location or other sensitive receptor location.

The current OEHHA guidance recommends that cancer risk be calculated by age groups to account for different breathing rates and sensitivity to TACs. Specifically, they recommend evaluating risks for the third trimester of pregnancy to age zero, ages zero to less than two (infant exposure), ages two to less than 16 (child exposure), and ages 16 to 70 (adult exposure). Age sensitivity factors (ASFs) associated with the different types of exposure are an ASF of 10 for the third trimester and infant exposures, an ASF of 3 for a child exposure, and an ASF of 1 for an adult exposure. Also associated with each exposure type are different breathing rates, expressed as liters per kilogram of body weight per day (L/kg-day) or liters per kilogram of body weight per 8-hour period for the case of worker or school child exposures. As recommended by the BAAQMD for residential exposures, 95th percentile breathing rates are used for the third trimester and infant exposures, and 80th percentile breathing rates for child and adult exposures. For children at schools and daycare facilities, BAAQMD recommends using the 95th percentile 8-hour breathing rates. Additionally, CARB and the BAAQMD recommend the use of a residential exposure duration of 30 years for sources with long-term emissions (e.g., roadways). For workers, assumed to be adults,

[29] OEHHA, 2015. *Air Toxics Hot Spots Program Risk Assessment Guidelines, The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. Office of Environmental Health Hazard Assessment. February.
[30] CARB, 2015. *Risk Management Guidance for Stationary Sources of Air Toxics*. July 23.
[31] BAAQMD, 2016. *BAAQMD Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines*. December 2016.

a 25-year exposure period is recommended by the BAAQMD. For school children a 9-year exposure period is recommended by the BAAQMD.

Under previous OEHHA and BAAQMD HRA guidance, residential receptors are assumed to be at their home 24 hours a day, or 100 percent of the time. In the 2015 Risk Assessment Guidance, OEHHA includes adjustments to exposure duration to account for the fraction of time at home (FAH), which can be less than 100 percent of the time, based on updated population and activity statistics. The FAH factors are age-specific and are: 0.85 for third trimester of pregnancy to less than 2 years old, 0.72 for ages 2 to less than 16 years, and 0.73 for ages 16 to 70 years. Use of the FAH factors is allowed by the BAAQMD if there are no schools in the project vicinity have a cancer risk of one in a million or greater assuming 100 percent exposure (FAH = 1.0).

Functionally, cancer risk is calculated using the following parameters and formulas:

Cancer Risk (per million) = $CPF \times Inhalation\ Dose \times ASF \times ED/AT \times FAH \times 10^6$

Where:

CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = $C_{air} \times DBR^* \times A \times (EF/365) \times 10^{-6}$

Where:

C_{air} = concentration in air $(\mu g/m^3)$
DBR = daily breathing rate (L/kg body weight-day)
8HrBR = 8-hour breathing rate (L/kg body weight-8 hours)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

* An 8-hour breathing rate (8HrBR) is used for worker and school child exposures.

The health risk parameters used in this evaluation are summarized as follows:

Parameter	*Exposure Type* →	Infant		Child	Adult
	Age Range →	3rd Trimester	0<2	2 < 16	16 - 30
DPM Cancer Potency Factor $(mg/kg\text{-}day)^{-1}$		1.10E+00	1.10E+00	1.10E+00	1.10E+00
Daily Breathing Rate (L/kg-day) 80th Percentile Rate		273	758	572	261
Daily Breathing Rate (L/kg-day) 95th Percentile Rate		361	1,090	745	335
8-hour Breathing Rate (L/kg-8 hours) 95th Percentile Rate		-	1,200	520	240
Inhalation Absorption Factor		1	1	1	1
Averaging Time (years)		70	70	70	70
Exposure Duration (years)		0.25	2	14	14*
Exposure Frequency (days/year)		350	350	350	350*
Age Sensitivity Factor		10	10	3	1
Fraction of Time at Home (FAH)		0.85-1.0	0.85-1.0	0.72-1.0	0.73*

Non-Cancer Hazards

Non-cancer health risk is usually determined by comparing the predicted level of exposure to a chemical to the level of exposure that is not expected to cause any adverse effects (reference exposure level), even to the most susceptible people. Potential non-cancer health hazards from TAC exposure are expressed in terms of a hazard index (HI), which is the ratio of the TAC concentration to a reference exposure level (REL). OEHHA has defined acceptable concentration levels for contaminants that pose non-cancer health hazards. TAC concentrations below the REL are not expected to cause adverse health impacts, even for sensitive individuals. The total HI is calculated as the sum of the HIs for each TAC evaluated and the total HI is compared to the BAAQMD significance thresholds to determine whether a significant non-cancer health impact from a project would occur.

Typically, for residential projects located near roadways with substantial TAC emissions, the primary TAC of concern with non-cancer health effects is diesel particulate matter (DPM). For DPM, the chronic inhalation REL is 5 micrograms per cubic meter ($\mu g/m^3$).

Annual $PM_{2.5}$ Concentrations

While not a TAC, fine particulate matter ($PM_{2.5}$) has been identified by the BAAQMD as a pollutant with potential non-cancer health effects that should be included when evaluating potential community health impacts under the California Environmental Quality Act (CEQA). The thresholds of significance for $PM_{2.5}$ (project level and cumulative) are in terms of an increase in the annual average concentration. When considering $PM_{2.5}$ impacts, the contribution from all sources of $PM_{2.5}$ emissions should be included. For projects with potential impacts from nearby local roadways, the $PM_{2.5}$ impacts should include those from vehicle exhaust emissions, $PM_{2.5}$ generated from vehicle tire and brake wear, and fugitive emissions from re-suspended dust on the roads.

Appendix B CalEEMod and RCEM Model Outputs

New Fontaine PP Facility - Alameda County, Annual

New Fontaine PP Facility - No Controls

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	2.25	1000sqft	0.25	2,250.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2025
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	210	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Per latest PG&E report

Land Use - Per New Fontaine PP Data Request

Construction Phase - Per Construction Data Request New FontainePP. Assume trenching = grading. Assume Interior and extior are concurent. Assume landscaping after paving. Assume retaining wall will be built after site grading

Off-road Equipment - Per Construction data Sheet New FontainePP

Off-road Equipment - Per Construction data Sheet New FontainePP

Off-road Equipment - Per Construction data Sheet New FontainePP

Off-road Equipment - Per Construction data Sheet New FontainePP

Off-road Equipment - Per Construction data Sheet New FontainePP

Off-road Equipment - Per Construction data Sheet New FontainePP

Off-road Equipment - Per Construction data Sheet New FontainePP

Off-road Equipment - Per Construction data Sheet New FontainePP

Off-road Equipment - Assume Trenching Phase that parallels Grading Phase

Trips and VMT - Per Construction data Sheet New FontainePP. 5 CY per asphalt delivery

Grading - Per Construction data Sheet New FontainePP

Vehicle Trips - Assume 2 trips every other week

Vehicle Emission Factors - EMFAC2017 2025 Alameda Co

Vehicle Emission Factors -

Vehicle Emission Factors -

Energy Use -

Water And Wastewater - WWTF

Construction Off-road Equipment Mitigation - T3L3 Mitigation, Basic Fug Dust BMPS

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
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tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
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tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	5.00	81.00

tblConstructionPhase	NumDays	100.00	111.00
tblConstructionPhase	NumDays	10.00	2.00
tblConstructionPhase	NumDays	2.00	10.00
tblConstructionPhase	NumDays	5.00	10.00
tblConstructionPhase	NumDays	1.00	3.00
tblConstructionPhase	NumDays	1.00	10.00
tblConstructionPhase	NumDays	1.00	5.00
tblFleetMix	HHD	0.05	0.05
tblFleetMix	LDA	0.56	0.56
tblFleetMix	LDT1	0.04	0.05
tblFleetMix	LDT2	0.19	0.17
tblFleetMix	LHD1	0.01	0.02
tblFleetMix	LHD2	5.1320e-003	5.2490e-003
tblFleetMix	MCY	5.4270e-003	5.3360e-003
tblFleetMix	MDV	0.11	0.11
tblFleetMix	MH	6.7900e-004	6.7200e-004
tblFleetMix	MHD	0.03	0.02
tblFleetMix	OBUS	2.2300e-003	1.2980e-003
tblFleetMix	UBUS	2.2770e-003	1.7880e-003
tblGrading	AcresOfGrading	5.00	0.00
tblGrading	AcresOfGrading	1.50	0.50
tblGrading	MaterialExported	0.00	600.00
tblGrading	MaterialImported	0.00	200.00
tblLandUse	LotAcreage	0.05	0.25
tblOffRoadEquipment	HorsePower	158.00	187.00
tblOffRoadEquipment	HorsePower	89.00	187.00
tblOffRoadEquipment	LoadFactor	0.38	0.41
tblOffRoadEquipment	LoadFactor	0.20	0.41
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	4.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	210
tblTripsAndVMT	HaulingTripLength	20.00	7.30
tblTripsAndVMT	HaulingTripLength	20.00	7.30
tblTripsAndVMT	HaulingTripNumber	79.00	0.00
tblTripsAndVMT	WorkerTripNumber	10.00	0.00
tblTripsAndVMT	WorkerTripNumber	8.00	0.00
tblTripsAndVMT	WorkerTripNumber	13.00	0.00
tblTripsAndVMT	WorkerTripNumber	13.00	0.00
tblTripsAndVMT	WorkerTripNumber	8.00	0.00
tblTripsAndVMT	WorkerTripNumber	1.00	0.00
tblTripsAndVMT	WorkerTripNumber	13.00	0.00
tblTripsAndVMT	WorkerTripNumber	8.00	0.00
tblVehicleEF	HHD	0.60	0.02
tblVehicleEF	HHD	0.04	0.03
tblVehicleEF	HHD	0.07	0.00
tblVehicleEF	HHD	1.62	6.60

tblVehicleEF	HHD	0.78	0.35
tblVehicleEF	HHD	1.95	3.9490e-003
tblVehicleEF	HHD	4,618.39	1,061.58
tblVehicleEF	HHD	1,529.11	1,349.20
tblVehicleEF	HHD	6.17	0.04
tblVehicleEF	HHD	13.88	5.42
tblVehicleEF	HHD	1.94	2.58
tblVehicleEF	HHD	20.09	2.28
tblVehicleEF	HHD	5.2700e-003	2.2870e-003
tblVehicleEF	HHD	0.06	0.06
tblVehicleEF	HHD	0.04	0.04
tblVehicleEF	HHD	6.0310e-003	0.03
tblVehicleEF	HHD	5.1000e-005	0.00
tblVehicleEF	HHD	5.0420e-003	2.1880e-003
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.9010e-003	8.9280e-003
tblVehicleEF	HHD	5.7700e-003	0.02
tblVehicleEF	HHD	4.7000e-005	0.00
tblVehicleEF	HHD	4.5000e-005	1.0000e-006
tblVehicleEF	HHD	2.5700e-003	6.5000e-005
tblVehicleEF	HHD	0.42	0.45
tblVehicleEF	HHD	3.2000e-005	1.0000e-006
tblVehicleEF	HHD	0.09	0.02
tblVehicleEF	HHD	2.0000e-004	3.3100e-004
tblVehicleEF	HHD	0.04	1.0000e-006
tblVehicleEF	HHD	0.04	9.9360e-003
tblVehicleEF	HHD	0.01	0.01
tblVehicleEF	HHD	9.4000e-005	0.00
tblVehicleEF	HHD	4.5000e-005	1.0000e-006
tblVehicleEF	HHD	2.5700e-003	6.5000e-005

tblVehicleEF	HHD	0.49	0.51
tblVehicleEF	HHD	3.2000e-005	1.0000e-006
tblVehicleEF	HHD	0.14	0.06
tblVehicleEF	HHD	2.0000e-004	3.3100e-004
tblVehicleEF	HHD	0.05	1.0000e-006
tblVehicleEF	LDA	3.2030e-003	1.6450e-003
tblVehicleEF	LDA	4.3860e-003	0.04
tblVehicleEF	LDA	0.46	0.50
tblVehicleEF	LDA	1.03	2.09
tblVehicleEF	LDA	224.31	238.80
tblVehicleEF	LDA	51.88	50.68
tblVehicleEF	LDA	0.04	0.03
tblVehicleEF	LDA	0.06	0.17
tblVehicleEF	LDA	1.6760e-003	1.3210e-003
tblVehicleEF	LDA	2.2200e-003	1.6380e-003
tblVehicleEF	LDA	1.5440e-003	1.2170e-003
tblVehicleEF	LDA	2.0410e-003	1.5070e-003
tblVehicleEF	LDA	0.03	0.03
tblVehicleEF	LDA	0.09	0.09
tblVehicleEF	LDA	0.03	0.03
tblVehicleEF	LDA	8.0660e-003	6.1430e-003
tblVehicleEF	LDA	0.03	0.20
tblVehicleEF	LDA	0.06	0.19
tblVehicleEF	LDA	2.2450e-003	9.3000e-005
tblVehicleEF	LDA	5.3600e-004	0.00
tblVehicleEF	LDA	0.03	0.03
tblVehicleEF	LDA	0.09	0.09
tblVehicleEF	LDA	0.03	0.03
tblVehicleEF	LDA	0.01	8.9200e-003
tblVehicleEF	LDA	0.03	0.20

tblVehicleEF	LDA	0.06	0.21
tblVehicleEF	LDT1	6.4470e-003	3.1950e-003
tblVehicleEF	LDT1	0.01	0.06
tblVehicleEF	LDT1	0.82	0.76
tblVehicleEF	LDT1	2.17	2.27
tblVehicleEF	LDT1	278.57	286.72
tblVehicleEF	LDT1	64.70	61.42
tblVehicleEF	LDT1	0.08	0.06
tblVehicleEF	LDT1	0.12	0.22
tblVehicleEF	LDT1	2.1340e-003	1.6030e-003
tblVehicleEF	LDT1	2.8790e-003	2.0660e-003
tblVehicleEF	LDT1	1.9640e-003	1.4750e-003
tblVehicleEF	LDT1	2.6480e-003	1.8990e-003
tblVehicleEF	LDT1	0.07	0.07
tblVehicleEF	LDT1	0.21	0.15
tblVehicleEF	LDT1	0.06	0.06
tblVehicleEF	LDT1	0.02	0.01
tblVehicleEF	LDT1	0.13	0.57
tblVehicleEF	LDT1	0.14	0.28
tblVehicleEF	LDT1	2.7940e-003	2.4920e-003
tblVehicleEF	LDT1	6.8400e-004	0.00
tblVehicleEF	LDT1	0.07	0.07
tblVehicleEF	LDT1	0.21	0.15
tblVehicleEF	LDT1	0.06	0.06
tblVehicleEF	LDT1	0.02	0.02
tblVehicleEF	LDT1	0.13	0.57
tblVehicleEF	LDT1	0.15	0.30
tblVehicleEF	LDT2	4.2720e-003	2.6200e-003
tblVehicleEF	LDT2	5.5400e-003	0.06
tblVehicleEF	LDT2	0.59	0.66

tblVehicleEF	LDT2	1.29	2.69
tblVehicleEF	LDT2	313.43	303.78
tblVehicleEF	LDT2	72.23	65.62
tblVehicleEF	LDT2	0.06	0.05
tblVehicleEF	LDT2	0.09	0.24
tblVehicleEF	LDT2	1.7410e-003	1.3590e-003
tblVehicleEF	LDT2	2.3620e-003	1.6760e-003
tblVehicleEF	LDT2	1.6010e-003	1.2510e-003
tblVehicleEF	LDT2	2.1720e-003	1.5410e-003
tblVehicleEF	LDT2	0.03	0.05
tblVehicleEF	LDT2	0.10	0.12
tblVehicleEF	LDT2	0.04	0.06
tblVehicleEF	LDT2	0.01	0.01
tblVehicleEF	LDT2	0.06	0.42
tblVehicleEF	LDT2	0.07	0.27
tblVehicleEF	LDT2	3.1380e-003	9.7420e-003
tblVehicleEF	LDT2	7.4400e-004	6.3000e-005
tblVehicleEF	LDT2	0.03	0.05
tblVehicleEF	LDT2	0.10	0.12
tblVehicleEF	LDT2	0.04	0.06
tblVehicleEF	LDT2	0.02	0.01
tblVehicleEF	LDT2	0.06	0.42
tblVehicleEF	LDT2	0.08	0.30
tblVehicleEF	LHD1	5.0170e-003	5.0360e-003
tblVehicleEF	LHD1	0.02	7.5510e-003
tblVehicleEF	LHD1	0.02	0.01
tblVehicleEF	LHD1	0.14	0.19
tblVehicleEF	LHD1	0.93	0.69
tblVehicleEF	LHD1	2.33	1.05
tblVehicleEF	LHD1	9.00	8.78

tblVehicleEF	LHD1	679.94	776.00
tblVehicleEF	LHD1	31.29	11.65
tblVehicleEF	LHD1	0.07	0.05
tblVehicleEF	LHD1	1.06	0.60
tblVehicleEF	LHD1	0.96	0.31
tblVehicleEF	LHD1	8.6200e-004	8.2600e-004
tblVehicleEF	LHD1	0.01	9.7480e-003
tblVehicleEF	LHD1	0.01	9.2900e-003
tblVehicleEF	LHD1	8.4600e-004	2.4100e-004
tblVehicleEF	LHD1	8.2500e-004	7.9000e-004
tblVehicleEF	LHD1	2.5370e-003	2.4370e-003
tblVehicleEF	LHD1	0.01	8.8410e-003
tblVehicleEF	LHD1	7.7800e-004	2.2200e-004
tblVehicleEF	LHD1	2.2020e-003	1.6730e-003
tblVehicleEF	LHD1	0.10	0.07
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	1.2910e-003	9.7800e-004
tblVehicleEF	LHD1	0.12	0.09
tblVehicleEF	LHD1	0.30	0.51
tblVehicleEF	LHD1	0.23	0.07
tblVehicleEF	LHD1	9.0000e-005	8.5000e-005
tblVehicleEF	LHD1	6.6680e-003	7.5790e-003
tblVehicleEF	LHD1	3.5700e-004	1.1500e-004
tblVehicleEF	LHD1	2.2020e-003	1.6730e-003
tblVehicleEF	LHD1	0.10	0.07
tblVehicleEF	LHD1	0.02	0.03
tblVehicleEF	LHD1	1.2910e-003	9.7800e-004
tblVehicleEF	LHD1	0.14	0.10
tblVehicleEF	LHD1	0.30	0.51
tblVehicleEF	LHD1	0.25	0.07

tblVehicleEF	LHD2	3.2700e-003	3.3950e-003
tblVehicleEF	LHD2	6.9360e-003	6.4120e-003
tblVehicleEF	LHD2	6.0080e-003	8.4420e-003
tblVehicleEF	LHD2	0.12	0.14
tblVehicleEF	LHD2	0.53	0.57
tblVehicleEF	LHD2	1.12	0.65
tblVehicleEF	LHD2	13.77	13.43
tblVehicleEF	LHD2	701.55	764.99
tblVehicleEF	LHD2	24.72	8.49
tblVehicleEF	LHD2	0.09	0.08
tblVehicleEF	LHD2	0.57	0.68
tblVehicleEF	LHD2	0.43	0.20
tblVehicleEF	LHD2	1.1530e-003	1.3420e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	3.9000e-004	1.3000e-004
tblVehicleEF	LHD2	1.1030e-003	1.2830e-003
tblVehicleEF	LHD2	2.6840e-003	2.6600e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	3.5800e-004	1.2000e-004
tblVehicleEF	LHD2	7.0500e-004	9.4800e-004
tblVehicleEF	LHD2	0.03	0.04
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	4.4100e-004	5.7200e-004
tblVehicleEF	LHD2	0.10	0.10
tblVehicleEF	LHD2	0.06	0.26
tblVehicleEF	LHD2	0.08	0.04
tblVehicleEF	LHD2	1.3400e-004	1.2900e-004
tblVehicleEF	LHD2	6.8250e-003	7.4000e-003
tblVehicleEF	LHD2	2.6700e-004	8.4000e-005

tblVehicleEF	LHD2	7.0500e-004	9.4800e-004
tblVehicleEF	LHD2	0.03	0.04
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	4.4100e-004	5.7200e-004
tblVehicleEF	LHD2	0.12	0.12
tblVehicleEF	LHD2	0.06	0.26
tblVehicleEF	LHD2	0.09	0.05
tblVehicleEF	MCY	0.47	0.34
tblVehicleEF	MCY	0.16	0.26
tblVehicleEF	MCY	19.41	19.52
tblVehicleEF	MCY	10.30	9.16
tblVehicleEF	MCY	175.52	215.13
tblVehicleEF	MCY	45.05	61.18
tblVehicleEF	MCY	1.16	1.16
tblVehicleEF	MCY	0.32	0.27
tblVehicleEF	MCY	2.1670e-003	2.1260e-003
tblVehicleEF	MCY	3.6900e-003	3.0420e-003
tblVehicleEF	MCY	2.0250e-003	1.9870e-003
tblVehicleEF	MCY	3.4710e-003	2.8590e-003
tblVehicleEF	MCY	0.80	1.59
tblVehicleEF	MCY	0.71	0.70
tblVehicleEF	MCY	0.49	0.97
tblVehicleEF	MCY	2.29	2.30
tblVehicleEF	MCY	0.55	2.00
tblVehicleEF	MCY	2.23	1.97
tblVehicleEF	MCY	2.1400e-003	2.1290e-003
tblVehicleEF	MCY	6.8400e-004	6.0500e-004
tblVehicleEF	MCY	0.80	1.59
tblVehicleEF	MCY	0.71	0.70
tblVehicleEF	MCY	0.49	0.97

tblVehicleEF	MCY	2.85	2.85
tblVehicleEF	MCY	0.55	2.00
tblVehicleEF	MCY	2.42	2.14
tblVehicleEF	MDV	7.9410e-003	2.9420e-003
tblVehicleEF	MDV	0.01	0.07
tblVehicleEF	MDV	0.89	0.69
tblVehicleEF	MDV	2.41	2.92
tblVehicleEF	MDV	425.55	364.81
tblVehicleEF	MDV	96.55	78.19
tblVehicleEF	MDV	0.11	0.06
tblVehicleEF	MDV	0.20	0.28
tblVehicleEF	MDV	1.8340e-003	1.4260e-003
tblVehicleEF	MDV	2.4550e-003	1.7640e-003
tblVehicleEF	MDV	1.6900e-003	1.3150e-003
tblVehicleEF	MDV	2.2570e-003	1.6220e-003
tblVehicleEF	MDV	0.05	0.06
tblVehicleEF	MDV	0.16	0.13
tblVehicleEF	MDV	0.06	0.07
tblVehicleEF	MDV	0.02	0.01
tblVehicleEF	MDV	0.10	0.43
tblVehicleEF	MDV	0.18	0.33
tblVehicleEF	MDV	4.2580e-003	3.4980e-003
tblVehicleEF	MDV	1.0070e-003	7.5100e-004
tblVehicleEF	MDV	0.05	0.06
tblVehicleEF	MDV	0.16	0.13
tblVehicleEF	MDV	0.06	0.07
tblVehicleEF	MDV	0.03	0.02
tblVehicleEF	MDV	0.10	0.43
tblVehicleEF	MDV	0.19	0.36
tblVehicleEF	MH	0.02	8.3300e-003

tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	1.58	0.77
tblVehicleEF	MH	5.19	1.98
tblVehicleEF	MH	1,204.53	1,474.91
tblVehicleEF	MH	58.69	17.92
tblVehicleEF	MH	1.14	1.17
tblVehicleEF	MH	0.78	0.25
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	1.0630e-003	2.5400e-004
tblVehicleEF	MH	3.2150e-003	3.2720e-003
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	9.7800e-004	2.3300e-004
tblVehicleEF	MH	0.64	0.49
tblVehicleEF	MH	0.06	0.05
tblVehicleEF	MH	0.25	0.20
tblVehicleEF	MH	0.08	0.05
tblVehicleEF	MH	0.02	1.12
tblVehicleEF	MH	0.30	0.09
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	6.7700e-004	1.7700e-004
tblVehicleEF	MH	0.64	0.49
tblVehicleEF	MH	0.06	0.05
tblVehicleEF	MH	0.25	0.20
tblVehicleEF	MH	0.10	0.07
tblVehicleEF	MH	0.02	1.12
tblVehicleEF	MH	0.33	0.10
tblVehicleEF	MHD	0.02	2.6270e-003
tblVehicleEF	MHD	3.1500e-003	1.1760e-003
tblVehicleEF	MHD	0.04	6.3760e-003

tblVehicleEF	MHD	0.27	0.35
tblVehicleEF	MHD	0.28	0.18
tblVehicleEF	MHD	3.80	0.72
tblVehicleEF	MHD	170.61	71.79
tblVehicleEF	MHD	1,177.05	1,024.67
tblVehicleEF	MHD	43.34	6.41
tblVehicleEF	MHD	0.47	0.40
tblVehicleEF	MHD	1.11	1.45
tblVehicleEF	MHD	13.30	1.84
tblVehicleEF	MHD	1.0200e-004	2.7100e-004
tblVehicleEF	MHD	3.0930e-003	6.9590e-003
tblVehicleEF	MHD	5.9300e-004	7.3000e-005
tblVehicleEF	MHD	9.8000e-005	2.5900e-004
tblVehicleEF	MHD	2.9550e-003	6.6530e-003
tblVehicleEF	MHD	5.4600e-004	6.7000e-005
tblVehicleEF	MHD	5.7600e-004	2.3300e-004
tblVehicleEF	MHD	0.03	0.01
tblVehicleEF	MHD	0.02	0.01
tblVehicleEF	MHD	3.5000e-004	1.4200e-004
tblVehicleEF	MHD	0.04	0.01
tblVehicleEF	MHD	0.01	0.07
tblVehicleEF	MHD	0.23	0.03
tblVehicleEF	MHD	1.6370e-003	6.8000e-004
tblVehicleEF	MHD	0.01	9.7420e-003
tblVehicleEF	MHD	5.0000e-004	6.3000e-005
tblVehicleEF	MHD	5.7600e-004	2.3300e-004
tblVehicleEF	MHD	0.03	0.01
tblVehicleEF	MHD	0.03	0.02
tblVehicleEF	MHD	3.5000e-004	1.4200e-004
tblVehicleEF	MHD	0.05	0.02

tblVehicleEF	MHD	0.01	0.07
tblVehicleEF	MHD	0.25	0.04
tblVehicleEF	OBUS	0.01	8.3240e-003
tblVehicleEF	OBUS	6.6370e-003	5.7470e-003
tblVehicleEF	OBUS	0.03	0.02
tblVehicleEF	OBUS	0.24	0.60
tblVehicleEF	OBUS	0.46	0.64
tblVehicleEF	OBUS	5.23	2.37
tblVehicleEF	OBUS	111.04	87.10
tblVehicleEF	OBUS	1,288.37	1,402.18
tblVehicleEF	OBUS	65.70	18.77
tblVehicleEF	OBUS	0.24	0.35
tblVehicleEF	OBUS	0.94	1.25
tblVehicleEF	OBUS	3.00	0.85
tblVehicleEF	OBUS	2.2000e-005	1.1600e-004
tblVehicleEF	OBUS	2.8390e-003	7.2930e-003
tblVehicleEF	OBUS	8.8600e-004	1.9300e-004
tblVehicleEF	OBUS	2.1000e-005	1.1100e-004
tblVehicleEF	OBUS	2.6950e-003	6.9590e-003
tblVehicleEF	OBUS	8.1400e-004	1.7700e-004
tblVehicleEF	OBUS	1.1640e-003	1.4520e-003
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.03	0.05
tblVehicleEF	OBUS	5.5500e-004	6.9300e-004
tblVehicleEF	OBUS	0.05	0.03
tblVehicleEF	OBUS	0.03	0.27
tblVehicleEF	OBUS	0.32	0.11
tblVehicleEF	OBUS	1.0710e-003	8.2900e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	7.4900e-004	1.8600e-004

tblVehicleEF	OBUS	1.1640e-003	1.4520e-003
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.04	0.07
tblVehicleEF	OBUS	5.5500e-004	6.9300e-004
tblVehicleEF	OBUS	0.06	0.05
tblVehicleEF	OBUS	0.03	0.27
tblVehicleEF	OBUS	0.35	0.12
tblVehicleEF	SBUS	0.83	0.08
tblVehicleEF	SBUS	0.01	4.1020e-003
tblVehicleEF	SBUS	0.06	6.7410e-003
tblVehicleEF	SBUS	10.93	3.21
tblVehicleEF	SBUS	0.80	0.33
tblVehicleEF	SBUS	10.51	0.98
tblVehicleEF	SBUS	942.53	343.69
tblVehicleEF	SBUS	913.72	965.10
tblVehicleEF	SBUS	75.80	5.66
tblVehicleEF	SBUS	5.18	2.68
tblVehicleEF	SBUS	2.16	3.11
tblVehicleEF	SBUS	8.57	1.17
tblVehicleEF	SBUS	4.2610e-003	2.5480e-003
tblVehicleEF	SBUS	9.6910e-003	0.01
tblVehicleEF	SBUS	0.01	0.02
tblVehicleEF	SBUS	1.3750e-003	8.4000e-005
tblVehicleEF	SBUS	4.0770e-003	2.4380e-003
tblVehicleEF	SBUS	2.4230e-003	2.6070e-003
tblVehicleEF	SBUS	0.01	0.02
tblVehicleEF	SBUS	1.2640e-003	7.8000e-005
tblVehicleEF	SBUS	3.0300e-003	4.3100e-004
tblVehicleEF	SBUS	0.03	4.2120e-003
tblVehicleEF	SBUS	1.30	0.36

tblVehicleEF	SBUS	1.4980e-003	2.0800e-004
tblVehicleEF	SBUS	0.08	0.05
tblVehicleEF	SBUS	0.02	0.03
tblVehicleEF	SBUS	0.52	0.04
tblVehicleEF	SBUS	9.3790e-003	3.2810e-003
tblVehicleEF	SBUS	8.8930e-003	9.2580e-003
tblVehicleEF	SBUS	9.3900e-004	5.6000e-005
tblVehicleEF	SBUS	3.0300e-003	4.3100e-004
tblVehicleEF	SBUS	0.03	4.2120e-003
tblVehicleEF	SBUS	1.89	0.52
tblVehicleEF	SBUS	1.4980e-003	2.0800e-004
tblVehicleEF	SBUS	0.10	0.06
tblVehicleEF	SBUS	0.02	0.03
tblVehicleEF	SBUS	0.57	0.04
tblVehicleEF	UBUS	0.26	1.15
tblVehicleEF	UBUS	0.04	1.0340e-003
tblVehicleEF	UBUS	6.18	8.47
tblVehicleEF	UBUS	7.78	0.07
tblVehicleEF	UBUS	2,169.74	1,640.60
tblVehicleEF	UBUS	84.13	0.82
tblVehicleEF	UBUS	13.74	0.72
tblVehicleEF	UBUS	16.04	8.7940e-003
tblVehicleEF	UBUS	0.64	0.07
tblVehicleEF	UBUS	0.01	0.03
tblVehicleEF	UBUS	0.28	5.2480e-003
tblVehicleEF	UBUS	9.8900e-004	7.0000e-006
tblVehicleEF	UBUS	0.27	0.03
tblVehicleEF	UBUS	3.0000e-003	7.9020e-003
tblVehicleEF	UBUS	0.27	5.0200e-003
tblVehicleEF	UBUS	9.0900e-004	6.0000e-006

tblVehicleEF	UBUS	2.3960e-003	5.7000e-005
tblVehicleEF	UBUS	0.05	8.4400e-004
tblVehicleEF	UBUS	1.2220e-003	3.9000e-005
tblVehicleEF	UBUS	0.71	0.02
tblVehicleEF	UBUS	0.01	5.0210e-003
tblVehicleEF	UBUS	0.59	4.5070e-003
tblVehicleEF	UBUS	0.02	0.01
tblVehicleEF	UBUS	9.8100e-004	8.0000e-006
tblVehicleEF	UBUS	2.3960e-003	5.7000e-005
tblVehicleEF	UBUS	0.05	8.4400e-004
tblVehicleEF	UBUS	1.2220e-003	3.9000e-005
tblVehicleEF	UBUS	1.03	1.17
tblVehicleEF	UBUS	0.01	5.0210e-003
tblVehicleEF	UBUS	0.65	4.9340e-003
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.20
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					

2025	0.1054	0.8408	0.9685	1.8600e-003	0.0434	0.0339	0.0773	0.0220	0.0321	0.0541	0.0000	160.1299	160.1299	0.0350	0.0000	161.0051
Maximum	**0.1054**	**0.8408**	**0.9685**	**1.8600e-003**	**0.0434**	**0.0339**	**0.0773**	**0.0220**	**0.0321**	**0.0541**	**0.0000**	**160.1299**	**160.1299**	**0.0350**	**0.0000**	**161.0051**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	9.9600e-003	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005
Energy	3.0000e-004	2.7300e-003	2.2900e-003	2.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	4.5920	4.5920	2.8000e-004	1.0000e-004	4.6290
Mobile	1.2000e-004	3.0000e-004	1.0100e-003	0.0000	3.5000e-004	0.0000	3.5000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3446	0.3446	1.0000e-005	0.0000	0.3449
Waste						0.0000	0.0000		0.0000	0.0000	0.5663	0.0000	0.5663	0.0335	0.0000	1.4031
Water						0.0000	0.0000		0.0000	0.0000	0.1841	0.2682	0.4523	6.7000e-004	4.1000e-004	0.5906
Total	**0.0104**	**3.0300e-003**	**3.3200e-003**	**2.0000e-005**	**3.5000e-004**	**2.1000e-004**	**5.6000e-004**	**9.0000e-005**	**2.1000e-004**	**3.1000e-004**	**0.7504**	**5.2048**	**5.9552**	**0.0344**	**5.1000e-004**	**6.9677**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	9.9600e-003	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005

Energy	3.0000e-004	2.7300e-003	2.2900e-003	2.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	4.5920	4.5920	2.8000e-004	1.0000e-004	4.6290
Mobile	1.2000e-004	3.0000e-004	1.0100e-003	0.0000	3.5000e-004	0.0000	3.5000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3446	0.3446	1.0000e-005	0.0000	0.3449
Waste						0.0000	0.0000		0.0000	0.0000	0.5663	0.0000	0.5663	0.0335	0.0000	1.4031
Water						0.0000	0.0000		0.0000	0.0000	0.1841	0.2682	0.4523	6.7000e-004	4.1000e-004	0.5906
Total	**0.0104**	**3.0300e-003**	**3.3200e-003**	**2.0000e-005**	**3.5000e-004**	**2.1000e-004**	**5.6000e-004**	**9.0000e-005**	**2.1000e-004**	**3.1000e-004**	**0.7504**	**5.2048**	**5.9552**	**0.0344**	**5.1000e-004**	**6.9677**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2025	1/2/2025	5	2	
2	Site Preparation	Site Preparation	1/3/2025	1/7/2025	5	3	
3	Grading	Grading	1/8/2025	1/21/2025	5	10	
4	Trenching	Trenching	1/8/2025	1/21/2025	5	10	
5	Retaining Wall	Site Preparation	1/22/2025	2/4/2025	5	10	
6	Building Construction	Building Construction	1/22/2025	6/25/2025	5	111	
7	Architectural Coating	Architectural Coating	3/3/2025	6/23/2025	5	81	
8	Paving	Paving	6/7/2025	6/20/2025	5	10	
9	Landscaping/Fencing	Site Preparation	6/20/2025	6/26/2025	5	5	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 3,375; Non-Residential Outdoor: 1,125; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	1	8.00	158	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	1	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Aerial Lifts	1	8.00	63	0.31
Architectural Coating	Air Compressors	1	8.00	78	0.48
Retaining Wall	Excavators	1	8.00	187	0.41
Retaining Wall	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Landscaping/Fencing	Forklifts	1	8.00	187	0.41
Landscaping/Fencing	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trenching	Concrete/Industrial Saws	1	8.00	81	0.73
Trenching	Excavators	1	8.00	158	0.38
Trenching	Graders	1	8.00	187	0.41
Trenching	Rubber Tired Dozers	1	8.00	247	0.40
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Retaining Wall	Graders	1	8.00	187	0.41
Landscaping/Fencing	Graders	1	8.00	187	0.41

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	5	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	0.00	0.00	0.00	10.80	7.30	7.30	LD_Mix	HDT_Mix	HHDT
Paving	5	0.00	0.00	0.00	10.80	7.30	7.30	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Retaining Wall	3	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Landscaping/Fencing	3	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	5	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.2 Demolition - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.2400e-003	0.0115	0.0121	2.0000e-005		5.0000e-004	5.0000e-004		4.6000e-004	4.6000e-004	0.0000	2.0158	2.0158	5.0000e-004	0.0000	2.0283

Total	**1.2400e-003**	**0.0115**	**0.0121**	**2.0000e-005**		**5.0000e-004**	**5.0000e-004**		**4.6000e-004**	**4.6000e-004**	**0.0000**	**2.0158**	**2.0158**	**5.0000e-004**	**0.0000**	**2.0283**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.3000e-003	0.0000	9.3000e-003	4.9900e-003	0.0000	4.9900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6400e-003	0.0171	0.0102	3.0000e-005		6.8000e-004	6.8000e-004		6.3000e-004	6.3000e-004	0.0000	2.4076	2.4076	7.8000e-004	0.0000	2.4270
Total	**1.6400e-003**	**0.0171**	**0.0102**	**3.0000e-005**	**9.3000e-003**	**6.8000e-004**	**9.9800e-003**	**4.9900e-003**	**6.3000e-004**	**5.6200e-003**	**0.0000**	**2.4076**	**2.4076**	**7.8000e-004**	**0.0000**	**2.4270**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Grading - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0301	0.0000	0.0301	0.0166	0.0000	0.0166	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.7700e-003	0.0746	0.0686	1.5000e-004		3.0400e-003	3.0400e-003		2.8300e-003	2.8300e-003	0.0000	12.9830	12.9830	3.4500e-003	0.0000	13.0692
Total	**7.7700e-003**	**0.0746**	**0.0686**	**1.5000e-004**	**0.0301**	**3.0400e-003**	**0.0332**	**0.0166**	**2.8300e-003**	**0.0194**	**0.0000**	**12.9830**	**12.9830**	**3.4500e-003**	**0.0000**	**13.0692**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Trenching - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.7700e-003	0.0746	0.0686	1.5000e-004		3.0400e-003	3.0400e-003		2.8300e-003	2.8300e-003	0.0000	12.9830	12.9830	3.4500e-003	0.0000	13.0692
Total	**7.7700e-003**	**0.0746**	**0.0686**	**1.5000e-004**		**3.0400e-003**	**3.0400e-003**		**2.8300e-003**	**2.8300e-003**	**0.0000**	**12.9830**	**12.9830**	**3.4500e-003**	**0.0000**	**13.0692**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Retaining Wall - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.6500e-003	0.0000	2.6500e-003	2.9000e-004	0.0000	2.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.1000e-003	0.0305	0.0264	8.0000e-005		1.0400e-003	1.0400e-003		9.6000e-004	9.6000e-004	0.0000	7.1727	7.1727	2.3200e-003	0.0000	7.2307
Total	**3.1000e-003**	**0.0305**	**0.0264**	**8.0000e-005**	**2.6500e-003**	**1.0400e-003**	**3.6900e-003**	**2.9000e-004**	**9.6000e-004**	**1.2500e-003**	**0.0000**	**7.1727**	**7.1727**	**2.3200e-003**	**0.0000**	**7.2307**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0565	0.5028	0.5778	1.0900e-003		0.0205	0.0205		0.0194	0.0194	0.0000	92.6128	92.6128	0.0186	0.0000	93.0773
Total	**0.0565**	**0.5028**	**0.5778**	**1.0900e-003**		**0.0205**	**0.0205**		**0.0194**	**0.0194**	**0.0000**	**92.6128**	**92.6128**	**0.0186**	**0.0000**	**93.0773**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.8 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0117					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0106	0.0829	0.1419	2.3000e-004		3.1400e-003	3.1400e-003		3.1100e-003	3.1100e-003	0.0000	19.7624	19.7624	2.6800e-003	0.0000	19.8295
Total	**0.0223**	**0.0829**	**0.1419**	**2.3000e-004**		**3.1400e-003**	**3.1400e-003**		**3.1100e-003**	**3.1100e-003**	**0.0000**	**19.7624**	**19.7624**	**2.6800e-003**	**0.0000**	**19.8295**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.9 Paving - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.2400e-003	0.0300	0.0491	8.0000e-005		1.3900e-003	1.3900e-003		1.2800e-003	1.2800e-003	0.0000	6.6041	6.6041	2.0900e-003	0.0000	6.6562

Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.2400e-003**	**0.0300**	**0.0491**	**8.0000e-005**		**1.3900e-003**	**1.3900e-003**		**1.2800e-003**	**1.2800e-003**	**0.0000**	**6.6041**	**6.6041**	**2.0900e-003**	**0.0000**	**6.6562**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.10 Landscaping/Fencing - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.3300e-003	0.0000	1.3300e-003	1.4000e-004	0.0000	1.4000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7500e-003	0.0169	0.0137	4.0000e-005		6.0000e-004	6.0000e-004		5.6000e-004	5.6000e-004	0.0000	3.5887	3.5887	1.1600e-003	0.0000	3.6177
Total	**1.7500e-003**	**0.0169**	**0.0137**	**4.0000e-005**	**1.3300e-003**	**6.0000e-004**	**1.9300e-003**	**1.4000e-004**	**5.6000e-004**	**7.0000e-004**	**0.0000**	**3.5887**	**3.5887**	**1.1600e-003**	**0.0000**	**3.6177**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.2000e-004	3.0000e-004	1.0100e-003	0.0000	3.5000e-004	0.0000	3.5000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3446	0.3446	1.0000e-005	0.0000	0.3449
Unmitigated	1.2000e-004	3.0000e-004	1.0100e-003	0.0000	3.5000e-004	0.0000	3.5000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3446	0.3446	1.0000e-005	0.0000	0.3449

4.2 Trip Summary Information

	Average Daily Trip Rate	Unmitigated	Mitigated

Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.45	0.00	0.00	938	938
Total	0.45	0.00	0.00	938	938

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.560859	0.054324	0.173527	0.105775	0.020803	0.005249	0.024187	0.045831	0.001298	0.001788	0.005336	0.000351	0.000672

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1.6203	1.6203	2.2000e-004	5.0000e-005	1.6397
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1.6203	1.6203	2.2000e-004	5.0000e-005	1.6397
NaturalGas Mitigated	3.0000e-004	2.7300e-003	2.2900e-003	2.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	2.9717	2.9717	6.0000e-005	5.0000e-005	2.9894
NaturalGas Unmitigated	3.0000e-004	2.7300e-003	2.2900e-003	2.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	2.9717	2.9717	6.0000e-005	5.0000e-005	2.9894

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	55687.5	3.0000e-004	2.7300e-003	2.2900e-003	2.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	2.9717	2.9717	6.0000e-005	5.0000e-005	2.9894
Total		**3.0000e-004**	**2.7300e-003**	**2.2900e-003**	**2.0000e-005**		**2.1000e-004**	**2.1000e-004**		**2.1000e-004**	**2.1000e-004**	**0.0000**	**2.9717**	**2.9717**	**6.0000e-005**	**5.0000e-005**	**2.9894**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	55687.5	3.0000e-004	2.7300e-003	2.2900e-003	2.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	2.9717	2.9717	6.0000e-005	5.0000e-005	2.9894
Total		**3.0000e-004**	**2.7300e-003**	**2.2900e-003**	**2.0000e-005**		**2.1000e-004**	**2.1000e-004**		**2.1000e-004**	**2.1000e-004**	**0.0000**	**2.9717**	**2.9717**	**6.0000e-005**	**5.0000e-005**	**2.9894**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			

General Light Industry	17010	1.6203	2.2000e-004	5.0000e-005	1.6397
Total		**1.6203**	**2.2000e-004**	**5.0000e-005**	**1.6397**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	17010	1.6203	2.2000e-004	5.0000e-005	1.6397
Total		**1.6203**	**2.2000e-004**	**5.0000e-005**	**1.6397**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	9.9600e-003	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005
Unmitigated	9.9600e-003	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.1700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	8.7900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005
Total	**9.9600e-003**	**0.0000**	**2.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0000**	**4.0000e-005**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.1700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	8.7900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005
Total	**9.9600e-003**	**0.0000**	**2.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0000**	**4.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.4523	6.7000e-004	4.1000e-004	0.5906
Unmitigated	0.4523	6.7000e-004	4.1000e-004	0.5906

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0.520312 / 0	0.4523	6.7000e-004	4.1000e-004	0.5906
Total		**0.4523**	**6.7000e-004**	**4.1000e-004**	**0.5906**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e

Land Use	Mgal	MT/yr			
General Light Industry	0.520312 / 0	0.4523	6.7000e-004	4.1000e-004	0.5906
Total		**0.4523**	**6.7000e-004**	**4.1000e-004**	**0.5906**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.5663	0.0335	0.0000	1.4031
Unmitigated	0.5663	0.0335	0.0000	1.4031

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	2.79	0.5663	0.0335	0.0000	1.4031

Total		**0.5663**	**0.0335**	**0.0000**	**1.4031**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	2.79	0.5663	0.0335	0.0000	1.4031
Total		**0.5663**	**0.0335**	**0.0000**	**1.4031**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

EBMUD - Fontaine Demo of Existing PP

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	0.00	1000sqft	0.14	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2025
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	210	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Per most recent Published intensity factor

Land Use - Demo emissions

Construction Phase - Per the Construction Data Sheet provided by Panorama

Off-road Equipment - One of the Backhoes os a hoe ram

Off-road Equipment - Pipeline Abandonment per data sheet provided by Panorama

Off-road Equipment - No grading for demo

Off-road Equipment - Concrete trucks included in haul trips

Off-road Equipment - Back Fill Phase of Demo

Off-road Equipment - No Building Construstion, Demo Only

Off-road Equipment - Site Restoration

Grading -

Demolition -

Trips and VMT - Building trips reflect retaining wall construction trips. No grading or coating phases. Paving hault trips based on backfill volume.

Vehicle Trips - No Ops

Vehicle Emission Factors - EMFAC2017 2025 EFs

Vehicle Emission Factors -

Vehicle Emission Factors -

Energy Use -

Water And Wastewater - WWTF

Construction Off-road Equipment Mitigation - T3L3 Mitigation with Basic Dust BMPs

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	5.00	1.00
tblConstructionPhase	NumDays	100.00	10.00
tblConstructionPhase	NumDays	10.00	15.00
tblConstructionPhase	NumDays	2.00	1.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	2.00	5.00
tblConstructionPhase	PhaseEndDate	1/28/2021	7/1/2025
tblConstructionPhase	PhaseEndDate	1/14/2021	8/11/2025
tblConstructionPhase	PhaseEndDate	8/24/2020	7/21/2025
tblConstructionPhase	PhaseEndDate	8/27/2020	7/1/2025
tblConstructionPhase	PhaseEndDate	1/21/2021	8/15/2025
tblConstructionPhase	PhaseEndDate	8/25/2020	7/28/2025
tblConstructionPhase	PhaseStartDate	1/22/2021	7/1/2025
tblConstructionPhase	PhaseStartDate	8/28/2020	7/29/2025

tblConstructionPhase	PhaseStartDate	8/11/2020	7/1/2025
tblConstructionPhase	PhaseStartDate	8/26/2020	7/1/2025
tblConstructionPhase	PhaseStartDate	1/15/2021	8/11/2025
tblConstructionPhase	PhaseStartDate	8/25/2020	7/22/2025
tblFleetMix	HHD	0.05	0.05
tblFleetMix	LDA	0.56	0.56
tblFleetMix	LDT1	0.04	0.05
tblFleetMix	LDT2	0.19	0.17
tblFleetMix	LHD1	0.01	0.02
tblFleetMix	LHD2	5.1320e-003	5.2489e-003
tblFleetMix	MCY	5.4270e-003	5.3363e-003
tblFleetMix	MDV	0.11	0.11
tblFleetMix	MH	6.7900e-004	6.7220e-004
tblFleetMix	MHD	0.03	0.02
tblFleetMix	OBUS	2.2300e-003	1.2980e-003
tblFleetMix	SBUS	3.5100e-004	3.5097e-004
tblFleetMix	UBUS	2.2770e-003	1.7875e-003
tblGrading	MaterialImported	0.00	120.00
tblLandUse	LotAcreage	0.00	0.14
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentType		Cement and Mortar Mixers

tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	4.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00

tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	1.00	0.00
tblOffRoadEquipment	UsageHours	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	210
tblTripsAndVMT	HaulingTripLength	20.00	7.30
tblTripsAndVMT	HaulingTripNumber	106.00	0.00
tblTripsAndVMT	HaulingTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	13.00	0.00
tblTripsAndVMT	WorkerTripNumber	20.00	0.00
tblTripsAndVMT	WorkerTripNumber	10.00	0.00
tblTripsAndVMT	WorkerTripNumber	5.00	0.00
tblVehicleEF	HHD	0.60	0.02
tblVehicleEF	HHD	0.04	0.03
tblVehicleEF	HHD	0.07	0.00
tblVehicleEF	HHD	1.62	6.60
tblVehicleEF	HHD	0.78	0.35
tblVehicleEF	HHD	1.95	3.9490e-003
tblVehicleEF	HHD	4,618.39	1,061.58
tblVehicleEF	HHD	1,529.11	1,349.20
tblVehicleEF	HHD	6.17	0.04
tblVehicleEF	HHD	13.88	5.42
tblVehicleEF	HHD	1.94	2.58
tblVehicleEF	HHD	20.09	2.28
tblVehicleEF	HHD	5.2700e-003	2.2870e-003
tblVehicleEF	HHD	0.06	0.06
tblVehicleEF	HHD	0.04	0.04
tblVehicleEF	HHD	6.0310e-003	0.03
tblVehicleEF	HHD	5.1000e-005	0.00

tblVehicleEF	HHD	5.0420e-003	2.1880e-003
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.9010e-003	8.9280e-003
tblVehicleEF	HHD	5.7700e-003	0.02
tblVehicleEF	HHD	4.7000e-005	0.00
tblVehicleEF	HHD	4.5000e-005	1.0000e-006
tblVehicleEF	HHD	2.5700e-003	6.5000e-005
tblVehicleEF	HHD	0.42	0.45
tblVehicleEF	HHD	3.2000e-005	1.0000e-006
tblVehicleEF	HHD	0.09	0.02
tblVehicleEF	HHD	2.0000e-004	3.3100e-004
tblVehicleEF	HHD	0.04	1.0000e-006
tblVehicleEF	HHD	0.04	9.9360e-003
tblVehicleEF	HHD	0.01	0.01
tblVehicleEF	HHD	9.4000e-005	0.00
tblVehicleEF	HHD	4.5000e-005	1.0000e-006
tblVehicleEF	HHD	2.5700e-003	6.5000e-005
tblVehicleEF	HHD	0.49	0.51
tblVehicleEF	HHD	3.2000e-005	1.0000e-006
tblVehicleEF	HHD	0.14	0.06
tblVehicleEF	HHD	2.0000e-004	3.3100e-004
tblVehicleEF	HHD	0.05	1.0000e-006
tblVehicleEF	LDA	3.2030e-003	1.6450e-003
tblVehicleEF	LDA	4.3860e-003	0.04
tblVehicleEF	LDA	0.46	0.50
tblVehicleEF	LDA	1.03	2.09
tblVehicleEF	LDA	224.31	238.80
tblVehicleEF	LDA	51.88	50.68
tblVehicleEF	LDA	0.04	0.03
tblVehicleEF	LDA	0.06	0.17

tblVehicleEF	LDA	1.6760e-003	1.3210e-003
tblVehicleEF	LDA	2.2200e-003	1.6380e-003
tblVehicleEF	LDA	1.5440e-003	1.2170e-003
tblVehicleEF	LDA	2.0410e-003	1.5070e-003
tblVehicleEF	LDA	0.03	0.03
tblVehicleEF	LDA	0.09	0.09
tblVehicleEF	LDA	0.03	0.03
tblVehicleEF	LDA	8.0660e-003	6.1430e-003
tblVehicleEF	LDA	0.03	0.20
tblVehicleEF	LDA	0.06	0.19
tblVehicleEF	LDA	2.2450e-003	9.3000e-005
tblVehicleEF	LDA	5.3600e-004	0.00
tblVehicleEF	LDA	0.03	0.03
tblVehicleEF	LDA	0.09	0.09
tblVehicleEF	LDA	0.03	0.03
tblVehicleEF	LDA	0.01	8.9200e-003
tblVehicleEF	LDA	0.03	0.20
tblVehicleEF	LDA	0.06	0.21
tblVehicleEF	LDT1	6.4470e-003	3.1950e-003
tblVehicleEF	LDT1	0.01	0.06
tblVehicleEF	LDT1	0.82	0.76
tblVehicleEF	LDT1	2.17	2.27
tblVehicleEF	LDT1	278.57	286.72
tblVehicleEF	LDT1	64.70	61.42
tblVehicleEF	LDT1	0.08	0.06
tblVehicleEF	LDT1	0.12	0.22
tblVehicleEF	LDT1	2.1340e-003	1.6030e-003
tblVehicleEF	LDT1	2.8790e-003	2.0660e-003
tblVehicleEF	LDT1	1.9640e-003	1.4750e-003
tblVehicleEF	LDT1	2.6480e-003	1.8990e-003

tblVehicleEF	LDT1	0.07	0.07
tblVehicleEF	LDT1	0.21	0.15
tblVehicleEF	LDT1	0.06	0.06
tblVehicleEF	LDT1	0.02	0.01
tblVehicleEF	LDT1	0.13	0.57
tblVehicleEF	LDT1	0.14	0.28
tblVehicleEF	LDT1	2.7940e-003	2.4920e-003
tblVehicleEF	LDT1	6.8400e-004	0.00
tblVehicleEF	LDT1	0.07	0.07
tblVehicleEF	LDT1	0.21	0.15
tblVehicleEF	LDT1	0.06	0.06
tblVehicleEF	LDT1	0.02	0.02
tblVehicleEF	LDT1	0.13	0.57
tblVehicleEF	LDT1	0.15	0.30
tblVehicleEF	LDT2	4.2720e-003	2.6200e-003
tblVehicleEF	LDT2	5.5400e-003	0.06
tblVehicleEF	LDT2	0.59	0.66
tblVehicleEF	LDT2	1.29	2.69
tblVehicleEF	LDT2	313.43	303.78
tblVehicleEF	LDT2	72.23	65.62
tblVehicleEF	LDT2	0.06	0.05
tblVehicleEF	LDT2	0.09	0.24
tblVehicleEF	LDT2	1.7410e-003	1.3590e-003
tblVehicleEF	LDT2	2.3620e-003	1.6760e-003
tblVehicleEF	LDT2	1.6010e-003	1.2510e-003
tblVehicleEF	LDT2	2.1720e-003	1.5410e-003
tblVehicleEF	LDT2	0.03	0.05
tblVehicleEF	LDT2	0.10	0.12
tblVehicleEF	LDT2	0.04	0.06
tblVehicleEF	LDT2	0.01	0.01

tblVehicleEF	LDT2	0.06	0.42
tblVehicleEF	LDT2	0.07	0.27
tblVehicleEF	LDT2	3.1380e-003	9.7420e-003
tblVehicleEF	LDT2	7.4400e-004	6.3000e-005
tblVehicleEF	LDT2	0.03	0.05
tblVehicleEF	LDT2	0.10	0.12
tblVehicleEF	LDT2	0.04	0.06
tblVehicleEF	LDT2	0.02	0.01
tblVehicleEF	LDT2	0.06	0.42
tblVehicleEF	LDT2	0.08	0.30
tblVehicleEF	LHD1	5.0170e-003	5.0360e-003
tblVehicleEF	LHD1	0.02	7.5510e-003
tblVehicleEF	LHD1	0.02	0.01
tblVehicleEF	LHD1	0.14	0.19
tblVehicleEF	LHD1	0.93	0.69
tblVehicleEF	LHD1	2.33	1.05
tblVehicleEF	LHD1	9.00	8.78
tblVehicleEF	LHD1	679.94	776.00
tblVehicleEF	LHD1	31.29	11.65
tblVehicleEF	LHD1	0.07	0.05
tblVehicleEF	LHD1	1.06	0.60
tblVehicleEF	LHD1	0.96	0.31
tblVehicleEF	LHD1	8.6200e-004	8.2600e-004
tblVehicleEF	LHD1	0.01	9.7480e-003
tblVehicleEF	LHD1	0.01	9.2900e-003
tblVehicleEF	LHD1	8.4600e-004	2.4100e-004
tblVehicleEF	LHD1	8.2500e-004	7.9000e-004
tblVehicleEF	LHD1	2.5370e-003	2.4370e-003
tblVehicleEF	LHD1	0.01	8.8410e-003
tblVehicleEF	LHD1	7.7800e-004	2.2200e-004

tblVehicleEF	LHD1	2.2020e-003	1.6730e-003
tblVehicleEF	LHD1	0.10	0.07
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	1.2910e-003	9.7800e-004
tblVehicleEF	LHD1	0.12	0.09
tblVehicleEF	LHD1	0.30	0.51
tblVehicleEF	LHD1	0.23	0.07
tblVehicleEF	LHD1	9.0000e-005	8.5000e-005
tblVehicleEF	LHD1	6.6680e-003	7.5790e-003
tblVehicleEF	LHD1	3.5700e-004	1.1500e-004
tblVehicleEF	LHD1	2.2020e-003	1.6730e-003
tblVehicleEF	LHD1	0.10	0.07
tblVehicleEF	LHD1	0.02	0.03
tblVehicleEF	LHD1	1.2910e-003	9.7800e-004
tblVehicleEF	LHD1	0.14	0.10
tblVehicleEF	LHD1	0.30	0.51
tblVehicleEF	LHD1	0.25	0.07
tblVehicleEF	LHD2	3.2700e-003	3.3950e-003
tblVehicleEF	LHD2	6.9360e-003	6.4120e-003
tblVehicleEF	LHD2	6.0080e-003	8.4420e-003
tblVehicleEF	LHD2	0.12	0.14
tblVehicleEF	LHD2	0.53	0.57
tblVehicleEF	LHD2	1.12	0.65
tblVehicleEF	LHD2	13.77	13.43
tblVehicleEF	LHD2	701.55	764.99
tblVehicleEF	LHD2	24.72	8.49
tblVehicleEF	LHD2	0.09	0.08
tblVehicleEF	LHD2	0.57	0.68
tblVehicleEF	LHD2	0.43	0.20
tblVehicleEF	LHD2	1.1530e-003	1.3420e-003

tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	3.9000e-004	1.3000e-004
tblVehicleEF	LHD2	1.1030e-003	1.2830e-003
tblVehicleEF	LHD2	2.6840e-003	2.6600e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	3.5800e-004	1.2000e-004
tblVehicleEF	LHD2	7.0500e-004	9.4800e-004
tblVehicleEF	LHD2	0.03	0.04
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	4.4100e-004	5.7200e-004
tblVehicleEF	LHD2	0.10	0.10
tblVehicleEF	LHD2	0.06	0.26
tblVehicleEF	LHD2	0.08	0.04
tblVehicleEF	LHD2	1.3400e-004	1.2900e-004
tblVehicleEF	LHD2	6.8250e-003	7.4000e-003
tblVehicleEF	LHD2	2.6700e-004	8.4000e-005
tblVehicleEF	LHD2	7.0500e-004	9.4800e-004
tblVehicleEF	LHD2	0.03	0.04
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	4.4100e-004	5.7200e-004
tblVehicleEF	LHD2	0.12	0.12
tblVehicleEF	LHD2	0.06	0.26
tblVehicleEF	LHD2	0.09	0.05
tblVehicleEF	MCY	0.47	0.34
tblVehicleEF	MCY	0.16	0.26
tblVehicleEF	MCY	19.41	19.52
tblVehicleEF	MCY	10.30	9.16
tblVehicleEF	MCY	175.52	215.13
tblVehicleEF	MCY	45.05	61.18

tblVehicleEF	MCY	1.16	1.16
tblVehicleEF	MCY	0.32	0.27
tblVehicleEF	MCY	2.1670e-003	2.1260e-003
tblVehicleEF	MCY	3.6900e-003	3.0420e-003
tblVehicleEF	MCY	2.0250e-003	1.9870e-003
tblVehicleEF	MCY	3.4710e-003	2.8590e-003
tblVehicleEF	MCY	0.80	1.59
tblVehicleEF	MCY	0.71	0.70
tblVehicleEF	MCY	0.49	0.97
tblVehicleEF	MCY	2.29	2.30
tblVehicleEF	MCY	0.55	2.00
tblVehicleEF	MCY	2.23	1.97
tblVehicleEF	MCY	2.1400e-003	2.1290e-003
tblVehicleEF	MCY	6.8400e-004	6.0500e-004
tblVehicleEF	MCY	0.80	1.59
tblVehicleEF	MCY	0.71	0.70
tblVehicleEF	MCY	0.49	0.97
tblVehicleEF	MCY	2.85	2.85
tblVehicleEF	MCY	0.55	2.00
tblVehicleEF	MCY	2.42	2.14
tblVehicleEF	MDV	7.9410e-003	2.9420e-003
tblVehicleEF	MDV	0.01	0.07
tblVehicleEF	MDV	0.89	0.69
tblVehicleEF	MDV	2.41	2.92
tblVehicleEF	MDV	425.55	364.81
tblVehicleEF	MDV	96.55	78.19
tblVehicleEF	MDV	0.11	0.06
tblVehicleEF	MDV	0.20	0.28
tblVehicleEF	MDV	1.8340e-003	1.4260e-003
tblVehicleEF	MDV	2.4550e-003	1.7640e-003

tblVehicleEF	MDV	1.6900e-003	1.3150e-003
tblVehicleEF	MDV	2.2570e-003	1.6220e-003
tblVehicleEF	MDV	0.05	0.06
tblVehicleEF	MDV	0.16	0.13
tblVehicleEF	MDV	0.06	0.07
tblVehicleEF	MDV	0.02	0.01
tblVehicleEF	MDV	0.10	0.43
tblVehicleEF	MDV	0.18	0.33
tblVehicleEF	MDV	4.2580e-003	3.4980e-003
tblVehicleEF	MDV	1.0070e-003	7.5100e-004
tblVehicleEF	MDV	0.05	0.06
tblVehicleEF	MDV	0.16	0.13
tblVehicleEF	MDV	0.06	0.07
tblVehicleEF	MDV	0.03	0.02
tblVehicleEF	MDV	0.10	0.43
tblVehicleEF	MDV	0.19	0.36
tblVehicleEF	MH	0.02	8.3300e-003
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	1.58	0.77
tblVehicleEF	MH	5.19	1.98
tblVehicleEF	MH	1,204.53	1,474.91
tblVehicleEF	MH	58.69	17.92
tblVehicleEF	MH	1.14	1.17
tblVehicleEF	MH	0.78	0.25
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	1.0630e-003	2.5400e-004
tblVehicleEF	MH	3.2150e-003	3.2720e-003
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	9.7800e-004	2.3300e-004

tblVehicleEF	MH	0.64	0.49
tblVehicleEF	MH	0.06	0.05
tblVehicleEF	MH	0.25	0.20
tblVehicleEF	MH	0.08	0.05
tblVehicleEF	MH	0.02	1.12
tblVehicleEF	MH	0.30	0.09
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	6.7700e-004	1.7700e-004
tblVehicleEF	MH	0.64	0.49
tblVehicleEF	MH	0.06	0.05
tblVehicleEF	MH	0.25	0.20
tblVehicleEF	MH	0.10	0.07
tblVehicleEF	MH	0.02	1.12
tblVehicleEF	MH	0.33	0.10
tblVehicleEF	MHD	0.02	2.6270e-003
tblVehicleEF	MHD	3.1500e-003	1.1760e-003
tblVehicleEF	MHD	0.04	6.3760e-003
tblVehicleEF	MHD	0.27	0.35
tblVehicleEF	MHD	0.28	0.18
tblVehicleEF	MHD	3.80	0.72
tblVehicleEF	MHD	170.61	71.79
tblVehicleEF	MHD	1,177.05	1,024.67
tblVehicleEF	MHD	43.34	6.41
tblVehicleEF	MHD	0.47	0.40
tblVehicleEF	MHD	1.11	1.45
tblVehicleEF	MHD	13.30	1.84
tblVehicleEF	MHD	1.0200e-004	2.7100e-004
tblVehicleEF	MHD	3.0930e-003	6.9590e-003
tblVehicleEF	MHD	5.9300e-004	7.3000e-005
tblVehicleEF	MHD	9.8000e-005	2.5900e-004

tblVehicleEF	MHD	2.9550e-003	6.6530e-003
tblVehicleEF	MHD	5.4600e-004	6.7000e-005
tblVehicleEF	MHD	5.7600e-004	2.3300e-004
tblVehicleEF	MHD	0.03	0.01
tblVehicleEF	MHD	0.02	0.01
tblVehicleEF	MHD	3.5000e-004	1.4200e-004
tblVehicleEF	MHD	0.04	0.01
tblVehicleEF	MHD	0.01	0.07
tblVehicleEF	MHD	0.23	0.03
tblVehicleEF	MHD	1.6370e-003	6.8000e-004
tblVehicleEF	MHD	0.01	9.7420e-003
tblVehicleEF	MHD	5.0000e-004	6.3000e-005
tblVehicleEF	MHD	5.7600e-004	2.3300e-004
tblVehicleEF	MHD	0.03	0.01
tblVehicleEF	MHD	0.03	0.02
tblVehicleEF	MHD	3.5000e-004	1.4200e-004
tblVehicleEF	MHD	0.05	0.02
tblVehicleEF	MHD	0.01	0.07
tblVehicleEF	MHD	0.25	0.04
tblVehicleEF	OBUS	0.01	8.3240e-003
tblVehicleEF	OBUS	6.6370e-003	5.7470e-003
tblVehicleEF	OBUS	0.03	0.02
tblVehicleEF	OBUS	0.24	0.60
tblVehicleEF	OBUS	0.46	0.64
tblVehicleEF	OBUS	5.23	2.37
tblVehicleEF	OBUS	111.04	87.10
tblVehicleEF	OBUS	1,288.37	1,402.18
tblVehicleEF	OBUS	65.70	18.77
tblVehicleEF	OBUS	0.24	0.35
tblVehicleEF	OBUS	0.94	1.25

tblVehicleEF	OBUS	3.00	0.85
tblVehicleEF	OBUS	2.2000e-005	1.1600e-004
tblVehicleEF	OBUS	2.8390e-003	7.2930e-003
tblVehicleEF	OBUS	8.8600e-004	1.9300e-004
tblVehicleEF	OBUS	2.1000e-005	1.1100e-004
tblVehicleEF	OBUS	2.6950e-003	6.9590e-003
tblVehicleEF	OBUS	8.1400e-004	1.7700e-004
tblVehicleEF	OBUS	1.1640e-003	1.4520e-003
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.03	0.05
tblVehicleEF	OBUS	5.5500e-004	6.9300e-004
tblVehicleEF	OBUS	0.05	0.03
tblVehicleEF	OBUS	0.03	0.27
tblVehicleEF	OBUS	0.32	0.11
tblVehicleEF	OBUS	1.0710e-003	8.2900e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	7.4900e-004	1.8600e-004
tblVehicleEF	OBUS	1.1640e-003	1.4520e-003
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.04	0.07
tblVehicleEF	OBUS	5.5500e-004	6.9300e-004
tblVehicleEF	OBUS	0.06	0.05
tblVehicleEF	OBUS	0.03	0.27
tblVehicleEF	OBUS	0.35	0.12
tblVehicleEF	SBUS	0.83	0.08
tblVehicleEF	SBUS	0.01	4.1020e-003
tblVehicleEF	SBUS	0.06	6.7410e-003
tblVehicleEF	SBUS	10.93	3.21
tblVehicleEF	SBUS	0.80	0.33
tblVehicleEF	SBUS	10.51	0.98

tblVehicleEF	SBUS	942.53	343.69
tblVehicleEF	SBUS	913.72	965.10
tblVehicleEF	SBUS	75.80	5.66
tblVehicleEF	SBUS	5.18	2.68
tblVehicleEF	SBUS	2.16	3.11
tblVehicleEF	SBUS	8.57	1.17
tblVehicleEF	SBUS	4.2610e-003	2.5480e-003
tblVehicleEF	SBUS	9.6910e-003	0.01
tblVehicleEF	SBUS	0.01	0.02
tblVehicleEF	SBUS	1.3750e-003	8.4000e-005
tblVehicleEF	SBUS	4.0770e-003	2.4380e-003
tblVehicleEF	SBUS	2.4230e-003	2.6070e-003
tblVehicleEF	SBUS	0.01	0.02
tblVehicleEF	SBUS	1.2640e-003	7.8000e-005
tblVehicleEF	SBUS	3.0300e-003	4.3100e-004
tblVehicleEF	SBUS	0.03	4.2120e-003
tblVehicleEF	SBUS	1.30	0.36
tblVehicleEF	SBUS	1.4980e-003	2.0800e-004
tblVehicleEF	SBUS	0.08	0.05
tblVehicleEF	SBUS	0.02	0.03
tblVehicleEF	SBUS	0.52	0.04
tblVehicleEF	SBUS	9.3790e-003	3.2810e-003
tblVehicleEF	SBUS	8.8930e-003	9.2580e-003
tblVehicleEF	SBUS	9.3900e-004	5.6000e-005
tblVehicleEF	SBUS	3.0300e-003	4.3100e-004
tblVehicleEF	SBUS	0.03	4.2120e-003
tblVehicleEF	SBUS	1.89	0.52
tblVehicleEF	SBUS	1.4980e-003	2.0800e-004
tblVehicleEF	SBUS	0.10	0.06
tblVehicleEF	SBUS	0.02	0.03

tblVehicleEF	SBUS	0.57	0.04
tblVehicleEF	UBUS	0.26	1.15
tblVehicleEF	UBUS	0.04	1.0340e-003
tblVehicleEF	UBUS	6.18	8.47
tblVehicleEF	UBUS	7.78	0.07
tblVehicleEF	UBUS	2,169.74	1,640.60
tblVehicleEF	UBUS	84.13	0.82
tblVehicleEF	UBUS	13.74	0.72
tblVehicleEF	UBUS	16.04	8.7940e-003
tblVehicleEF	UBUS	0.64	0.07
tblVehicleEF	UBUS	0.01	0.03
tblVehicleEF	UBUS	0.28	5.2480e-003
tblVehicleEF	UBUS	9.8900e-004	7.0000e-006
tblVehicleEF	UBUS	0.27	0.03
tblVehicleEF	UBUS	3.0000e-003	7.9020e-003
tblVehicleEF	UBUS	0.27	5.0200e-003
tblVehicleEF	UBUS	9.0900e-004	6.0000e-006
tblVehicleEF	UBUS	2.3960e-003	5.7000e-005
tblVehicleEF	UBUS	0.05	8.4400e-004
tblVehicleEF	UBUS	1.2220e-003	3.9000e-005
tblVehicleEF	UBUS	0.71	0.02
tblVehicleEF	UBUS	0.01	5.0210e-003
tblVehicleEF	UBUS	0.59	4.5070e-003
tblVehicleEF	UBUS	0.02	0.01
tblVehicleEF	UBUS	9.8100e-004	8.0000e-006
tblVehicleEF	UBUS	2.3960e-003	5.7000e-005
tblVehicleEF	UBUS	0.05	8.4400e-004
tblVehicleEF	UBUS	1.2220e-003	3.9000e-005
tblVehicleEF	UBUS	1.03	1.17
tblVehicleEF	UBUS	0.01	5.0210e-003

tblVehicleEF	UBUS	0.65	4.9340e-003
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2025	0.0185	0.1644	0.2292	3.9000e-004	0.0114	7.1000e-003	0.0186	1.7300e-003	6.6800e-003	8.4100e-003	0.0000	33.8121	33.8121	8.0800e-003	0.0000	34.0141
Maximum	**0.0185**	**0.1644**	**0.2292**	**3.9000e-004**	**0.0114**	**7.1000e-003**	**0.0186**	**1.7300e-003**	**6.6800e-003**	**8.4100e-003**	**0.0000**	**33.8121**	**33.8121**	**8.0800e-003**	**0.0000**	**34.0141**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	7/1/2025	7/21/2025	5	15	
2	Site Preparation	Demolition	7/22/2025	7/28/2025	5	5	Pipe Abandonment
3	Grading	Grading	7/1/2025	7/1/2025	5	1	No grading
4	Building Construction	Building Construction	7/29/2025	8/11/2025	5	10	Retaining Wall
5	Paving	Paving	8/11/2025	8/15/2025	5	5	Backfill
6	Architectural Coating	Architectural Coating	7/1/2025	7/1/2025	5	1	No coatings/interior work
7	Restoration	Grading	8/15/2025	8/21/2025	5	5	Site Restoration

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	0	0.00	78	0.48
Paving	Cement and Mortar Mixers	0	0.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Concrete/Industrial Saws	0	0.00	81	0.73
Building Construction	Cranes	0	0.00	231	0.29
Building Construction	Forklifts	1	8.00	89	0.20
Site Preparation	Graders	0	0.00	187	0.41
Paving	Pavers	0	0.00	130	0.42
Paving	Rollers	1	8.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Dozers	0	0.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	0	0.00	97	0.37

Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Concrete/Industrial Saws	1	8.00	81	0.73
Restoration	Concrete/Industrial Saws	0	0.00	81	0.73
Site Preparation	Rubber Tired Dozers	0	0.00	247	0.40
Restoration	Rubber Tired Dozers	0	0.00	247	0.40
Restoration	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Demolition	Excavators	1	8.00	158	0.38
Site Preparation	Excavators	1	8.00	158	0.38
Site Preparation	Pumps	2	8.00	84	0.74
Site Preparation	Generator Sets	1	8.00	84	0.74
Site Preparation	Welders	1	8.00	46	0.45
Site Preparation	Cement and Mortar Mixers	1	8.00	9	0.56
Building Construction	Excavators	1	8.00	158	0.38
Paving	Excavators	1	8.00	158	0.38
Paving	Plate Compactors	1	8.00	8	0.43
Restoration	Excavators	1	8.00	158	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	8	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	3	0.00	0.00	0.00	10.80	7.30	7.30	LD_Mix	HDT_Mix	HHDT
Paving	4	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Restoration	2	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.2 Demolition - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0114	0.0000	0.0114	1.7300e-003	0.0000	1.7300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0103	0.0960	0.1078	2.0000e-004		4.1400e-003	4.1400e-003		3.8600e-003	3.8600e-003	0.0000	17.1905	17.1905	4.4300e-003	0.0000	17.3014
Total	**0.0103**	**0.0960**	**0.1078**	**2.0000e-004**	**0.0114**	**4.1400e-003**	**0.0156**	**1.7300e-003**	**3.8600e-003**	**5.5900e-003**	**0.0000**	**17.1905**	**17.1905**	**4.4300e-003**	**0.0000**	**17.3014**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Off-Road	4.2800e-003	0.0345	0.0555	9.0000e-005		1.4000e-003	1.4000e-003		1.3800e-003	1.3800e-003	0.0000	7.9938	7.9938	8.7000e-004	0.0000	8.0156
Total	**4.2800e-003**	**0.0345**	**0.0555**	**9.0000e-005**		**1.4000e-003**	**1.4000e-003**		**1.3800e-003**	**1.3800e-003**	**0.0000**	**7.9938**	**7.9938**	**8.7000e-004**	**0.0000**	**8.0156**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Grading - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.9300e-003	0.0169	0.0332	5.0000e-005		7.9000e-004	7.9000e-004		7.3000e-004	7.3000e-004	0.0000	4.3224	4.3224	1.4000e-003	0.0000	4.3574
Total	**1.9300e-003**	**0.0169**	**0.0332**	**5.0000e-005**		**7.9000e-004**	**7.9000e-004**		**7.3000e-004**	**7.3000e-004**	**0.0000**	**4.3224**	**4.3224**	**1.4000e-003**	**0.0000**	**4.3574**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Paving - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.1900e-003	0.0106	0.0189	3.0000e-005		4.9000e-004	4.9000e-004		4.5000e-004	4.5000e-004	0.0000	2.4799	2.4799	7.8000e-004	0.0000	2.4995
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.1900e-003**	**0.0106**	**0.0189**	**3.0000e-005**		**4.9000e-004**	**4.9000e-004**		**4.5000e-004**	**4.5000e-004**	**0.0000**	**2.4799**	**2.4799**	**7.8000e-004**	**0.0000**	**2.4995**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.8 Restoration - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.5000e-004	6.4100e-003	0.0138	2.0000e-005		2.9000e-004	2.9000e-004		2.6000e-004	2.6000e-004	0.0000	1.8255	1.8255	5.9000e-004	0.0000	1.8402
Total	**7.5000e-004**	**6.4100e-003**	**0.0138**	**2.0000e-005**	**1.0000e-005**	**2.9000e-004**	**3.0000e-004**	**0.0000**	**2.6000e-004**	**2.6000e-004**	**0.0000**	**1.8255**	**1.8255**	**5.9000e-004**	**0.0000**	**1.8402**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-...	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.560859	0.054324	0.173527	0.105775	0.020803	0.005249	0.024187	0.045831	0.001298	0.001788	0.005336	0.000351	0.000672

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e

Land Use	kWh/yr	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			

General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Road Construction Emissions Model
Data Entry Worksheet

Version 9.0.0

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	EBMUD - Fontain New Pipes	
Construction Start Year	2025	Enter a Year between 2014 and 2040 (inclusive)
Project Type For 4: Other Linear Project Type, please provide project specific off-road equipment population and vehicle trip data	4	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	2.59	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)	1	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the Ione formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	0.87	miles
Total Project Area	0.65	acres
Maximum Area Disturbed/Day	0.13	acres
Water Trucks Used?	2	1. Yes 2. No

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries

Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd^3) (assume 20 if unknown)	Import Volume (yd^3/day)	Export Volume (yd^3/day)
Soil	Grubbing/Land Clearing	20.00	0.00	0.00
	Grading/Excavation	20.00	115.22	142.93
	Drainage/Utilities/Sub-Grade	20.00	115.22	142.93
	Paving	5.00	0.00	0.00
Asphalt	Grubbing/Land Clearing	20.00	0.00	65.25
	Grading/Excavation	20.00	0.00	0.00
	Drainage/Utilities/Sub-Grade	20.00	0.00	0.00
	Paving	5.00	32.63	0.00

Mitigation Options

On-road Fleet Emissions Mitigation	No Mitigation	Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer
Off-road Equipment Emissions Mitigation	No Mitigation	Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (http://www.airquality.org/Businesses/CEQA-Land-Use-Planning/Mitigation). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

	EF source
on-road	EMFAC2017

The remaining sections of this sheet contain areas that require modification when 'Other Project Type' is selected.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing	0.36	0.26		1/1/2025
Grading/Excavation	1.14	1.04		1/13/2025
Drainage/Utilities/Sub-Grade	0.73	0.91		2/17/2025
Paving	0.36	0.39		3/12/2025
Totals (Months)		3		

Program Calculated Activity Fractions	
start date	end date
1/1/2025	1/12/2025
1/13/2025	2/16/2025
2/17/2025	3/11/2025
3/12/2025	3/23/2025

Please note: You have entered a different number of months than the project length shown in cell D16.
Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing	0.00		0	0	0.00
Miles/round trip: Grading/Excavation	20.00		11	13	220.00
Miles/round trip: Drainage/Utilities/Sub-Grade	20.00		11	13	220.00
Miles/round trip: Paving	0.00		0	0	0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.04	0.43	3.46	0.12	0.05	0.02	1,682.27	0.00	0.26	1,761.12
Grading/Excavation (grams/mile)	0.04	0.43	3.46	0.12	0.05	0.02	1,682.27	0.00	0.26	1,761.12
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.43	3.46	0.12	0.05	0.02	1,682.27	0.00	0.26	1,761.12
Paving (grams/mile)	0.04	0.43	3.46	0.12	0.05	0.02	1,682.27	0.00	0.26	1,761.12
Grubbing/Land Clearing (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.02	0.21	1.79	0.06	0.03	0.01	815.93	0.00	0.13	854.17
Tons per const. Period - Grading/Excavation	0.00	0.00	0.02	0.00	0.00	0.00	10.20	0.00	0.00	10.68
Pounds per day - Drainage/Utilities/Sub-Grade	0.02	0.21	1.79	0.06	0.03	0.01	815.93	0.00	0.13	854.17
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.01	0.00	0.00	0.00	6.53	0.00	0.00	6.83
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

	Months
Grubbing/Land Clearing	0.36
Grading/Excavation	1.14
Drainage/Utilities/Sub-Grade	0.73
Paving	0.36

Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.04	0.00	0.00	0.00	16.73	0.00	0.00	17.51

Note: Asphalt Hauling emission default values can be overridden in cells D91 through D94, and F91 through F94.

Asphalt Hauling Emissions	User Override of	Program Estimate of	User Override of Truck	Default Values	Calculated
User Input	Miles/Round Trip	Miles/Round Trip	Round Trips/Day	Round Trips/Day	Daily VMT
Miles/round trip: Grubbing/Land Clearing	7.30			4	29.20
Miles/round trip: Grading/Excavation				0	0.00
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00
Miles/round trip: Paving	7.30			7	51.10

Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile)	0.04	0.43	3.46	0.12	0.05	0.02	1,682.27	0.00	0.26	1,761.12
Grading/Excavation (grams/mile)	0.04	0.43	3.46	0.12	0.05	0.02	1,682.27	0.00	0.26	1,761.12
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.43	3.46	0.12	0.05	0.02	1,682.27	0.00	0.26	1,761.12
Paving (grams/mile)	0.04	0.43	3.46	0.12	0.05	0.02	1,682.27	0.00	0.26	1,761.12
Grubbing/Land Clearing (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.03	0.26	0.01	0.00	0.00	108.30	0.00	0.02	113.37
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.43	0.00	0.00	0.45
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.05	0.46	0.01	0.01	0.00	189.52	0.00	0.03	198.40
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.76	0.00	0.00	0.79
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	1.19	0.00	0.00	1.25

Note: Worker commute default values can be overridden in cells D121 through D126.

Worker Commute Emissions	User Override of Worker			
User Input	Commute Default Values	Default Values		
Miles/ one-way trip	20		Calculated	Calculated
One-way trips/day	2		Daily Trips	Daily VMT
No. of employees: Grubbing/Land Clearing	19		38	760.00
No. of employees: Grading/Excavation	19		38	760.00
No. of employees: Drainage/Utilities/Sub-Grade	19		38	760.00
No. of employees: Paving	19		38	760.00

Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile)	0.01	0.78	0.06	0.05	0.02	0.00	295.84	0.00	0.01	297.52
Grading/Excavation (grams/mile)	0.01	0.78	0.06	0.05	0.02	0.00	295.84	0.00	0.01	297.52
Draining/Utilities/Sub-Grade (grams/mile)	0.01	0.78	0.06	0.05	0.02	0.00	295.84	0.00	0.01	297.52
Paving (grams/mile)	0.01	0.78	0.06	0.05	0.02	0.00	295.84	0.00	0.01	297.52
Grubbing/Land Clearing (grams/trip)	0.93	2.56	0.25	0.00	0.00	0.00	63.73	0.06	0.03	73.77
Grading/Excavation (grams/trip)	0.93	2.56	0.25	0.00	0.00	0.00	63.73	0.06	0.03	73.77
Draining/Utilities/Sub-Grade (grams/trip)	0.93	2.56	0.25	0.00	0.00	0.00	63.73	0.06	0.03	73.77
Paving (grams/trip)	0.93	2.56	0.25	0.00	0.00	0.00	63.73	0.06	0.03	73.77
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.10	1.51	0.11	0.08	0.03	0.00	501.02	0.01	0.01	504.68
Tons per const. Period - Grubbing/Land Clearing	0.00	0.01	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.02
Pounds per day - Grading/Excavation	0.10	1.51	0.11	0.08	0.03	0.00	501.02	0.01	0.01	504.68
Tons per const. Period - Grading/Excavation	0.00	0.02	0.00	0.00	0.00	0.00	6.26	0.00	0.00	6.31
Pounds per day - Drainage/Utilities/Sub-Grade	0.10	1.51	0.11	0.08	0.03	0.00	501.02	0.01	0.01	504.68
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.01	0.00	0.00	0.00	0.00	4.01	0.00	0.00	4.04
Pounds per day - Paving	0.10	1.51	0.11	0.08	0.03	0.00	501.02	0.01	0.01	504.68
Tons per const. Period - Paving	0.00	0.01	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.02
Total tons per construction project	0.00	0.04	0.00	0.00	0.00	0.00	14.28	0.00	0.00	14.38

Note: Water Truck default values can be overridden in cells D153 through D156, I153 through I156, and F153 through F156.

Water Truck Emissions	User Override of	Program Estimate of	User Override of Truck	Default Values	Calculated	User Override of	Default Values	Calculated
User Input	Default # Water Trucks	Number of Water Trucks	Round Trips/Vehicle/Day	Round Trips/Vehicle/Day	Trips/day	Miles/Round Trip	Miles/Round Trip	Daily VMT
Grubbing/Land Clearing - Exhaust								0.00
Grading/Excavation - Exhaust								0.00
Drainage/Utilities/Subgrade								0.00
Paving								0.00

Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile)	0.04	0.43	3.46	0.12	0.05	0.02	1,682.27	0.00	0.26	1,761.12
Grading/Excavation (grams/mile)	0.04	0.43	3.46	0.12	0.05	0.02	1,682.27	0.00	0.26	1,761.12
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.43	3.46	0.12	0.05	0.02	1,682.27	0.00	0.26	1,761.12
Paving (grams/mile)	0.04	0.43	3.46	0.12	0.05	0.02	1,682.27	0.00	0.26	1,761.12
Grubbing/Land Clearing (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Fugitive dust default values can be overridden in cells D183 through D185.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing			2.60	0.01	0.54	0.00
Fugitive Dust - Grading/Excavation			2.60	0.03	0.54	0.01
Fugitive Dust - Drainage/Utilities/Subgrade			2.60	0.02	0.54	0.00

Values in cells D195 through D228, D246 through D279, D297 through D330, and D348 through D381 are required when 'Other Project Type' is selected.

Off-Road Equipment Emissions

Grubbing/Land Clearing	Default Number of Vehicles	Mitigation Option Override of	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles	*Program-estimate*	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Concrete/Industrial Saws	0.30	3.64	2.27	0.09	0.09	0.01	592.67	0.03	0.00	594.65
0.00			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Excavators	0.17	3.26	1.22	0.06	0.06	0.01	500.34	0.16	0.00	505.73
0.00			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing	pounds per day	0.46	6.90	3.49	0.15	0.15	0.01	1,093.00	0.19	0.01	1,100.38
Grubbing/Land Clearing	tons per phase	0.00	0.03	0.01	0.00	0.00	0.00	4.37	0.00	0.00	4.40

Grading/Excavation	Default Number of Vehicles	Mitigation Option Override of	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles	*Program-estimate*	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Excavators	0.17	3.26	1.22	0.06	0.06	0.01	500.34	0.16	0.00	505.73
0.00			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

0.00			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Tractors/Loaders/Backhoes	0.13	2.23	1.34	0.05	0.05	0.00	302.06	0.10	0.00	305.30
0.00			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grading/Excavation		pounds per day	0.30	5.49	2.56	0.11	0.10	0.01	802.39	0.26	0.01	811.04
Grading/Excavation		tons per phase	0.00	0.07	0.03	0.00	0.00	0.00	10.03	0.00	0.00	10.14

Drainage/Utilities/Subgrade

Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option: Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Cement and Mortar Mixers	0.06	0.31	0.37	0.01	0.01	0.00	50.52	0.01	0.00	50.77
0.00			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Cranes	0.31	1.74	3.17	0.13	0.12	0.01	558.83	0.18	0.01	564.85
0.00			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Excavators	0.17	3.26	1.22	0.06	0.06	0.01	500.34	0.16	0.00	505.73
1.00			Model Default Tier	Forklifts	0.09	1.13	0.82	0.04	0.04	0.00	148.03	0.05	0.00	149.63
1.00			Model Default Tier	Generator Sets	0.27	3.66	2.40	0.10	0.10	0.01	623.04	0.02	0.00	625.01
0.00			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Tractors/Loaders/Backhoes	0.13	2.23	1.34	0.05	0.05	0.00	302.06	0.10	0.00	305.30
0.00			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Welders	0.22	1.65	1.34	0.04	0.04	0.00	207.48	0.02	0.00	208.49

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Drainage/Utilities/Sub-Grade		pounds per day	1.24	13.98	10.65	0.44	0.42	0.03	2,390.28	0.54	0.02	2,409.78
Drainage/Utilities/Sub-Grade		tons per phase	0.01	0.11	0.09	0.00	0.00	0.00	19.12	0.00	0.00	19.28

Paving

Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option: Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Cement and Mortar Mixers	0.06	0.31	0.37	0.01	0.01	0.00	50.52	0.01	0.00	50.77
0.00			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

0.00			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Pavers	0.17	2.90	1.58	0.07	0.07	0.00	454.99	0.15	0.00	459.90
1.00			Model Default Tier	Paving Equipment	0.15	2.55	1.26	0.06	0.06	0.00	394.32	0.13	0.00	398.57
0.00			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Rollers	0.14	1.85	1.44	0.07	0.07	0.00	254.06	0.08	0.00	256.80
0.00			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Tractors/Loaders/Backhoes	0.13	2.23	1.34	0.05	0.05	0.00	302.06	0.10	0.00	305.30
0.00			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving	pounds per day		0.65	9.83	5.99	0.28	0.26	0.02	1,455.95	0.46	0.01	1,471.35
	Paving	tons per phase		0.00	0.04	0.02	0.00	0.00	0.00	5.82	0.00	0.00	5.89
Total Emissions all Phases (tons per construction period) =>				0.02	0.25	0.16	0.01	0.01	0.00	39.35	0.01	0.00	39.70

Equipment default values for horsepower and hours/day can be overridden in cells D403 through D436 and F403 through F436.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day	Horsepower	Load Factor adjustment
Aerial Lifts		63		8	63.00	0.31
Air Compressors		78		8	78.00	0.48
Bore/Drill Rigs		221		8	221.00	0.50
Cement and Mortar Mixers		9		8	9.00	0.56
Concrete/Industrial Saws		81		8	81.00	0.73
Cranes		231		8	231.00	0.29
Crawler Tractors		212		8	212.00	0.43
Crushing/Proc. Equipment		85		8	85.00	0.78
Excavators		158		8	158.00	0.38
Forklifts		89		8	89.00	0.20
Generator Sets		84		8	84.00	0.74
Graders		187		8	187.00	0.41
Off-Highway Tractors		124		8	124.00	0.44
Off-Highway Trucks		402		8	402.00	0.38
Other Construction Equipment		172		8	172.00	0.42
Other General Industrial Equipment		88		8	88.00	0.34
Other Material Handling Equipment		168		8	168.00	0.40
Pavers		130		8	130.00	0.42
Paving Equipment		132		8	132.00	0.36
Plate Compactors		8		8	8.00	0.43
Pressure Washers		13		8	13.00	0.30
Pumps		84		8	84.00	0.74
Rollers		80		8	80.00	0.38
Rough Terrain Forklifts		100		8	100.00	0.40
Rubber Tired Dozers		247		8	247.00	0.40
Rubber Tired Loaders		203		8	203.00	0.36
Scrapers		367		8	367.00	0.48
Signal Boards		6		8	6.00	0.82
Skid Steer Loaders		65		8	65.00	0.37
Surfacing Equipment		263		8	263.00	0.30
Sweepers/Scrubbers		64		8	64.00	0.46
Tractors/Loaders/Backhoes		97		8	97.00	0.37
Trenchers		78		8	78.00	0.50
Welders		46		8	46.00	0.45

END OF DATA ENTRY SHEET

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> EBMUD - Fontain New Pipes

Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.56	8.45	3.87	2.84	0.24	2.60	0.72	0.18	0.54	0.02	1,702.32	0.20	0.04	1,718.43
Grading/Excavation	0.42	7.21	4.46	2.85	0.25	2.60	0.70	0.16	0.54	0.02	2,119.34	0.27	0.15	2,169.89
Drainage/Utilities/Sub-Grade	1.36	15.70	12.55	3.18	0.58	2.60	1.02	0.48	0.54	0.04	3,707.23	0.55	0.16	3,768.64
Paving	0.75	11.39	6.57	0.37	0.37	0.00	0.29	0.29	0.00	0.02	2,146.48	0.47	0.05	2,174.43
Maximum (pounds/day)	1.36	15.70	12.55	3.18	0.58	2.60	1.02	0.48	0.54	0.04	3,707.23	0.55	0.16	3,768.64
Total (tons/construction project)	0.02	0.30	0.20	0.07	0.01	0.06	0.02	0.01	0.01	0.00	71.54	0.01	0.00	72.84

Notes:

Project Start Year ->	2025
Project Length (months) ->	3
Total Project Area (acres) ->	1
Maximum Area Disturbed/Day (acres) ->	0
Water Truck Used? ->	No

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	65	0	29	760	0
Grading/Excavation	258	0	220	0	760	0
Drainage/Utilities/Sub-Grade	258	0	220	0	760	0
Paving	0	33	0	51	760	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> EBMUD - Fontain New Pipes

Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.03	0.02	0.01	0.00	0.01	0.00	0.00	0.00	0.00	6.81	0.00	0.00	6.24
Grading/Excavation	0.01	0.09	0.06	0.04	0.00	0.03	0.01	0.00	0.01	0.00	26.49	0.00	0.00	24.61
Drainage/Utilities/Sub-Grade	0.01	0.13	0.10	0.03	0.00	0.02	0.01	0.00	0.00	0.00	29.66	0.00	0.00	27.35
Paving	0.00	0.05	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.59	0.00	0.00	7.89
Maximum (tons/phase)	0.01	0.13	0.10	0.04	0.00	0.03	0.01	0.00	0.01	0.00	29.66	0.00	0.00	27.35
Total (tons/construction project)	0.02	0.30	0.20	0.07	0.01	0.06	0.02	0.01	0.01	0.00	71.54	0.01	0.00	66.08

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

New Fontaine PP Facility - Alameda County, Annual

New Fontaine PP Facility w/ Standard Conditions of Approval

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	2.25	1000sqft	0.25	2,250.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2025
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	210	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Per latest PG&E report

Land Use - Per New Fontaine PP Data Request

Construction Phase - Per Construction Data Request New FontainePP. Assume trenching = grading. Assume Interior and extior are concurent. Assume landscaping after paving. Assume retaining wall will be built after site grading

Off-road Equipment - Per Construction data Sheet New FontainePP

Off-road Equipment - Per Construction data Sheet New FontainePP, electrified cranes and no generator sets

Off-road Equipment - Per Construction data Sheet New FontainePP

Off-road Equipment - Per Construction data Sheet New FontainePP

Off-road Equipment - Per Construction data Sheet New FontainePP

Off-road Equipment - Per Construction data Sheet New FontainePP

Off-road Equipment - Per Construction data Sheet New FontainePP

Off-road Equipment - Per Construction data Sheet New FontainePP

Off-road Equipment - Assume Trenching Phase that parallels Grading Phase

Trips and VMT - Per Construction data Sheet New FontainePP. 5 CY per asphalt delivery

Grading - Per Construction data Sheet New FontainePP

Vehicle Trips - Assume 2 trips every other week

Vehicle Emission Factors - EMFAC2017 2025 Alameda Co

Vehicle Emission Factors -

Vehicle Emission Factors -

Energy Use -

Water And Wastewater - WWTF

Construction Off-road Equipment Mitigation - T4 Final Mitigation, Enhanced Fug Dust BMPS

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
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tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
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tblConstructionPhase	NumDays	1.00	10.00
tblConstructionPhase	NumDays	1.00	5.00
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tblFleetMix	LDT2	0.19	0.17
tblFleetMix	LHD1	0.01	0.02
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tblFleetMix	MCY	5.4270e-003	5.3360e-003
tblFleetMix	MDV	0.11	0.11
tblFleetMix	MH	6.7900e-004	6.7200e-004

tblFleetMix	MHD	0.03	0.02
tblFleetMix	OBUS	2.2300e-003	1.2980e-003
tblFleetMix	UBUS	2.2770e-003	1.7880e-003
tblGrading	AcresOfGrading	5.00	0.00
tblGrading	AcresOfGrading	1.50	0.50
tblGrading	MaterialExported	0.00	600.00
tblGrading	MaterialImported	0.00	200.00
tblLandUse	LotAcreage	0.05	0.25
tblOffRoadEquipment	HorsePower	158.00	187.00
tblOffRoadEquipment	HorsePower	89.00	187.00
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tblOffRoadEquipment	UsageHours	6.00	8.00
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tblTripsAndVMT	HaulingTripLength	20.00	7.30

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tblTripsAndVMT	HaulingTripNumber	79.00	0.00
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tblVehicleEF	LDT1	0.21	0.15
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tblVehicleEF	LDT1	0.02	0.02
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tblVehicleEF	LDT2	0.04	0.06
tblVehicleEF	LDT2	0.01	0.01
tblVehicleEF	LDT2	0.06	0.42
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tblVehicleEF	LHD1	2.2020e-003	1.6730e-003
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tblVehicleEF	LHD2	0.06	0.26
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tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	4.4100e-004	5.7200e-004
tblVehicleEF	LHD2	0.12	0.12
tblVehicleEF	LHD2	0.06	0.26
tblVehicleEF	LHD2	0.09	0.05
tblVehicleEF	MCY	0.47	0.34
tblVehicleEF	MCY	0.16	0.26
tblVehicleEF	MCY	19.41	19.52
tblVehicleEF	MCY	10.30	9.16
tblVehicleEF	MCY	175.52	215.13
tblVehicleEF	MCY	45.05	61.18
tblVehicleEF	MCY	1.16	1.16
tblVehicleEF	MCY	0.32	0.27
tblVehicleEF	MCY	2.1670e-003	2.1260e-003

tblVehicleEF	MCY	3.6900e-003	3.0420e-003
tblVehicleEF	MCY	2.0250e-003	1.9870e-003
tblVehicleEF	MCY	3.4710e-003	2.8590e-003
tblVehicleEF	MCY	0.80	1.59
tblVehicleEF	MCY	0.71	0.70
tblVehicleEF	MCY	0.49	0.97
tblVehicleEF	MCY	2.29	2.30
tblVehicleEF	MCY	0.55	2.00
tblVehicleEF	MCY	2.23	1.97
tblVehicleEF	MCY	2.1400e-003	2.1290e-003
tblVehicleEF	MCY	6.8400e-004	6.0500e-004
tblVehicleEF	MCY	0.80	1.59
tblVehicleEF	MCY	0.71	0.70
tblVehicleEF	MCY	0.49	0.97
tblVehicleEF	MCY	2.85	2.85
tblVehicleEF	MCY	0.55	2.00
tblVehicleEF	MCY	2.42	2.14
tblVehicleEF	MDV	7.9410e-003	2.9420e-003
tblVehicleEF	MDV	0.01	0.07
tblVehicleEF	MDV	0.89	0.69
tblVehicleEF	MDV	2.41	2.92
tblVehicleEF	MDV	425.55	364.81
tblVehicleEF	MDV	96.55	78.19
tblVehicleEF	MDV	0.11	0.06
tblVehicleEF	MDV	0.20	0.28
tblVehicleEF	MDV	1.8340e-003	1.4260e-003
tblVehicleEF	MDV	2.4550e-003	1.7640e-003
tblVehicleEF	MDV	1.6900e-003	1.3150e-003
tblVehicleEF	MDV	2.2570e-003	1.6220e-003
tblVehicleEF	MDV	0.05	0.06

tblVehicleEF	MDV	0.16	0.13
tblVehicleEF	MDV	0.06	0.07
tblVehicleEF	MDV	0.02	0.01
tblVehicleEF	MDV	0.10	0.43
tblVehicleEF	MDV	0.18	0.33
tblVehicleEF	MDV	4.2580e-003	3.4980e-003
tblVehicleEF	MDV	1.0070e-003	7.5100e-004
tblVehicleEF	MDV	0.05	0.06
tblVehicleEF	MDV	0.16	0.13
tblVehicleEF	MDV	0.06	0.07
tblVehicleEF	MDV	0.03	0.02
tblVehicleEF	MDV	0.10	0.43
tblVehicleEF	MDV	0.19	0.36
tblVehicleEF	MH	0.02	8.3300e-003
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	1.58	0.77
tblVehicleEF	MH	5.19	1.98
tblVehicleEF	MH	1,204.53	1,474.91
tblVehicleEF	MH	58.69	17.92
tblVehicleEF	MH	1.14	1.17
tblVehicleEF	MH	0.78	0.25
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	1.0630e-003	2.5400e-004
tblVehicleEF	MH	3.2150e-003	3.2720e-003
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	9.7800e-004	2.3300e-004
tblVehicleEF	MH	0.64	0.49
tblVehicleEF	MH	0.06	0.05
tblVehicleEF	MH	0.25	0.20

tblVehicleEF	MH	0.08	0.05
tblVehicleEF	MH	0.02	1.12
tblVehicleEF	MH	0.30	0.09
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	6.7700e-004	1.7700e-004
tblVehicleEF	MH	0.64	0.49
tblVehicleEF	MH	0.06	0.05
tblVehicleEF	MH	0.25	0.20
tblVehicleEF	MH	0.10	0.07
tblVehicleEF	MH	0.02	1.12
tblVehicleEF	MH	0.33	0.10
tblVehicleEF	MHD	0.02	2.6270e-003
tblVehicleEF	MHD	3.1500e-003	1.1760e-003
tblVehicleEF	MHD	0.04	6.3760e-003
tblVehicleEF	MHD	0.27	0.35
tblVehicleEF	MHD	0.28	0.18
tblVehicleEF	MHD	3.80	0.72
tblVehicleEF	MHD	170.61	71.79
tblVehicleEF	MHD	1,177.05	1,024.67
tblVehicleEF	MHD	43.34	6.41
tblVehicleEF	MHD	0.47	0.40
tblVehicleEF	MHD	1.11	1.45
tblVehicleEF	MHD	13.30	1.84
tblVehicleEF	MHD	1.0200e-004	2.7100e-004
tblVehicleEF	MHD	3.0930e-003	6.9590e-003
tblVehicleEF	MHD	5.9300e-004	7.3000e-005
tblVehicleEF	MHD	9.8000e-005	2.5900e-004
tblVehicleEF	MHD	2.9550e-003	6.6530e-003
tblVehicleEF	MHD	5.4600e-004	6.7000e-005
tblVehicleEF	MHD	5.7600e-004	2.3300e-004

tblVehicleEF	MHD	0.03	0.01
tblVehicleEF	MHD	0.02	0.01
tblVehicleEF	MHD	3.5000e-004	1.4200e-004
tblVehicleEF	MHD	0.04	0.01
tblVehicleEF	MHD	0.01	0.07
tblVehicleEF	MHD	0.23	0.03
tblVehicleEF	MHD	1.6370e-003	6.8000e-004
tblVehicleEF	MHD	0.01	9.7420e-003
tblVehicleEF	MHD	5.0000e-004	6.3000e-005
tblVehicleEF	MHD	5.7600e-004	2.3300e-004
tblVehicleEF	MHD	0.03	0.01
tblVehicleEF	MHD	0.03	0.02
tblVehicleEF	MHD	3.5000e-004	1.4200e-004
tblVehicleEF	MHD	0.05	0.02
tblVehicleEF	MHD	0.01	0.07
tblVehicleEF	MHD	0.25	0.04
tblVehicleEF	OBUS	0.01	8.3240e-003
tblVehicleEF	OBUS	6.6370e-003	5.7470e-003
tblVehicleEF	OBUS	0.03	0.02
tblVehicleEF	OBUS	0.24	0.60
tblVehicleEF	OBUS	0.46	0.64
tblVehicleEF	OBUS	5.23	2.37
tblVehicleEF	OBUS	111.04	87.10
tblVehicleEF	OBUS	1,288.37	1,402.18
tblVehicleEF	OBUS	65.70	18.77
tblVehicleEF	OBUS	0.24	0.35
tblVehicleEF	OBUS	0.94	1.25
tblVehicleEF	OBUS	3.00	0.85
tblVehicleEF	OBUS	2.2000e-005	1.1600e-004
tblVehicleEF	OBUS	2.8390e-003	7.2930e-003

tblVehicleEF	OBUS	8.8600e-004	1.9300e-004
tblVehicleEF	OBUS	2.1000e-005	1.1100e-004
tblVehicleEF	OBUS	2.6950e-003	6.9590e-003
tblVehicleEF	OBUS	8.1400e-004	1.7700e-004
tblVehicleEF	OBUS	1.1640e-003	1.4520e-003
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.03	0.05
tblVehicleEF	OBUS	5.5500e-004	6.9300e-004
tblVehicleEF	OBUS	0.05	0.03
tblVehicleEF	OBUS	0.03	0.27
tblVehicleEF	OBUS	0.32	0.11
tblVehicleEF	OBUS	1.0710e-003	8.2900e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	7.4900e-004	1.8600e-004
tblVehicleEF	OBUS	1.1640e-003	1.4520e-003
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.04	0.07
tblVehicleEF	OBUS	5.5500e-004	6.9300e-004
tblVehicleEF	OBUS	0.06	0.05
tblVehicleEF	OBUS	0.03	0.27
tblVehicleEF	OBUS	0.35	0.12
tblVehicleEF	SBUS	0.83	0.08
tblVehicleEF	SBUS	0.01	4.1020e-003
tblVehicleEF	SBUS	0.06	6.7410e-003
tblVehicleEF	SBUS	10.93	3.21
tblVehicleEF	SBUS	0.80	0.33
tblVehicleEF	SBUS	10.51	0.98
tblVehicleEF	SBUS	942.53	343.69
tblVehicleEF	SBUS	913.72	965.10
tblVehicleEF	SBUS	75.80	5.66

tblVehicleEF	SBUS	5.18	2.68
tblVehicleEF	SBUS	2.16	3.11
tblVehicleEF	SBUS	8.57	1.17
tblVehicleEF	SBUS	4.2610e-003	2.5480e-003
tblVehicleEF	SBUS	9.6910e-003	0.01
tblVehicleEF	SBUS	0.01	0.02
tblVehicleEF	SBUS	1.3750e-003	8.4000e-005
tblVehicleEF	SBUS	4.0770e-003	2.4380e-003
tblVehicleEF	SBUS	2.4230e-003	2.6070e-003
tblVehicleEF	SBUS	0.01	0.02
tblVehicleEF	SBUS	1.2640e-003	7.8000e-005
tblVehicleEF	SBUS	3.0300e-003	4.3100e-004
tblVehicleEF	SBUS	0.03	4.2120e-003
tblVehicleEF	SBUS	1.30	0.36
tblVehicleEF	SBUS	1.4980e-003	2.0800e-004
tblVehicleEF	SBUS	0.08	0.05
tblVehicleEF	SBUS	0.02	0.03
tblVehicleEF	SBUS	0.52	0.04
tblVehicleEF	SBUS	9.3790e-003	3.2810e-003
tblVehicleEF	SBUS	8.8930e-003	9.2580e-003
tblVehicleEF	SBUS	9.3900e-004	5.6000e-005
tblVehicleEF	SBUS	3.0300e-003	4.3100e-004
tblVehicleEF	SBUS	0.03	4.2120e-003
tblVehicleEF	SBUS	1.89	0.52
tblVehicleEF	SBUS	1.4980e-003	2.0800e-004
tblVehicleEF	SBUS	0.10	0.06
tblVehicleEF	SBUS	0.02	0.03
tblVehicleEF	SBUS	0.57	0.04
tblVehicleEF	UBUS	0.26	1.15
tblVehicleEF	UBUS	0.04	1.0340e-003

tblVehicleEF	UBUS	6.18	8.47
tblVehicleEF	UBUS	7.78	0.07
tblVehicleEF	UBUS	2,169.74	1,640.60
tblVehicleEF	UBUS	84.13	0.82
tblVehicleEF	UBUS	13.74	0.72
tblVehicleEF	UBUS	16.04	8.7940e-003
tblVehicleEF	UBUS	0.64	0.07
tblVehicleEF	UBUS	0.01	0.03
tblVehicleEF	UBUS	0.28	5.2480e-003
tblVehicleEF	UBUS	9.8900e-004	7.0000e-006
tblVehicleEF	UBUS	0.27	0.03
tblVehicleEF	UBUS	3.0000e-003	7.9020e-003
tblVehicleEF	UBUS	0.27	5.0200e-003
tblVehicleEF	UBUS	9.0900e-004	6.0000e-006
tblVehicleEF	UBUS	2.3960e-003	5.7000e-005
tblVehicleEF	UBUS	0.05	8.4400e-004
tblVehicleEF	UBUS	1.2220e-003	3.9000e-005
tblVehicleEF	UBUS	0.71	0.02
tblVehicleEF	UBUS	0.01	5.0210e-003
tblVehicleEF	UBUS	0.59	4.5070e-003
tblVehicleEF	UBUS	0.02	0.01
tblVehicleEF	UBUS	9.8100e-004	8.0000e-006
tblVehicleEF	UBUS	2.3960e-003	5.7000e-005
tblVehicleEF	UBUS	0.05	8.4400e-004
tblVehicleEF	UBUS	1.2220e-003	3.9000e-005
tblVehicleEF	UBUS	1.03	1.17
tblVehicleEF	UBUS	0.01	5.0210e-003
tblVehicleEF	UBUS	0.65	4.9340e-003
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00

tblVehicleTrips	WD_TR	6.97	0.20
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2025	0.0271	0.1427	0.7422	1.1700e-003	8.4600e-003	1.7700e-003	0.0102	4.2900e-003	1.7700e-003	6.0600e-003	0.0000	100.6246	100.6246	0.0248	0.0000	101.2433
Maximum	**0.0271**	**0.1427**	**0.7422**	**1.1700e-003**	**8.4600e-003**	**1.7700e-003**	**0.0102**	**4.2900e-003**	**1.7700e-003**	**6.0600e-003**	**0.0000**	**100.6246**	**100.6246**	**0.0248**	**0.0000**	**101.2433**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**62.99**	**73.18**	**-10.93**	**0.00**	**80.50**	**91.63**	**84.15**	**80.47**	**91.12**	**85.54**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2025	3-31-2025	0.3535	0.0758
2	4-1-2025	6-30-2025	0.2507	0.0935
		Highest	0.3535	0.0935

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	9.9600e-003	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005
Energy	3.0000e-004	2.7300e-003	2.2900e-003	2.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	4.5920	4.5920	2.8000e-004	1.0000e-004	4.6290
Mobile	1.2000e-004	3.0000e-004	1.0100e-003	0.0000	3.5000e-004	0.0000	3.5000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3446	0.3446	1.0000e-005	0.0000	0.3449
Waste						0.0000	0.0000		0.0000	0.0000	0.5663	0.0000	0.5663	0.0335	0.0000	1.4031
Water						0.0000	0.0000		0.0000	0.0000	0.1841	0.2682	0.4523	6.7000e-004	4.1000e-004	0.5906
Total	**0.0104**	**3.0300e-003**	**3.3200e-003**	**2.0000e-005**	**3.5000e-004**	**2.1000e-004**	**5.6000e-004**	**9.0000e-005**	**2.1000e-004**	**3.1000e-004**	**0.7504**	**5.2048**	**5.9552**	**0.0344**	**5.1000e-004**	**6.9677**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2025	1/2/2025	5	2	
2	Site Preparation	Site Preparation	1/3/2025	1/7/2025	5	3	
3	Grading	Grading	1/8/2025	1/21/2025	5	10	
4	Trenching	Trenching	1/8/2025	1/21/2025	5	10	
5	Retaining Wall	Site Preparation	1/22/2025	2/4/2025	5	10	
6	Building Construction	Building Construction	1/22/2025	6/25/2025	5	111	
7	Architectural Coating	Architectural Coating	3/3/2025	6/23/2025	5	81	
8	Paving	Paving	6/7/2025	6/20/2025	5	10	
9	Landscaping/Fencing	Site Preparation	6/20/2025	6/26/2025	5	5	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 3,375; Non-Residential Outdoor: 1,125; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	1	8.00	158	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Trenching	Concrete/Industrial Saws	1	8.00	81	0.73
Trenching	Excavators	1	8.00	158	0.38
Trenching	Graders	1	8.00	187	0.41
Trenching	Rubber Tired Dozers	1	8.00	247	0.40
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Retaining Wall	Excavators	1	8.00	187	0.41
Retaining Wall	Graders	1	8.00	187	0.41
Retaining Wall	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Cranes	0	4.00	231	0.29
Building Construction	Forklifts	1	8.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Architectural Coating	Aerial Lifts	1	8.00	63	0.31
Architectural Coating	Air Compressors	1	8.00	78	0.48
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Landscaping/Fencing	Forklifts	1	8.00	187	0.41
Landscaping/Fencing	Graders	1	8.00	187	0.41
Landscaping/Fencing	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	5	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	5	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Retaining Wall	3	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	3	0.00	0.00	0.00	10.80	7.30	7.30	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	0.00	0.00	0.00	10.80	7.30	7.30	LD_Mix	HDT_Mix	HHDT
Landscaping/Fencing	3	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Tier 4 Engines for Construction Equipment

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.7000e-004	1.1600e-003	0.0140	2.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	2.0158	2.0158	5.0000e-004	0.0000	2.0283
Total	**2.7000e-004**	**1.1600e-003**	**0.0140**	**2.0000e-005**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**2.0158**	**2.0158**	**5.0000e-004**	**0.0000**	**2.0283**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.8100e-003	0.0000	1.8100e-003	9.7000e-004	0.0000	9.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.4000e-004	1.4500e-003	0.0137	3.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	2.4076	2.4076	7.8000e-004	0.0000	2.4270
Total	**3.4000e-004**	**1.4500e-003**	**0.0137**	**3.0000e-005**	**1.8100e-003**	**4.0000e-005**	**1.8500e-003**	**9.7000e-004**	**4.0000e-005**	**1.0100e-003**	**0.0000**	**2.4076**	**2.4076**	**7.8000e-004**	**0.0000**	**2.4270**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Grading - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Fugitive Dust					5.8700e-003	0.0000	5.8700e-003	3.2300e-003	0.0000	3.2300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7500e-003	7.5800e-003	0.0846	1.5000e-004		2.3000e-004	2.3000e-004		2.3000e-004	2.3000e-004	0.0000	12.9830	12.9830	3.4500e-003	0.0000	13.0692
Total	**1.7500e-003**	**7.5800e-003**	**0.0846**	**1.5000e-004**	**5.8700e-003**	**2.3000e-004**	**6.1000e-003**	**3.2300e-003**	**2.3000e-004**	**3.4600e-003**	**0.0000**	**12.9830**	**12.9830**	**3.4500e-003**	**0.0000**	**13.0692**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Trenching - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.7500e-003	7.5800e-003	0.0846	1.5000e-004		2.3000e-004	2.3000e-004		2.3000e-004	2.3000e-004	0.0000	12.9830	12.9830	3.4500e-003	0.0000	13.0692
Total	**1.7500e-003**	**7.5800e-003**	**0.0846**	**1.5000e-004**		**2.3000e-004**	**2.3000e-004**		**2.3000e-004**	**2.3000e-004**	**0.0000**	**12.9830**	**12.9830**	**3.4500e-003**	**0.0000**	**13.0692**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Retaining Wall - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.2000e-004	0.0000	5.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0000e-003	4.3400e-003	0.0415	8.0000e-005		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	7.1727	7.1727	2.3200e-003	0.0000	7.2307
Total	**1.0000e-003**	**4.3400e-003**	**0.0415**	**8.0000e-005**	**5.2000e-004**	**1.3000e-004**	**6.5000e-004**	**6.0000e-005**	**1.3000e-004**	**1.9000e-004**	**0.0000**	**7.1727**	**7.1727**	**2.3200e-003**	**0.0000**	**7.2307**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Building Construction - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.5800e-003	0.0694	0.2775	4.0000e-004		5.8000e-004	5.8000e-004		5.8000e-004	5.8000e-004	0.0000	33.1075	33.1075	8.3200e-003	0.0000	33.3156
Total	**5.5800e-003**	**0.0694**	**0.2775**	**4.0000e-004**		**5.8000e-004**	**5.8000e-004**		**5.8000e-004**	**5.8000e-004**	**0.0000**	**33.1075**	**33.1075**	**8.3200e-003**	**0.0000**	**33.3156**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.8 Architectural Coating - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0117					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2800e-003	0.0452	0.1506	2.3000e-004		3.3000e-004	3.3000e-004		3.3000e-004	3.3000e-004	0.0000	19.7624	19.7624	2.6800e-003	0.0000	19.8295
Total	**0.0150**	**0.0452**	**0.1506**	**2.3000e-004**		**3.3000e-004**	**3.3000e-004**		**3.3000e-004**	**3.3000e-004**	**0.0000**	**19.7624**	**19.7624**	**2.6800e-003**	**0.0000**	**19.8295**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.9 Paving - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.9000e-004	3.8600e-003	0.0550	8.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	6.6041	6.6041	2.0900e-003	0.0000	6.6562
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**8.9000e-004**	**3.8600e-003**	**0.0550**	**8.0000e-005**		**1.2000e-004**	**1.2000e-004**		**1.2000e-004**	**1.2000e-004**	**0.0000**	**6.6041**	**6.6041**	**2.0900e-003**	**0.0000**	**6.6562**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.10 Landscaping/Fencing - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.6000e-004	0.0000	2.6000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.0000e-004	2.1700e-003	0.0207	4.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	3.5887	3.5887	1.1600e-003	0.0000	3.6177
Total	**5.0000e-004**	**2.1700e-003**	**0.0207**	**4.0000e-005**	**2.6000e-004**	**7.0000e-005**	**3.3000e-004**	**3.0000e-005**	**7.0000e-005**	**1.0000e-004**	**0.0000**	**3.5887**	**3.5887**	**1.1600e-003**	**0.0000**	**3.6177**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.2000e-004	3.0000e-004	1.0100e-003	0.0000	3.5000e-004	0.0000	3.5000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3446	0.3446	1.0000e-005	0.0000	0.3449
Unmitigated	1.2000e-004	3.0000e-004	1.0100e-003	0.0000	3.5000e-004	0.0000	3.5000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3446	0.3446	1.0000e-005	0.0000	0.3449

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.45	0.00	0.00	938	938
Total	0.45	0.00	0.00	938	938

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.560859	0.054324	0.173527	0.105775	0.020803	0.005249	0.024187	0.045831	0.001298	0.001788	0.005336	0.000351	0.000672

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1.6203	1.6203	2.2000e-004	5.0000e-005	1.6397
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1.6203	1.6203	2.2000e-004	5.0000e-005	1.6397
NaturalGas Mitigated	3.0000e-004	2.7300e-003	2.2900e-003	2.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	2.9717	2.9717	6.0000e-005	5.0000e-005	2.9894
NaturalGas Unmitigated	3.0000e-004	2.7300e-003	2.2900e-003	2.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	2.9717	2.9717	6.0000e-005	5.0000e-005	2.9894

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	55687.5	3.0000e-004	2.7300e-003	2.2900e-003	2.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	2.9717	2.9717	6.0000e-005	5.0000e-005	2.9894
Total		**3.0000e-004**	**2.7300e-003**	**2.2900e-003**	**2.0000e-005**		**2.1000e-004**	**2.1000e-004**		**2.1000e-004**	**2.1000e-004**	**0.0000**	**2.9717**	**2.9717**	**6.0000e-005**	**5.0000e-005**	**2.9894**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	55687.5	3.0000e-004	2.7300e-003	2.2900e-003	2.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	2.9717	2.9717	6.0000e-005	5.0000e-005	2.9894
Total		**3.0000e-004**	**2.7300e-003**	**2.2900e-003**	**2.0000e-005**		**2.1000e-004**	**2.1000e-004**		**2.1000e-004**	**2.1000e-004**	**0.0000**	**2.9717**	**2.9717**	**6.0000e-005**	**5.0000e-005**	**2.9894**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	17010	1.6203	2.2000e-004	5.0000e-005	1.6397
Total		**1.6203**	**2.2000e-004**	**5.0000e-005**	**1.6397**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	17010	1.6203	2.2000e-004	5.0000e-005	1.6397
Total		**1.6203**	**2.2000e-004**	**5.0000e-005**	**1.6397**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	9.9600e-003	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005
Unmitigated	9.9600e-003	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.1700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	8.7900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005
Total	**9.9600e-003**	**0.0000**	**2.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0000**	**4.0000e-005**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.1700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	8.7900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005
Total	**9.9600e-003**	**0.0000**	**2.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0000**	**4.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.4523	6.7000e-004	4.1000e-004	0.5906
Unmitigated	0.4523	6.7000e-004	4.1000e-004	0.5906

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0.520312 / 0	0.4523	6.7000e-004	4.1000e-004	0.5906
Total		**0.4523**	**6.7000e-004**	**4.1000e-004**	**0.5906**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0.520312 / 0	0.4523	6.7000e-004	4.1000e-004	0.5906
Total		**0.4523**	**6.7000e-004**	**4.1000e-004**	**0.5906**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			

Mitigated	0.5663	0.0335	0.0000	1.4031
Unmitigated	0.5663	0.0335	0.0000	1.4031

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	2.79	0.5663	0.0335	0.0000	1.4031
Total		**0.5663**	**0.0335**	**0.0000**	**1.4031**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	2.79	0.5663	0.0335	0.0000	1.4031
Total		**0.5663**	**0.0335**	**0.0000**	**1.4031**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

EBMUD - Fontaine Demo of Existing PP w/ Standard Conditions of Approval

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	0.00	1000sqft	0.14	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2025
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	210	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Per most recent Published intensity factor

Land Use - Demo emissions

Construction Phase - Per the Construction Data Sheet provided by Panorama

Off-road Equipment - No Building Construstion, Demo Only

Off-road Equipment - Concrete trucks included in haul trips

Off-road Equipment - One of the Backhoes os a hoe ram

Off-road Equipment - No grading for demo

Off-road Equipment - Back Fill Phase of Demo

Off-road Equipment - Site Restoration

Off-road Equipment - Pipeline Abandonment per data sheet provided by Panorama, No Gen needed

Trips and VMT - Building trips reflect retaining wall construction trips. No grading or coating phases. Paving hault trips based on backfill volume.

Demolition -

Grading -

Vehicle Trips - No Ops

Vehicle Emission Factors - EMFAC2017 2025 EFs

Vehicle Emission Factors -

Vehicle Emission Factors -

Energy Use -

Water And Wastewater - WWTF

Construction Off-road Equipment Mitigation - T4 Final Mitigation with Enhanced Dust BMPs

Table Name	Column Name	Default Value	New Value
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tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
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tblFleetMix	UBUS	2.2770e-003	1.7880e-003
tblGrading	MaterialImported	0.00	120.00
tblLandUse	LotAcreage	0.00	0.14
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

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tblVehicleEF	LHD1	0.02	0.03
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tblVehicleEF	LHD2	24.72	8.49
tblVehicleEF	LHD2	0.09	0.08
tblVehicleEF	LHD2	0.57	0.68
tblVehicleEF	LHD2	0.43	0.20
tblVehicleEF	LHD2	1.1530e-003	1.3420e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	3.9000e-004	1.3000e-004
tblVehicleEF	LHD2	1.1030e-003	1.2830e-003
tblVehicleEF	LHD2	2.6840e-003	2.6600e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	3.5800e-004	1.2000e-004
tblVehicleEF	LHD2	7.0500e-004	9.4800e-004

tblVehicleEF	LHD2	0.03	0.04
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	4.4100e-004	5.7200e-004
tblVehicleEF	LHD2	0.10	0.10
tblVehicleEF	LHD2	0.06	0.26
tblVehicleEF	LHD2	0.08	0.04
tblVehicleEF	LHD2	1.3400e-004	1.2900e-004
tblVehicleEF	LHD2	6.8250e-003	7.4000e-003
tblVehicleEF	LHD2	2.6700e-004	8.4000e-005
tblVehicleEF	LHD2	7.0500e-004	9.4800e-004
tblVehicleEF	LHD2	0.03	0.04
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	4.4100e-004	5.7200e-004
tblVehicleEF	LHD2	0.12	0.12
tblVehicleEF	LHD2	0.06	0.26
tblVehicleEF	LHD2	0.09	0.05
tblVehicleEF	MCY	0.47	0.34
tblVehicleEF	MCY	0.16	0.26
tblVehicleEF	MCY	19.41	19.52
tblVehicleEF	MCY	10.30	9.16
tblVehicleEF	MCY	175.52	215.13
tblVehicleEF	MCY	45.05	61.18
tblVehicleEF	MCY	1.16	1.16
tblVehicleEF	MCY	0.32	0.27
tblVehicleEF	MCY	2.1670e-003	2.1260e-003
tblVehicleEF	MCY	3.6900e-003	3.0420e-003
tblVehicleEF	MCY	2.0250e-003	1.9870e-003
tblVehicleEF	MCY	3.4710e-003	2.8590e-003
tblVehicleEF	MCY	0.80	1.59
tblVehicleEF	MCY	0.71	0.70

tblVehicleEF	MCY	0.49	0.97
tblVehicleEF	MCY	2.29	2.30
tblVehicleEF	MCY	0.55	2.00
tblVehicleEF	MCY	2.23	1.97
tblVehicleEF	MCY	2.1400e-003	2.1290e-003
tblVehicleEF	MCY	6.8400e-004	6.0500e-004
tblVehicleEF	MCY	0.80	1.59
tblVehicleEF	MCY	0.71	0.70
tblVehicleEF	MCY	0.49	0.97
tblVehicleEF	MCY	2.85	2.85
tblVehicleEF	MCY	0.55	2.00
tblVehicleEF	MCY	2.42	2.14
tblVehicleEF	MDV	7.9410e-003	2.9420e-003
tblVehicleEF	MDV	0.01	0.07
tblVehicleEF	MDV	0.89	0.69
tblVehicleEF	MDV	2.41	2.92
tblVehicleEF	MDV	425.55	364.81
tblVehicleEF	MDV	96.55	78.19
tblVehicleEF	MDV	0.11	0.06
tblVehicleEF	MDV	0.20	0.28
tblVehicleEF	MDV	1.8340e-003	1.4260e-003
tblVehicleEF	MDV	2.4550e-003	1.7640e-003
tblVehicleEF	MDV	1.6900e-003	1.3150e-003
tblVehicleEF	MDV	2.2570e-003	1.6220e-003
tblVehicleEF	MDV	0.05	0.06
tblVehicleEF	MDV	0.16	0.13
tblVehicleEF	MDV	0.06	0.07
tblVehicleEF	MDV	0.02	0.01
tblVehicleEF	MDV	0.10	0.43
tblVehicleEF	MDV	0.18	0.33

tblVehicleEF	MDV	4.2580e-003	3.4980e-003
tblVehicleEF	MDV	1.0070e-003	7.5100e-004
tblVehicleEF	MDV	0.05	0.06
tblVehicleEF	MDV	0.16	0.13
tblVehicleEF	MDV	0.06	0.07
tblVehicleEF	MDV	0.03	0.02
tblVehicleEF	MDV	0.10	0.43
tblVehicleEF	MDV	0.19	0.36
tblVehicleEF	MH	0.02	8.3300e-003
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	1.58	0.77
tblVehicleEF	MH	5.19	1.98
tblVehicleEF	MH	1,204.53	1,474.91
tblVehicleEF	MH	58.69	17.92
tblVehicleEF	MH	1.14	1.17
tblVehicleEF	MH	0.78	0.25
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	1.0630e-003	2.5400e-004
tblVehicleEF	MH	3.2150e-003	3.2720e-003
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	9.7800e-004	2.3300e-004
tblVehicleEF	MH	0.64	0.49
tblVehicleEF	MH	0.06	0.05
tblVehicleEF	MH	0.25	0.20
tblVehicleEF	MH	0.08	0.05
tblVehicleEF	MH	0.02	1.12
tblVehicleEF	MH	0.30	0.09
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	6.7700e-004	1.7700e-004

tblVehicleEF	MH	0.64	0.49
tblVehicleEF	MH	0.06	0.05
tblVehicleEF	MH	0.25	0.20
tblVehicleEF	MH	0.10	0.07
tblVehicleEF	MH	0.02	1.12
tblVehicleEF	MH	0.33	0.10
tblVehicleEF	MHD	0.02	2.6270e-003
tblVehicleEF	MHD	3.1500e-003	1.1760e-003
tblVehicleEF	MHD	0.04	6.3760e-003
tblVehicleEF	MHD	0.27	0.35
tblVehicleEF	MHD	0.28	0.18
tblVehicleEF	MHD	3.80	0.72
tblVehicleEF	MHD	170.61	71.79
tblVehicleEF	MHD	1,177.05	1,024.67
tblVehicleEF	MHD	43.34	6.41
tblVehicleEF	MHD	0.47	0.40
tblVehicleEF	MHD	1.11	1.45
tblVehicleEF	MHD	13.30	1.84
tblVehicleEF	MHD	1.0200e-004	2.7100e-004
tblVehicleEF	MHD	3.0930e-003	6.9590e-003
tblVehicleEF	MHD	5.9300e-004	7.3000e-005
tblVehicleEF	MHD	9.8000e-005	2.5900e-004
tblVehicleEF	MHD	2.9550e-003	6.6530e-003
tblVehicleEF	MHD	5.4600e-004	6.7000e-005
tblVehicleEF	MHD	5.7600e-004	2.3300e-004
tblVehicleEF	MHD	0.03	0.01
tblVehicleEF	MHD	0.02	0.01
tblVehicleEF	MHD	3.5000e-004	1.4200e-004
tblVehicleEF	MHD	0.04	0.01
tblVehicleEF	MHD	0.01	0.07

tblVehicleEF	MHD	0.23	0.03
tblVehicleEF	MHD	1.6370e-003	6.8000e-004
tblVehicleEF	MHD	0.01	9.7420e-003
tblVehicleEF	MHD	5.0000e-004	6.3000e-005
tblVehicleEF	MHD	5.7600e-004	2.3300e-004
tblVehicleEF	MHD	0.03	0.01
tblVehicleEF	MHD	0.03	0.02
tblVehicleEF	MHD	3.5000e-004	1.4200e-004
tblVehicleEF	MHD	0.05	0.02
tblVehicleEF	MHD	0.01	0.07
tblVehicleEF	MHD	0.25	0.04
tblVehicleEF	OBUS	0.01	8.3240e-003
tblVehicleEF	OBUS	6.6370e-003	5.7470e-003
tblVehicleEF	OBUS	0.03	0.02
tblVehicleEF	OBUS	0.24	0.60
tblVehicleEF	OBUS	0.46	0.64
tblVehicleEF	OBUS	5.23	2.37
tblVehicleEF	OBUS	111.04	87.10
tblVehicleEF	OBUS	1,288.37	1,402.18
tblVehicleEF	OBUS	65.70	18.77
tblVehicleEF	OBUS	0.24	0.35
tblVehicleEF	OBUS	0.94	1.25
tblVehicleEF	OBUS	3.00	0.85
tblVehicleEF	OBUS	2.2000e-005	1.1600e-004
tblVehicleEF	OBUS	2.8390e-003	7.2930e-003
tblVehicleEF	OBUS	8.8600e-004	1.9300e-004
tblVehicleEF	OBUS	2.1000e-005	1.1100e-004
tblVehicleEF	OBUS	2.6950e-003	6.9590e-003
tblVehicleEF	OBUS	8.1400e-004	1.7700e-004
tblVehicleEF	OBUS	1.1640e-003	1.4520e-003

tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.03	0.05
tblVehicleEF	OBUS	5.5500e-004	6.9300e-004
tblVehicleEF	OBUS	0.05	0.03
tblVehicleEF	OBUS	0.03	0.27
tblVehicleEF	OBUS	0.32	0.11
tblVehicleEF	OBUS	1.0710e-003	8.2900e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	7.4900e-004	1.8600e-004
tblVehicleEF	OBUS	1.1640e-003	1.4520e-003
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.04	0.07
tblVehicleEF	OBUS	5.5500e-004	6.9300e-004
tblVehicleEF	OBUS	0.06	0.05
tblVehicleEF	OBUS	0.03	0.27
tblVehicleEF	OBUS	0.35	0.12
tblVehicleEF	SBUS	0.83	0.08
tblVehicleEF	SBUS	0.01	4.1020e-003
tblVehicleEF	SBUS	0.06	6.7410e-003
tblVehicleEF	SBUS	10.93	3.21
tblVehicleEF	SBUS	0.80	0.33
tblVehicleEF	SBUS	10.51	0.98
tblVehicleEF	SBUS	942.53	343.69
tblVehicleEF	SBUS	913.72	965.10
tblVehicleEF	SBUS	75.80	5.66
tblVehicleEF	SBUS	5.18	2.68
tblVehicleEF	SBUS	2.16	3.11
tblVehicleEF	SBUS	8.57	1.17
tblVehicleEF	SBUS	4.2610e-003	2.5480e-003
tblVehicleEF	SBUS	9.6910e-003	0.01

tblVehicleEF	SBUS	0.01	0.02
tblVehicleEF	SBUS	1.3750e-003	8.4000e-005
tblVehicleEF	SBUS	4.0770e-003	2.4380e-003
tblVehicleEF	SBUS	2.4230e-003	2.6070e-003
tblVehicleEF	SBUS	0.01	0.02
tblVehicleEF	SBUS	1.2640e-003	7.8000e-005
tblVehicleEF	SBUS	3.0300e-003	4.3100e-004
tblVehicleEF	SBUS	0.03	4.2120e-003
tblVehicleEF	SBUS	1.30	0.36
tblVehicleEF	SBUS	1.4980e-003	2.0800e-004
tblVehicleEF	SBUS	0.08	0.05
tblVehicleEF	SBUS	0.02	0.03
tblVehicleEF	SBUS	0.52	0.04
tblVehicleEF	SBUS	9.3790e-003	3.2810e-003
tblVehicleEF	SBUS	8.8930e-003	9.2580e-003
tblVehicleEF	SBUS	9.3900e-004	5.6000e-005
tblVehicleEF	SBUS	3.0300e-003	4.3100e-004
tblVehicleEF	SBUS	0.03	4.2120e-003
tblVehicleEF	SBUS	1.89	0.52
tblVehicleEF	SBUS	1.4980e-003	2.0800e-004
tblVehicleEF	SBUS	0.10	0.06
tblVehicleEF	SBUS	0.02	0.03
tblVehicleEF	SBUS	0.57	0.04
tblVehicleEF	UBUS	0.26	1.15
tblVehicleEF	UBUS	0.04	1.0340e-003
tblVehicleEF	UBUS	6.18	8.47
tblVehicleEF	UBUS	7.78	0.07
tblVehicleEF	UBUS	2,169.74	1,640.60
tblVehicleEF	UBUS	84.13	0.82
tblVehicleEF	UBUS	13.74	0.72

tblVehicleEF	UBUS	16.04	8.7940e-003
tblVehicleEF	UBUS	0.64	0.07
tblVehicleEF	UBUS	0.01	0.03
tblVehicleEF	UBUS	0.28	5.2480e-003
tblVehicleEF	UBUS	9.8900e-004	7.0000e-006
tblVehicleEF	UBUS	0.27	0.03
tblVehicleEF	UBUS	3.0000e-003	7.9020e-003
tblVehicleEF	UBUS	0.27	5.0200e-003
tblVehicleEF	UBUS	9.0900e-004	6.0000e-006
tblVehicleEF	UBUS	2.3960e-003	5.7000e-005
tblVehicleEF	UBUS	0.05	8.4400e-004
tblVehicleEF	UBUS	1.2220e-003	3.9000e-005
tblVehicleEF	UBUS	0.71	0.02
tblVehicleEF	UBUS	0.01	5.0210e-003
tblVehicleEF	UBUS	0.59	4.5070e-003
tblVehicleEF	UBUS	0.02	0.01
tblVehicleEF	UBUS	9.8100e-004	8.0000e-006
tblVehicleEF	UBUS	2.3960e-003	5.7000e-005
tblVehicleEF	UBUS	0.05	8.4400e-004
tblVehicleEF	UBUS	1.2220e-003	3.9000e-005
tblVehicleEF	UBUS	1.03	1.17
tblVehicleEF	UBUS	0.01	5.0210e-003
tblVehicleEF	UBUS	0.65	4.9340e-003
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2025	4.3400e-003	0.0208	0.2449	3.7000e-004	2.2300e-003	5.7000e-004	2.8000e-003	3.4000e-004	5.7000e-004	9.1000e-004	0.0000	32.3536	32.3536	8.0100e-003	0.0000	32.5539
Maximum	**4.3400e-003**	**0.0208**	**0.2449**	**3.7000e-004**	**2.2300e-003**	**5.7000e-004**	**2.8000e-003**	**3.4000e-004**	**5.7000e-004**	**9.1000e-004**	**0.0000**	**32.3536**	**32.3536**	**8.0100e-003**	**0.0000**	**32.5539**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**75.60**	**86.84**	**-11.46**	**0.00**	**80.51**	**91.69**	**84.70**	**80.35**	**91.15**	**88.86**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
20	**5-11-2025**	**8-10-2025**	0.1558	0.0218
21	**8-11-2025**	**9-30-2025**	0.0169	0.0029
		Highest	0.1558	0.0218

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	7/1/2025	7/21/2025	5	15	
2	Grading	Grading	7/1/2025	7/1/2025	5	1	No grading
3	Architectural Coating	Architectural Coating	7/1/2025	7/1/2025	5	1	No coatings/interior work
4	Site Preparation	Demolition	7/22/2025	7/28/2025	5	5	Pipe Abandonment
5	Building Construction	Building Construction	7/29/2025	8/11/2025	5	10	Retaining Wall
6	Paving	Paving	8/11/2025	8/15/2025	5	5	Backfill
7	Restoration	Grading	8/15/2025	8/21/2025	5	5	Site Restoration

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	1	8.00	158	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Cement and Mortar Mixers	1	8.00	9	0.56
Site Preparation	Concrete/Industrial Saws	1	8.00	81	0.73
Site Preparation	Excavators	1	8.00	158	0.38
Site Preparation	Generator Sets	0	8.00	84	0.74
Site Preparation	Graders	0	0.00	187	0.41
Site Preparation	Pumps	2	8.00	84	0.74
Site Preparation	Rubber Tired Dozers	0	0.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Welders	1	8.00	46	0.45
Grading	Concrete/Industrial Saws	0	0.00	81	0.73

Grading	Rubber Tired Dozers	0	0.00	247	0.40
Grading	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Building Construction	Cranes	0	0.00	231	0.29
Building Construction	Excavators	1	8.00	158	0.38
Building Construction	Forklifts	1	8.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Paving	Cement and Mortar Mixers	0	0.00	9	0.56
Paving	Excavators	1	8.00	158	0.38
Paving	Pavers	0	0.00	130	0.42
Paving	Plate Compactors	1	8.00	8	0.43
Paving	Rollers	1	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	0	0.00	78	0.48
Restoration	Concrete/Industrial Saws	0	0.00	81	0.73
Restoration	Excavators	1	8.00	158	0.38
Restoration	Rubber Tired Dozers	0	0.00	247	0.40
Restoration	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	3	0.00	0.00	0.00	10.80	7.30	7.30	LD_Mix	HDT_Mix	HHDT
Paving	4	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Restoration	2	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Tier 4 Engines for Construction Equipment

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.2300e-003	0.0000	2.2300e-003	3.4000e-004	0.0000	3.4000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3000e-003	9.9700e-003	0.1222	2.0000e-004		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004	0.0000	17.1735	17.1735	4.4300e-003	0.0000	17.2842
Total	**2.3000e-003**	**9.9700e-003**	**0.1222**	**2.0000e-004**	**2.2300e-003**	**3.1000e-004**	**2.5400e-003**	**3.4000e-004**	**3.1000e-004**	**6.5000e-004**	**0.0000**	**17.1735**	**17.1735**	**4.4300e-003**	**0.0000**	**17.2842**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Grading - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Architectural Coating - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Site Preparation - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.5000e-004	5.7100e-003	0.0493	8.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	6.5751	6.5751	8.2000e-004	0.0000	6.5956
Total	**8.5000e-004**	**5.7100e-003**	**0.0493**	**8.0000e-005**		**1.1000e-004**	**1.1000e-004**		**1.1000e-004**	**1.1000e-004**	**0.0000**	**6.5751**	**6.5751**	**8.2000e-004**	**0.0000**	**6.5956**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Building Construction - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.0000e-004	2.6100e-003	0.0371	5.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	4.3111	4.3111	1.3900e-003	0.0000	4.3459

Total	**6.0000e-004**	**2.6100e-003**	**0.0371**	**5.0000e-005**		**8.0000e-005**	**8.0000e-005**		**8.0000e-005**	**8.0000e-005**	**0.0000**	**4.3111**	**4.3111**	**1.3900e-003**	**0.0000**	**4.3459**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Paving - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.3000e-004	1.4500e-003	0.0206	3.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	2.4742	2.4742	7.8000e-004	0.0000	2.4938
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.3000e-004**	**1.4500e-003**	**0.0206**	**3.0000e-005**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**2.4742**	**2.4742**	**7.8000e-004**	**0.0000**	**2.4938**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.8 Restoration - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.5000e-004	1.1000e-003	0.0157	2.0000e-005		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	1.8198	1.8198	5.9000e-004	0.0000	1.8345
Total	**2.5000e-004**	**1.1000e-003**	**0.0157**	**2.0000e-005**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**1.8198**	**1.8198**	**5.9000e-004**	**0.0000**	**1.8345**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.560859	0.054324	0.173527	0.105775	0.020803	0.005249	0.024187	0.045831	0.001298	0.001788	0.005336	0.000351	0.000672

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			

General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Road Construction Emissions Model
Data Entry Worksheet
Version 9.0.0

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	EBMUD - Fontain New Pipes	
Construction Start Year	2025	Enter a Year between 2014 and 2040 (inclusive)
Project Type For 4: Other Linear Project Type, please provide project specific off-road equipment population and vehicle trip data	4	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	2.59	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)	1	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the lone formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	0.87	miles
Total Project Area	0.65	acres
Maximum Area Disturbed/Day	0.13	acres
Water Trucks Used?	1	1. Yes 2. No

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries

Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd^3) (assume 20 if unknown)	Import Volume (yd^3/day)	Export Volume (yd^3/day)
Soil	Grubbing/Land Clearing	20.00	0.00	0.00
	Grading/Excavation	20.00	115.22	142.93
	Drainage/Utilities/Sub-Grade	20.00	115.22	142.93
	Paving	5.00	0.00	0.00
Asphalt	Grubbing/Land Clearing	20.00	0.00	65.25
	Grading/Excavation	20.00	0.00	0.00
	Drainage/Utilities/Sub-Grade	20.00	0.00	0.00
	Paving	5.00	32.63	0.00

Mitigation Options

On-road Fleet Emissions Mitigation	No Mitigation	Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (http://www.airquality.org/Businesses/CEQA-Land-Use-Planning/Mitigation).
Off-road Equipment Emissions Mitigation	Tier 4 Equipment	
Will all off-road equipment be tier 4?	All Tier 4 Equipment	Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

The remaining sections of this sheet contain areas that require modification when 'Other Project Type' is selected.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing	0.36	0.26		1/1/2025
Grading/Excavation	1.14	1.04		1/13/2025
Drainage/Utilities/Sub-Grade	0.73	0.91		2/17/2025
Paving	0.36	0.39		3/12/2025
Totals (Months)	3			

Please note: You have entered a different number of months than the project length shown in cell D16.
Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing	0.00		0	0	0.00
Miles/round trip: Grading/Excavation	20.00		11	13	220.00
Miles/round trip: Drainage/Utilities/Sub-Grade	20.00		11	13	220.00
Miles/round trip: Paving	0.00		0	0	0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.04	0.43	3.46	0.12	0.05	0.02	1,682.27	0.00	0.26	1,761.12
Grading/Excavation (grams/mile)	0.04	0.43	3.46	0.12	0.05	0.02	1,682.27	0.00	0.26	1,761.12
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.43	3.46	0.12	0.05	0.02	1,682.27	0.00	0.26	1,761.12
Paving (grams/mile)	0.04	0.43	3.46	0.12	0.05	0.02	1,682.27	0.00	0.26	1,761.12
Grubbing/Land Clearing (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.02	0.21	1.79	0.06	0.03	0.01	815.93	0.00	0.13	854.17
Tons per const. Period - Grading/Excavation	0.00	0.00	0.02	0.00	0.00	0.00	10.20	0.00	0.00	10.68
Pounds per day - Drainage/Utilities/Sub-Grade	0.02	0.21	1.79	0.06	0.03	0.01	815.93	0.00	0.13	854.17
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.01	0.00	0.00	0.00	6.53	0.00	0.00	6.83
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.04	0.00	0.00	0.00	16.73	0.00	0.00	17.51

Months

Grubbing/Land Clearing	0.36
Grading/Excavation	1.14
Drainage/Utilities/Sub-Grade	0.73
Paving	0.36

	EF source
on-road	EMFAC2017

Program Calculated Activity Fractions

start date	end date
1/1/2025	1/12/2025
1/13/2025	2/16/2025
2/17/2025	3/11/2025
3/12/2025	3/23/2025

Note: Asphalt Hauling emission default values can be overridden in cells D91 through D94, and F91 through F94.

Asphalt Hauling Emissions	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
User Input					
Miles/round trip: Grubbing/Land Clearing	7.30			4	29.20
Miles/round trip: Grading/Excavation				0	0.00
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00
Miles/round trip: Paving	7.30			7	51.10

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.04	0.43	3.46	0.12	0.05	0.02	1,682.27	0.00	0.26	1,761.12
Grading/Excavation (grams/mile)	0.04	0.43	3.46	0.12	0.05	0.02	1,682.27	0.00	0.26	1,761.12
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.43	3.46	0.12	0.05	0.02	1,682.27	0.00	0.26	1,761.12
Paving (grams/mile)	0.04	0.43	3.46	0.12	0.05	0.02	1,682.27	0.00	0.26	1,761.12
Grubbing/Land Clearing (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.03	0.26	0.01	0.00	0.00	108.30	0.00	0.02	113.37
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.43	0.00	0.00	0.45
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.05	0.46	0.01	0.01	0.00	189.52	0.00	0.03	198.40
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.76	0.00	0.00	0.79
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	1.19	0.00	0.00	1.25

Note: Worker commute default values can be overridden in cells D121 through D126.

Worker Commute Emissions	User Override of Worker Commute Default Values	Default Values		
User Input				
Miles/ one-way trip	20		Calculated Daily Trips	Calculated Daily VMT
One-way trips/day	2			
No. of employees: Grubbing/Land Clearing	19		38	760.00
No. of employees: Grading/Excavation	19		38	760.00
No. of employees: Drainage/Utilities/Sub-Grade	19		38	760.00
No. of employees: Paving	19		38	760.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.01	0.78	0.06	0.05	0.02	0.00	295.84	0.00	0.01	297.52
Grading/Excavation (grams/mile)	0.01	0.78	0.06	0.05	0.02	0.00	295.84	0.00	0.01	297.52
Draining/Utilities/Sub-Grade (grams/mile)	0.01	0.78	0.06	0.05	0.02	0.00	295.84	0.00	0.01	297.52
Paving (grams/mile)	0.01	0.78	0.06	0.05	0.02	0.00	295.84	0.00	0.01	297.52
Grubbing/Land Clearing (grams/trip)	0.93	2.56	0.25	0.00	0.00	0.00	63.73	0.06	0.03	73.77
Grading/Excavation (grams/trip)	0.93	2.56	0.25	0.00	0.00	0.00	63.73	0.06	0.03	73.77
Draining/Utilities/Sub-Grade (grams/trip)	0.93	2.56	0.25	0.00	0.00	0.00	63.73	0.06	0.03	73.77
Paving (grams/trip)	0.93	2.56	0.25	0.00	0.00	0.00	63.73	0.06	0.03	73.77
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.10	1.51	0.11	0.08	0.03	0.00	501.02	0.01	0.01	504.68
Tons per const. Period - Grubbing/Land Clearing	0.00	0.01	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.02
Pounds per day - Grading/Excavation	0.10	1.51	0.11	0.08	0.03	0.00	501.02	0.01	0.01	504.68
Tons per const. Period - Grading/Excavation	0.00	0.02	0.00	0.00	0.00	0.00	6.26	0.00	0.00	6.31
Pounds per day - Drainage/Utilities/Sub-Grade	0.10	1.51	0.11	0.08	0.03	0.00	501.02	0.01	0.01	504.68
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.01	0.00	0.00	0.00	0.00	4.01	0.00	0.00	4.04
Pounds per day - Paving	0.10	1.51	0.11	0.08	0.03	0.00	501.02	0.01	0.01	504.68
Tons per const. Period - Paving	0.00	0.01	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.02
Total tons per construction project	0.00	0.04	0.00	0.00	0.00	0.00	14.28	0.00	0.00	14.38

Note: Water Truck default values can be overridden in cells D153 through D156, I153 through I156, and F153 through F156.

Water Truck Emissions	User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Round Trips/Vehicle/Day	Default Values Round Trips/Vehicle/Day	Calculated Trips/day	User Override of Miles/Round Trip	Default Values Miles/Round Trip	Calculated Daily VMT
User Input								
Grubbing/Land Clearing - Exhaust								0.00
Grading/Excavation - Exhaust								0.00
Drainage/Utilities/Subgrade								0.00
Paving								0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.04	0.43	3.46	0.12	0.05	0.02	1,682.27	0.00	0.26	1,761.12
Grading/Excavation (grams/mile)	0.04	0.43	3.46	0.12	0.05	0.02	1,682.27	0.00	0.26	1,761.12
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.43	3.46	0.12	0.05	0.02	1,682.27	0.00	0.26	1,761.12
Paving (grams/mile)	0.04	0.43	3.46	0.12	0.05	0.02	1,682.27	0.00	0.26	1,761.12
Grubbing/Land Clearing (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Fugitive dust default values can be overridden in cells D183 through D185.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing			1.30	0.01	0.27	0.00
Fugitive Dust - Grading/Excavation			1.30	0.02	0.27	0.00
Fugitive Dust - Drainage/Utilities/Subgrade			1.30	0.01	0.27	0.00

Values in cells D195 through D228, D246 through D279, D297 through D330, and D348 through D381 are required when 'Other Project Type' is selected.

Off-Road Equipment Emissions

Grubbing/Land Clearing	Default Number of Vehicles	Mitigation Option Override of	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles	*Program-estimate*	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			Tier 4	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Tier 4	Concrete/Industrial Saws	0.16	3.86	0.31	0.02	0.01	0.01	592.67	0.03	0.00	594.65
0.00			Tier 4	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Tier 4	Excavators	0.16	3.92	0.32	0.02	0.01	0.01	500.34	0.16	0.00	505.73
0.00			Tier 4	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment — If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing	pounds per day	0.31	7.78	0.63	0.03	0.03	0.01	1,093.00	0.19	0.01	1,100.38
Grubbing/Land Clearing	tons per phase	0.00	0.03	0.00	0.00	0.00	0.00	4.37	0.00	0.00	4.40

Grading/Excavation	Default Number of Vehicles	Mitigation Option Override of	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles	*Program-estimate*	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			Tier 4	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Tier 4	Excavators	0.16	3.92	0.32	0.02	0.01	0.01	500.34	0.16	0.00	505.73
0.00			Tier 4	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Override of Default Number of Vehicles	Program-estimate	Override of Default Equipment Tier	Default Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00			Tier 4	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Tier 4	Tractors/Loaders/Backhoes	0.09	2.34	0.19	0.01	0.01	0.00	302.06	0.10	0.00	305.30
0.00			Tier 4	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grading/Excavation	pounds per day	0.25	6.26	0.51	0.03	0.02	0.01	802.39	0.26	0.01	811.04
Grading/Excavation	tons per phase	0.00	0.08	0.01	0.00	0.00	0.00	10.03	0.00	0.00	10.14

Drainage/Utilities/Subgrade

Override of Default Number of Vehicles	Default Number of Vehicles Program-estimate	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00			Tier 4	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Tier 4	Cement and Mortar Mixers	0.03	0.53	0.47	0.03	0.02	0.00	50.52	0.01	0.00	50.77
0.00			Tier 4	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Tier 4	Cranes	0.18	3.07	0.35	0.02	0.02	0.01	558.83	0.18	0.01	564.85
0.00			Tier 4	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Tier 4	Excavators	0.16	3.92	0.32	0.02	0.01	0.01	500.34	0.16	0.00	505.73
1.00			Tier 4	Forklifts	0.05	1.16	0.09	0.00	0.00	0.00	148.03	0.05	0.00	149.63
1.00			Tier 4	Generator Sets	0.16	4.06	0.33	0.02	0.02	0.01	623.04	0.02	0.00	625.01
0.00			Tier 4	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Tier 4	Tractors/Loaders/Backhoes	0.09	2.34	0.19	0.01	0.01	0.00	302.06	0.10	0.00	305.30
0.00			Tier 4	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Tier 4	Welders	0.07	1.50	1.21	0.01	0.01	0.00	207.48	0.02	0.00	208.49

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Drainage/Utilities/Sub-Grade	pounds per day	0.74	16.58	2.97	0.10	0.09	0.03	2,390.28	0.54	0.02	2,409.78
Drainage/Utilities/Sub-Grade	tons per phase	0.01	0.13	0.02	0.00	0.00	0.00	19.12	0.00	0.00	19.28

Paving

Override of Default Number of Vehicles	Default Number of Vehicles Program-estimate	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00			Tier 4	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Tier 4	Cement and Mortar Mixers	0.03	0.53	0.47	0.03	0.02	0.00	50.52	0.01	0.00	50.77
0.00			Tier 4	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

0.00			Tier 4	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Tier 4	Pavers	0.14	3.56	0.29	0.01	0.01	0.00	454.99	0.15	0.00	459.90
1.00			Tier 4	Paving Equipment	0.13	3.10	0.25	0.01	0.01	0.00	394.32	0.13	0.00	398.57
0.00			Tier 4	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Tier 4	Rollers	0.08	1.98	0.16	0.01	0.01	0.00	254.06	0.08	0.00	256.80
0.00			Tier 4	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Tier 4	Tractors/Loaders/Backhoes	0.09	2.34	0.19	0.01	0.01	0.00	302.06	0.10	0.00	305.30
0.00			Tier 4	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Tier 4	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving		pounds per day		0.47	11.52	1.36	0.07	0.07	0.02	1,455.95	0.46	0.01	1,471.35
Paving		tons per phase		0.00	0.05	0.01	0.00	0.00	0.00	5.82	0.00	0.00	5.89
Total Emissions all Phases (tons per construction period) =>				0.01	0.29	0.04	0.00	0.00	0.00	39.35	0.01	0.00	39.70

Equipment default values for horsepower and hours/day can be overridden in cells D403 through D436 and F403 through F436.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day	Horsepower	Load Factor adjustment
Aerial Lifts		63		8	63.00	0.31
Air Compressors		78		8	78.00	0.48
Bore/Drill Rigs		221		8	221.00	0.50
Cement and Mortar Mixers		9		8	9.00	0.56
Concrete/Industrial Saws		81		8	81.00	0.73
Cranes		231		8	231.00	0.29
Crawler Tractors		212		8	212.00	0.43
Crushing/Proc. Equipment		85		8	85.00	0.78
Excavators		158		8	158.00	0.38
Forklifts		89		8	89.00	0.20
Generator Sets		84		8	84.00	0.74
Graders		187		8	187.00	0.41
Off-Highway Tractors		124		8	124.00	0.44
Off-Highway Trucks		402		8	402.00	0.38
Other Construction Equipment		172		8	172.00	0.42
Other General Industrial Equipment		88		8	88.00	0.34
Other Material Handling Equipment		168		8	168.00	0.40
Pavers		130		8	130.00	0.42
Paving Equipment		132		8	132.00	0.36
Plate Compactors		8		8	8.00	0.43
Pressure Washers		13		8	13.00	0.30
Pumps		84		8	84.00	0.74
Rollers		80		8	80.00	0.38
Rough Terrain Forklifts		100		8	100.00	0.40
Rubber Tired Dozers		247		8	247.00	0.40
Rubber Tired Loaders		203		8	203.00	0.36
Scrapers		367		8	367.00	0.48
Signal Boards		6		8	6.00	0.82
Skid Steer Loaders		65		8	65.00	0.37
Surfacing Equipment		263		8	263.00	0.30
Sweepers/Scrubbers		64		8	64.00	0.46
Tractors/Loaders/Backhoes		97		8	97.00	0.37
Trenchers		78		8	78.00	0.50
Welders		46		8	46.00	0.45

END OF DATA ENTRY SHEET

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> EBMUD - Fontain New Pipes

Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.41	9.32	1.01	1.42	0.12	1.30	0.33	0.06	0.27	0.02	1,702.32	0.20	0.04	1,718.43
Grading/Excavation	0.37	7.98	2.41	1.46	0.16	1.30	0.35	0.08	0.27	0.02	2,119.34	0.27	0.15	2,169.89
Drainage/Utilities/Sub-Grade	0.85	18.30	4.87	1.53	0.23	1.30	0.42	0.15	0.27	0.04	3,707.23	0.55	0.16	3,768.64
Paving	0.57	13.09	1.94	0.16	0.16	0.00	0.10	0.10	0.00	0.02	2,146.48	0.47	0.05	2,174.43
Maximum (pounds/day)	0.85	18.30	4.87	1.53	0.23	1.30	0.42	0.15	0.27	0.04	3,707.23	0.55	0.16	3,768.64
Total (tons/construction project)	0.02	0.34	0.08	0.04	0.00	0.03	0.01	0.00	0.01	0.00	71.54	0.01	0.00	72.84

Notes:

Project Start Year ->	2025
Project Length (months) ->	3
Total Project Area (acres) ->	1
Maximum Area Disturbed/Day (acres) ->	0
Water Truck Used? ->	Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	65	0	29	760	0
Grading/Excavation	258	0	220	0	760	0
Drainage/Utilities/Sub-Grade	258	0	220	0	760	0
Paving	0	33	0	51	760	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> EBMUD - Fontain New Pipes

Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.04	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	6.81	0.00	0.00	6.24
Grading/Excavation	0.00	0.10	0.03	0.02	0.00	0.02	0.00	0.00	0.00	0.00	26.49	0.00	0.00	24.61
Drainage/Utilities/Sub-Grade	0.01	0.15	0.04	0.01	0.00	0.01	0.00	0.00	0.00	0.00	29.66	0.00	0.00	27.35
Paving	0.00	0.05	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.59	0.00	0.00	7.89
Maximum (tons/phase)	0.01	0.15	0.04	0.02	0.00	0.02	0.00	0.00	0.00	0.00	29.66	0.00	0.00	27.35
Total (tons/construction project)	0.02	0.34	0.08	0.04	0.00	0.03	0.01	0.00	0.01	0.00	71.54	0.01	0.00	66.08

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

Appendix C EMFAC2017 Vehicle Emissions Modeling Outputs

CalEEMod EMFAC2017 Emission Factors Input - 2025

Season	EmissionType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
A	CH4_IDLEX	0	0	0	0	0.005036	0.003395	0.002627	0.023775849	0.008324	0	0	0.08031	0
A	CH4_RUNEX	0.001645	0.003195	0.00262	0.002942	0.007551	0.006412	0.001176	0.029958318	0.005747	1.149142	0.33961	0.004102	0.00833
A	CH4_STREX	0.043126	0.05752	0.059856	0.068034	0.013445	0.008442	0.006376	1.99693E-07	0.0214	0.001034	0.257407	0.006741	0.022176
A	CO_IDLEX	0	0	0	0	0.185133	0.144969	0.352655	6.601287458	0.603049	0	0	3.211097	0
A	CO_RUNEX	0.496082	0.7607	0.663426	0.690075	0.686702	0.568362	0.178728	0.348287982	0.643193	8.465307	19.51651	0.327	0.772782
A	CO_STREX	2.090027	2.270273	2.690204	2.917846	1.046648	0.650904	0.720028	0.003949233	2.373338	0.072689	9.158692	0.976387	1.977623
A	CO2_NBIO_IDLEX	0	0	0	0	8.779961	13.43096	71.79196	1061.577834	87.10159	0	0	343.6913	0
A	CO2_NBIO_RUNEX	238.8047	286.7219	303.7775	364.8092	775.9976	764.9898	1024.671	1349.203169	1402.177	1640.6	215.1322	965.1044	1474.91
A	CO2_NBIO_STREX	50.6847	61.42263	65.62014	78.18554	11.64518	8.486827	6.408232	0.04130508	18.76786	0.821128	61.17975	5.656803	17.92085
A	NOX_IDLEX	0	0	0	0	0.053704	0.083376	0.402209	5.424980361	0.345714	0	0	2.676741	0
A	NOX_RUNEX	0.028269	0.059956	0.051687	0.059468	0.598222	0.681404	1.447371	2.584701511	1.251507	0.71708	1.162296	3.109542	1.170473
A	NOX_STREX	0.165068	0.216243	0.240861	0.280175	0.308975	0.198493	1.838958	2.282874493	0.850586	0.008794	0.273487	1.170405	0.246188
A	PM10_IDLEX	0	0	0	0	0.000826	0.001342	0.000271	0.002287312	0.000116	0	0	0.002548	0
A	PM10_PMBW	0.03675	0.03675	0.03675	0.03675	0.07644	0.08918	0.13034	0.061255852	0.13034	0.074176	0.01176	0.7448	0.13034
A	PM10_PMTW	0.008	0.008	0.008	0.008	0.009748	0.01064	0.012	0.035710715	0.012	0.031607	0.004	0.010426	0.013086
A	PM10_RUNEX	0.001321	0.001603	0.001359	0.001426	0.00929	0.014295	0.006959	0.02534607	0.007293	0.005248	0.002126	0.019263	0.019488
A	PM10_STREX	0.001638	0.002066	0.001676	0.001764	0.000241	0.00013	7.3E-05	2.4672E-07	0.000193	7.06E-06	0.003042	8.44E-05	0.000254
A	PM25_IDLEX	0	0	0	0	0.00079	0.001283	0.000259	0.002188363	0.000111	0	0	0.002438	0
A	PM25_PMBW	0.01575	0.01575	0.01575	0.01575	0.03276	0.03822	0.05586	0.026252508	0.05586	0.03179	0.00504	0.3192	0.05586
A	PM25_PMTW	0.002	0.002	0.002	0.002	0.002437	0.00266	0.003	0.008927679	0.003	0.007902	0.001	0.002607	0.003272
A	PM25_RUNEX	0.001217	0.001475	0.001251	0.001315	0.008841	0.01365	0.006653	0.024249597	0.006959	0.00502	0.001987	0.018408	0.018602
A	PM25_STREX	0.001507	0.001899	0.001541	0.001622	0.000222	0.00012	6.71E-05	2.2685E-07	0.000177	6.49E-06	0.002859	7.76E-05	0.000233
A	ROG_DIURN	0.03282	0.069667	0.053667	0.061371	0.001673	0.000948	0.000233	1.26278E-06	0.001452	5.74E-05	1.592187	0.000431	0.493303
A	ROG_HTSK	0.088844	0.15291	0.115863	0.129047	0.070432	0.041434	0.01281	6.44552E-05	0.02323	0.000844	0.696788	0.004212	0.047319
A	ROG_IDLEX	0	0	0	0	0.020599	0.016367	0.01461	0.445363393	0.051484	0	0	0.359674	0
A	ROG_RESTL	0.03299	0.064503	0.057593	0.066374	0.000978	0.000572	0.000142	8.59208E-07	0.000693	3.85E-05	0.974806	0.000208	0.198172
A	ROG_RUNEX	0.006143	0.013404	0.010289	0.012014	0.085935	0.102508	0.013212	0.024082633	0.033337	0.016541	2.298512	0.053397	0.054927
A	ROG_RUNLS	0.202978	0.570555	0.416964	0.434192	0.514359	0.26416	0.071315	0.000331056	0.272246	0.005021	1.998295	0.028486	1.122503
A	ROG_STREX	0.189193	0.275955	0.273533	0.330171	0.067139	0.041592	0.033127	1.0437E-06	0.11104	0.004507	1.969195	0.037369	0.089279
A	SO2_IDLEX	0	0	0	0	8.52E-05	0.000129	0.00068	0.00993643	0.000829	0	0	0.003281	0
A	SO2_RUNEX	9.27E-05	0.002492	0.009742	0.003498	0.007579	0.0074	0.009742	0.012493424	0.013581	0.01216	0.002129	0.009258	0.014479
A	SO2_STREX	0	0	6.34E-05	0.000751	0.000115	8.4E-05	6.34E-05	4.08747E-07	0.000186	8.13E-06	0.000605	5.6E-05	0.000177
A	TOG_DIURN	0.03282	0.069667	0.053667	0.061371	0.001673	0.000948	0.000233	1.26278E-06	0.001452	5.74E-05	1.592187	0.000431	0.493303
A	TOG_HTSK	0.088844	0.15291	0.115863	0.129047	0.070432	0.041434	0.01281	6.44552E-05	0.02323	0.000844	0.696788	0.004212	0.047319
A	TOG_IDLEX	0	0	0	0	0.029014	0.02221	0.019466	0.510118841	0.067228	0	0	0.518326	0
A	TOG_RESTL	0.03299	0.064503	0.057593	0.066374	0.000978	0.000572	0.000142	8.59208E-07	0.000693	3.85E-05	0.974806	0.000208	0.198172
A	TOG_RUNEX	0.00892	0.019547	0.014975	0.017442	0.104772	0.119565	0.016121	0.056439134	0.04626	1.172924	2.853753	0.063873	0.071858
A	TOG_RUNLS	0.202978	0.570555	0.416964	0.434192	0.514359	0.26416	0.071315	0.000331056	0.272246	0.005021	1.998295	0.028486	1.122503
A	TOG_STREX	0.207143	0.302136	0.299484	0.361495	0.073509	0.045539	0.03627	1.14272E-06	0.121574	0.004934	2.143298	0.040915	0.097749

CalEEMod EMFAC2017 Fleet Mix Input - 2025

FleetMixLandUseSubType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
	0.560859	0.054324	0.173527	0.105775	0.020803	0.005249	0.024187	0.045831	0.001298	0.001788	0.005336	0.000351	0.000672

CalEEMod Construction Inputs

Phase	CalEEMod WORKER TRIPS	CalEEMod VENDOR TRIPS	Total Worker Trips	Total Vendor Trips	CalEEMod HAULING TRIPS	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class	*Worker VMT*	*Vendor VMT*	*Hauling VMT*
Demolition	4	4	8	8	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	86.4	58.4	0
Site Preparation	10	20	30	60	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	324	438	0
Grading	10	20	100	200	79	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	1080	1460	1580
Building Construction	20	14	2220	140	96	10.8	7.3	7.3	LD_Mix	HDT_Mix	HHDT	23976	1022	700.8
Paving	13	0	130	0	15.2	10.8	7.3	7.3	LD_Mix	HDT_Mix	HHDT	1404	0	110.96
Architectural Coating	16	4	1296	40	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	13996.8	292	0
Retaining Wall	8	2	80	162	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	864	1182.6	0
Landscaping/Fencing	8	2	40	20	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	432	146	0
Trenching	10	20	100	100	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	1080	730	0

Number of Days Per Year				
2025	1/1/25	6/26/25	177	
			0	
			177	**127** ***Total Workdays***

Summary of Construction Traffic Emissions (EMFAC2017)

CATEGORY	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	NBio- CO2
					Grams						
Hauling	142.38	7648.02	2089.33728	31.771	715.14	292.98	1008.1	107.61	142.56	250.16	3428890.131
Vendor	354.67	15928.41	4970.6	66.448	1593.37	702.66	2296.0	239.75	329.03	568.78	7119480.221
Worker	3004.66	2281.43	32779.3	103.014	12929.72	2000.16	14929.9	1945.51	827.44	2772.96	11306616.27
Total (g)	3501.71	25857.85763	39839.2388	201.2336916	15238.22404	2995.797678	18234.0217	2292.86856	1299.031136	3591.899697	21854986.62
Total (lbs)	7.72	57.01	87.83	0.44	33.59	6.6	40.20	5.05	2.86	7.92	48181.99791
Total (tons)	0.0039	0.029	0.044	0.000	0.017	0.0033	0.0201	0.0025	0.001	0.004	24.09
Total (MT)											21.85

Summary of Construction Traffic Emissions (EMFAC2017)

CATEGORY	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	NBio- CO2
					Grams						
Hauling	87.07	1711.84	1289.43821	3.078	28.43	12.07	40.5	4.28	6.07	10.35	330229.1816
Vendor	253.76	5048.21	3532.4	9.149	109.14	49.23	158.4	16.42	23.59	40.01	978531.9929
Worker	2693.08	813.09	10050.2	4.822	598.60	99.00	697.6	90.07	44.19	134.26	732372.8154
Total (g)	3033.92	7573.136877	14872.1012	17.04939183	736.1679	160.2939371	896.461837	110.769879	73.84769099	184.61757	2041133.99
Total (lbs)	6.69	16.70	32.79	0.04	1.62	0.4	1.98	0.24	0.16	0.41	4499.930168
Total (tons)	0.0033	0.008	0.016	0.000	0.001	0.0002	0.0010	0.0001	0.000	0.000	2.25
Total (MT)											2.04

CalEEMod Construction Inputs

Phase	CalEEMod WORKER TRIPS	CalEEMod VENDOR TRIPS	Total Worker Trips	Total Vendor Trips	CalEEMod HAULING TRIPS	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class	*Worker VMT*	*Vendor VMT*	*Hauling VMT*
Demolition	15	0	225	0	230	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	2430	0	4600
Grading	0	0	0	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	0	0	0
Architectural Coating	0	0	0	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	0	0	0
Site Preparation	10	0	100	0	40	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	1080	0	800
Building Construction	20	6	800	60	0	10.8	7.3	7.3	LD_Mix	HDT_Mix	HHDT	8640	438	0
Paving	10	0	50	0	130	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	540	0	2600
Restoration	12	0	60	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	648	0	0

Number of Days Per Year				
2025	7/1/25	8/21/25	52	
			0	
			52	**38** ***Total Workdays***

Summary of Construction Traffic Emissions (EMFAC2017)

CATEGORY	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	NBio- CO2
					Grams						
Hauling	370.97	23760.75	5428.39853	103.922	2392.00	979.42	3371.4	359.92	476.31	836.23	11218273
Vendor	29.15	1309.18	408.5	5.461	130.96	57.75	188.7	19.71	27.04	46.75	585162.7579
Worker	926.76	703.69	10110.5	31.774	3988.06	616.93	4605.0	600.08	255.22	855.29	3487430.344
Total (g)	1326.88	25773.62624	15947.4483	141.1575486	6511.024	1654.10128	8165.12528	979.70224	758.5754102	1738.27765	15290866.11
Total (lbs)	2.93	56.82	35.16	0.31	14.35	3.6	18.00	2.16	1.67	3.83	33710.58932
Total (tons)	0.0015	0.028	0.018	0.000	0.007	0.0018	0.0090	0.0011	0.001	0.002	16.86
Total (MT)											15.29

Summary of Construction Traffic Emissions (EMFAC2017)

CATEGORY	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	NBio- CO2
					Grams						
Hauling	183.12	3600.08	2711.75227	6.473	59.80	25.38	85.2	9.00	12.76	21.76	694488.2894
Vendor	20.86	414.92	290.3	0.752	8.97	4.05	13.0	1.35	1.94	3.29	80427.28709
Worker	830.66	250.79	3099.9	1.487	184.63	30.54	215.2	27.78	13.63	41.41	225894.2125
Total (g)	1034.64	4265.794636	6102.00166	8.712826734	253.4025	59.95941019	313.36191	38.129025	28.33089112	66.45991612	1000809.789
Total (lbs)	2.28	9.40	13.45	0.02	0.56	0.1	0.69	0.08	0.06	0.15	2206.407901
Total (tons)	0.0011	0.005	0.007	0.000	0.000	0.0001	0.0003	0.0000	0.000	0.000	1.10
Total (MT)											1.00

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> EBMUD - Fontain New Pipes

Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.39	8.06	0.73	1.34	0.04	1.30	0.30	0.03	0.27	0.01	1,137.96	0.19	0.01	1,147.01
Grading/Excavation	0.33	6.55	0.72	1.33	0.03	1.30	0.30	0.03	0.27	0.01	873.31	0.26	0.02	884.85
Drainage/Utilities/Sub-Grade	0.82	16.87	3.19	1.41	0.11	1.30	0.36	0.09	0.27	0.03	2,461.20	0.54	0.03	2,483.60
Paving	0.55	11.81	1.51	0.08	0.08	0.00	0.07	0.07	0.00	0.02	1,512.03	0.47	0.02	1,529.63
Maximum (pounds/day)	0.82	16.87	3.19	1.41	0.11	1.30	0.36	0.09	0.27	0.03	2,461.20	0.54	0.03	2,483.60
Total (tons/construction project)	0.01	0.30	0.04	0.03	0.00	0.03	0.01	0.00	0.01	0.00	41.21	0.01	0.00	41.64

Notes:

Project Start Year ->	2025
Project Length (months) ->	3
Total Project Area (acres) ->	1
Maximum Area Disturbed/Day (acres) ->	0
Water Truck Used? ->	Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	65	0	4	38	0
Grading/Excavation	258	0	11	0	38	0
Drainage/Utilities/Sub-Grade	258	0	11	0	38	0
Paving	0	33	0	7	38	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> EBMUD - Fontain New Pipes

Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	4.55	0.00	0.00	4.16
Grading/Excavation	0.00	0.08	0.01	0.02	0.00	0.02	0.00	0.00	0.00	0.00	10.92	0.00	0.00	10.03
Drainage/Utilities/Sub-Grade	0.01	0.13	0.03	0.01	0.00	0.01	0.00	0.00	0.00	0.00	19.69	0.00	0.00	18.02
Paving	0.00	0.05	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.05	0.00	0.00	5.55
Maximum (tons/phase)	0.01	0.13	0.03	0.02	0.00	0.02	0.00	0.00	0.00	0.00	19.69	0.00	0.00	18.02
Total (tons/construction project)	0.01	0.30	0.04	0.03	0.00	0.03	0.01	0.00	0.01	0.00	41.21	0.01	0.00	37.77

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

Appendix D Emission Factor Inputs

EBMUD Fontaine Project, Oakland, CA

DPM Emissions and Modeling Emission Rates - Without Design Feature Controls

Construction Year	Activity	Area Source	DPM Emissions (ton/year)	DPM Emissions (lb/yr)	DPM Emissions (lb/hr)	DPM Emissions (g/s)	Modeled Area (m^2)	DPM Emission Rate ($g/s/m^2$)	
2025-2026	New PP Construction	DPM_NEW_PP	0.0340767	68.2	0.04259	5.37E-03	1066	5.03E-06	
2025-2026	New Suction Pipe	DPM_NEW_SUC	0.0016502	3.3	0.00465	5.86E-04	2668	2.20E-07	0.000586
2025-2026	New Discharge Pipe	DPM_NEW_DIS	0.0052255	10.5	0.01474	1.86E-03	8962	2.07E-07	0.001857
2025-2026	Demo Existing PP	DPM_DEMO	7.17E-03	14.3	0.02993	3.77E-03	419	9.01E-06	

Construction Hours
hr/day = 9 (7am - 4pm)
days/yr = 178 Max
hours/year = Varies

EBMUD Fontaine Project, Oakland, CA

PM2.5 Fugitive Dust Emissions for Modeling - Without Design Feature Controls

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	PM2.5 Emissions (lb/yr)	PM2.5 Emissions (lb/hr)	PM2.5 Emissions (g/s)	Modeled Area (m^2)	PM2.5 Emission Rate $g/s/m^2$
2025-2026	New PP Construction	F25_NEW_PP	0.0221	44.2	0.02765	3.48E-03	1066	3.27E-06
2025-2026	New Suction Pipe	F25_NEW_SUC	0.0032	6.4	0.00897	1.13E-03	2668	4.24E-07
2025-2026	New Discharge Pipe	F25_NEW_DIS	0.0101	20.1	0.02840	3.58E-03	8962	3.99E-07
2025-2026	Demo Existing PP	F25_DEMO	0.0018	3.5	0.00740	9.33E-04	419	2.23E-06

Construction Hours
hr/day = 9 (7am - 4pm)
days/yr = 178 Max
hours/year = Varies

DPM Emissions and Modeling Emission Rates - With SCOA

Construction Year	Activity	Area Source	DPM Emissions (ton/year)	DPM Emissions (lb/yr)	DPM Emissions (lb/hr)	DPM Emissions (g/s)	Modeled Area (m^2)	DPM Emission Rate ($g/s/m^2$)	
2025-2026	New PP Construction	DPM_NEW_PP	0.0019467	3.9	0.00243	3.07E-04	1066	2.88E-07	0.000307
2025-2026	New Suction Pipe	DPM_NEW_SUC	0.0004073	0.8	0.00115	1.45E-04	2668	5.42E-08	0.000145
2025-2026	New Discharge Pipe	DPM_NEW_DIS	0.001289676	2.6	0.00364	4.58E-04	8962	5.11E-08	0.000458
2025-2026	Demo Existing PP	DPM_DEMO	6.36E-04	1.3	0.00266	3.35E-04	419	8.00E-07	

Construction Hours
hr/day = 9 (7am - 4pm)
days/yr = 178 Max
hours/year = Varies

PM2.5 Fugitive Dust Emissions for Modeling - With SCOA

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	PM2.5 Emissions (lb/yr)	PM2.5 Emissions (lb/hr)	PM2.5 Emissions (g/s)	Modeled Area (m^2)	PM2.5 Emission Rate $g/s/m^2$
2025-2026	New PP Construction	F25_NEW_PP	0.0044	8.8	0.00551	6.95E-04	1066	6.52E-07
2025-2026	New Suction Pipe	F25_NEW_SUC	0.0016	3.2	0.00448	5.65E-04	2668	2.12E-07
2025-2026	New Discharge Pipe	F25_NEW_DIS	0.0050	10.1	0.01420	1.79E-03	8962	2.00E-07
2025-2026	Demo Existing PP	F25_DEMO	0.0004	0.8	0.00160	2.01E-04	419	4.80E-07

Construction Hours
hr/day = 9 (7am - 4pm)
days/yr = 178 Max
hours/year = Varies

EBMUD Fontaine Project, Oakland, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction of New Pump Plant and Pipe
Impacts at Off-Site Homes (Single Famly and Multi Family) - 4.55 meter receptor height

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air $(\mu g/m^3)$
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant/Child			Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 16**	**16 - 30**
Parameter				
ASF =	10	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

		Infant/Child - Exposure Information				Infant/Child	Adult - Exposure Information			Adult		Maximum	
			DPM Conc (ug/m3)		Age	Cancer	Modeled DPM Conc (ug/m3)		Age	Cancer		Fugitive	Total
Exposure Year	**Exposure Duration (years)**	**Age**	**Year**	**Annual**	**Sensitivity Factor**	**Risk (per million)**	**Year**	**Annual**	**Sensitivity Factor**	**Risk (per million)**	**HI**	**PM2.5**	**PM2.5**
0	0.25	-0.25 - 0*	2025-2026	0.9271	10	12.61							
1	0.49	0 - 1	2025-2026	0.9271	10	74.26	2025-2026	0.9271	1	2.66	0.185	0.4836	1.4107
2	1	1 - 2	2026-2027	0.0000	10	0.00	2026-2027	0.0000	1	0.00	0.000	0.0000	0.000
3	1	2 - 3	2027	0.0000	3	0.00	2027	0.0000	1	0.00			
4	1	3 - 4	2028	0.0000	3	0.00	2028	0.0000	1	0.00			
5	1	4 - 5	2029	0.0000	3	0.00	2029	0.0000	1	0.00			
6	1	5 - 6	2030	0.0000	3	0.00	2030	0.0000	1	0.00			
7	1	6 - 7	2031	0.0000	3	0.00	2031	0.0000	1	0.00			
8	1	7 - 8	2032	0.0000	3	0.00	2032	0.0000	1	0.00			
9	1	8 - 9	2033	0.0000	3	0.00	2033	0.0000	1	0.00			
10	1	9 - 10	2034	0.0000	3	0.00	2034	0.0000	1	0.00			
11	1	10 - 11	2035	0.0000	3	0.00	2035	0.0000	1	0.00			
12	1	11 - 12	2036	0.0000	3	0.00	2036	0.0000	1	0.00			
13	1	12 - 13	2037	0.0000	3	0.00	2037	0.0000	1	0.00			
14	1	13 - 14	2038	0.0000	3	0.00	2038	0.0000	1	0.00			
15	1	14 - 15	2039	0.0000	3	0.00	2039	0.0000	1	0.00			
16	1	15 - 16	2040	0.0000	3	0.00	2040	0.0000	1	0.00			
17	1	16-17	2041	0.0000	1	0.00	2041	0.0000	1	0.00			
18	1	17-18	2042	0.0000	1	0.00	2042	0.0000	1	0.00			
19	1	18-19	2043	0.0000	1	0.00	2043	0.0000	1	0.00			
20	1	19-20	2044	0.0000	1	0.00	2044	0.0000	1	0.00			
21	1	20-21	2045	0.0000	1	0.00	2045	0.0000	1	0.00			
22	1	21-22	2046	0.0000	1	0.00	2046	0.0000	1	0.00			
23	1	22-23	2047	0.0000	1	0.00	2047	0.0000	1	0.00			
24	1	23-24	2048	0.0000	1	0.00	2048	0.0000	1	0.00			
25	1	24-25	2049	0.0000	1	0.00	2049	0.0000	1	0.00			
26	1	25-26	2050	0.0000	1	0.00	2050	0.0000	1	0.00			
27	1	26-27	2051	0.0000	1	0.00	2051	0.0000	1	0.00			
28	1	27-28	2052	0.0000	1	0.00	2052	0.0000	1	0.00			
29	1	28-29	2053	0.0000	1	0.00	2053	0.0000	1	0.00			
30	1	29-30	2054	0.0000	1	0.00	2054	0.0000	1	0.00			
Total Increased Cancer Risk						**86.9**				**2.66**			

* Third trimester of pregnancy

EBMUD Fontaine Project, Oakland, CA - Construction Impacts - With SCOA
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction of New Pump Plant and Pipe
Impacts at Off-Site Homes (Single Famly and Multi Family) - 4.55 meter receptor height

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant/Child			Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 16**	**16 - 30**
Parameter				
ASF =	10	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

		Infant/Child - Exposure Information				Infant/Child	Adult - Exposure Information			Adult		Maximum	
	Exposure		DPM Conc (ug/m3)		Age	Cancer	Modeled DPM Conc (ug/m3)		Age	Cancer		Fugitive	Total
Exposure Year	Duration (years)	Age	Year	Annual	Sensitivity Factor	Risk (per million)	Year	Annual	Sensitivity Factor	Risk (per million)	HI	PM2.5	PM2.5
0	0.25	-0.25 - 0*	2025-2026	0.0572	10	0.78							
1	0.49	0 - 1	2025-2026	0.0572	10	4.58	2025-2026	0.0572	1	0.16	0.011	0.1120	0.1692
2	1	1 - 2	2026-2027	0.0000	10	0.00	2026-2027	0.0000	1	0.00	0.000	0.0000	0.000
3	1	2 - 3	2027	0.0000	3	0.00	2027	0.0000	1	0.00			
4	1	3 - 4	2028	0.0000	3	0.00	2028	0.0000	1	0.00			
5	1	4 - 5	2029	0.0000	3	0.00	2029	0.0000	1	0.00			
6	1	5 - 6	2030	0.0000	3	0.00	2030	0.0000	1	0.00			
7	1	6 - 7	2031	0.0000	3	0.00	2031	0.0000	1	0.00			
8	1	7 - 8	2032	0.0000	3	0.00	2032	0.0000	1	0.00			
9	1	8 - 9	2033	0.0000	3	0.00	2033	0.0000	1	0.00			
10	1	9 - 10	2034	0.0000	3	0.00	2034	0.0000	1	0.00			
11	1	10 - 11	2035	0.0000	3	0.00	2035	0.0000	1	0.00			
12	1	11 - 12	2036	0.0000	3	0.00	2036	0.0000	1	0.00			
13	1	12 - 13	2037	0.0000	3	0.00	2037	0.0000	1	0.00			
14	1	13 - 14	2038	0.0000	3	0.00	2038	0.0000	1	0.00			
15	1	14 - 15	2039	0.0000	3	0.00	2039	0.0000	1	0.00			
16	1	15 - 16	2040	0.0000	3	0.00	2040	0.0000	1	0.00			
17	1	16-17	2041	0.0000	1	0.00	2041	0.0000	1	0.00			
18	1	17-18	2042	0.0000	1	0.00	2042	0.0000	1	0.00			
19	1	18-19	2043	0.0000	1	0.00	2043	0.0000	1	0.00			
20	1	19-20	2044	0.0000	1	0.00	2044	0.0000	1	0.00			
21	1	20-21	2045	0.0000	1	0.00	2045	0.0000	1	0.00			
22	1	21-22	2046	0.0000	1	0.00	2046	0.0000	1	0.00			
23	1	22-23	2047	0.0000	1	0.00	2047	0.0000	1	0.00			
24	1	23-24	2048	0.0000	1	0.00	2048	0.0000	1	0.00			
25	1	24-25	2049	0.0000	1	0.00	2049	0.0000	1	0.00			
26	1	25-26	2050	0.0000	1	0.00	2050	0.0000	1	0.00			
27	1	26-27	2051	0.0000	1	0.00	2051	0.0000	1	0.00			
28	1	27-28	2052	0.0000	1	0.00	2052	0.0000	1	0.00			
29	1	28-29	2053	0.0000	1	0.00	2053	0.0000	1	0.00			
30	1	29-30	2054	0.0000	1	0.00	2054	0.0000	1	0.00			
Total Increased Cancer Risk						**5.4**				**0.16**			

* Third trimester of pregnancy

EBMUD Fontaine Project, Oakland, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Demolition of Existing PP
Impacts at Off-Site Single Family Homes - 1.5 meter receptor height

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant/Child			Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 16**	**16 - 30**
Parameter				
ASF =	10	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

		Infant/Child - Exposure Information				Infant/Child	Adult - Exposure Information			Adult			
							Modeled						
Exposure	**Exposure Duration**		**DPM Conc (ug/m3)**		**Age Sensitivity**	**Cancer Risk**	**DPM Conc (ug/m3)**		**Age Sensitivity**	**Cancer Risk**		**Maximum**	
Year	**(years)**	**Age**	**Year**	**Annual**	**Factor**	**(per million)**	**Year**	**Annual**	**Factor**	**(per million)**	**HI**	**Fugitive PM2.5**	**Total PM2.5**
0	0.1457534	-0.25 - 0*	2025-2026	0.2793	10	2.21							
1	0.1457534	0 - 1	2025-2026	0.2793	10	6.69	2025-2026	0.2793	1	0.80	0.056	0.1143	0.3936
2	1	1 - 2	2026-2027	0.0000	10	0.00	2026-2027	0.0000	1	0.00	0.000	0.0000	0.000
3	1	2 - 3	2027	0.0000	3	0.00	2027	0.0000	1	0.00			
4	1	3 - 4	2028	0.0000	3	0.00	2028	0.0000	1	0.00			
5	1	4 - 5	2029	0.0000	3	0.00	2029	0.0000	1	0.00			
6	1	5 - 6	2030	0.0000	3	0.00	2030	0.0000	1	0.00			
7	1	6 - 7	2031	0.0000	3	0.00	2031	0.0000	1	0.00			
8	1	7 - 8	2032	0.0000	3	0.00	2032	0.0000	1	0.00			
9	1	8 - 9	2033	0.0000	3	0.00	2033	0.0000	1	0.00			
10	1	9 - 10	2034	0.0000	3	0.00	2034	0.0000	1	0.00			
11	1	10 - 11	2035	0.0000	3	0.00	2035	0.0000	1	0.00			
12	1	11 - 12	2036	0.0000	3	0.00	2036	0.0000	1	0.00			
13	1	12 - 13	2037	0.0000	3	0.00	2037	0.0000	1	0.00			
14	1	13 - 14	2038	0.0000	3	0.00	2038	0.0000	1	0.00			
15	1	14 - 15	2039	0.0000	3	0.00	2039	0.0000	1	0.00			
16	1	15 - 16	2040	0.0000	3	0.00	2040	0.0000	1	0.00			
17	1	16-17	2041	0.0000	1	0.00	2041	0.0000	1	0.00			
18	1	17-18	2042	0.0000	1	0.00	2042	0.0000	1	0.00			
19	1	18-19	2043	0.0000	1	0.00	2043	0.0000	1	0.00			
20	1	19-20	2044	0.0000	1	0.00	2044	0.0000	1	0.00			
21	1	20-21	2045	0.0000	1	0.00	2045	0.0000	1	0.00			
22	1	21-22	2046	0.0000	1	0.00	2046	0.0000	1	0.00			
23	1	22-23	2047	0.0000	1	0.00	2047	0.0000	1	0.00			
24	1	23-24	2048	0.0000	1	0.00	2048	0.0000	1	0.00			
25	1	24-25	2049	0.0000	1	0.00	2049	0.0000	1	0.00			
26	1	25-26	2050	0.0000	1	0.00	2050	0.0000	1	0.00			
27	1	26-27	2051	0.0000	1	0.00	2051	0.0000	1	0.00			
28	1	27-28	2052	0.0000	1	0.00	2052	0.0000	1	0.00			
29	1	28-29	2053	0.0000	1	0.00	2053	0.0000	1	0.00			
30	1	29-30	2054	0.0000	1	0.00	2054	0.0000	1	0.00			
Total Increased Cancer Risk						**8.9**				**0.80**			

* Third trimester of pregnancy

EBMUD Fontaine Project, Oakland, CA - Construction Impacts - With Standard Conditions of Approval
Maximum DPM Cancer Risk and PM2.5 Calculations From Demolition of Existing PP
Impacts at Off-Site Single Family Homes - 1.5 meter receptor height

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air $(\mu g/m^3)$
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant/Child			Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 16**	**16 - 30**
Parameter				
ASF =	10	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

		Infant/Child - Exposure Information				Infant/Child Cancer Risk	Adult - Exposure Information			Adult Cancer Risk		Maximum	
			DPM Conc (ug/m3)		Age Sensitivity		Modeled DPM Conc (ug/m3)		Age Sensitivity			Fugitive	Total
Exposure Year	**Exposure Duration (years)**	**Age**	**Year**	**Annual**	**Factor**	**(per million)**	**Year**	**Annual**	**Factor**	**(per million)**	**HI**	**PM2.5**	**PM2.5**
0	0.1457534	-0.25 - 0*	2025-2026	0.0248	10	0.20							
1	0.1457534	0 - 1	2025-2026	0.0248	10	0.59	2025-2026	0.0248	1	0.07	0.005	0.0244	0.0492
2	1	1 - 2	2026-2027	0.0000	10	0.00	2026-2027	0.0000	1	0.00	0.000	0.0000	0.000
3	1	2 - 3	2027	0.0000	3	0.00	2027	0.0000	1	0.00			
4	1	3 - 4	2028	0.0000	3	0.00	2028	0.0000	1	0.00			
5	1	4 - 5	2029	0.0000	3	0.00	2029	0.0000	1	0.00			
6	1	5 - 6	2030	0.0000	3	0.00	2030	0.0000	1	0.00			
7	1	6 - 7	2031	0.0000	3	0.00	2031	0.0000	1	0.00			
8	1	7 - 8	2032	0.0000	3	0.00	2032	0.0000	1	0.00			
9	1	8 - 9	2033	0.0000	3	0.00	2033	0.0000	1	0.00			
10	1	9 - 10	2034	0.0000	3	0.00	2034	0.0000	1	0.00			
11	1	10 - 11	2035	0.0000	3	0.00	2035	0.0000	1	0.00			
12	1	11 - 12	2036	0.0000	3	0.00	2036	0.0000	1	0.00			
13	1	12 - 13	2037	0.0000	3	0.00	2037	0.0000	1	0.00			
14	1	13 - 14	2038	0.0000	3	0.00	2038	0.0000	1	0.00			
15	1	14 - 15	2039	0.0000	3	0.00	2039	0.0000	1	0.00			
16	1	15 - 16	2040	0.0000	3	0.00	2040	0.0000	1	0.00			
17	1	16-17	2041	0.0000	1	0.00	2041	0.0000	1	0.00			
18	1	17-18	2042	0.0000	1	0.00	2042	0.0000	1	0.00			
19	1	18-19	2043	0.0000	1	0.00	2043	0.0000	1	0.00			
20	1	19-20	2044	0.0000	1	0.00	2044	0.0000	1	0.00			
21	1	20-21	2045	0.0000	1	0.00	2045	0.0000	1	0.00			
22	1	21-22	2046	0.0000	1	0.00	2046	0.0000	1	0.00			
23	1	22-23	2047	0.0000	1	0.00	2047	0.0000	1	0.00			
24	1	23-24	2048	0.0000	1	0.00	2048	0.0000	1	0.00			
25	1	24-25	2049	0.0000	1	0.00	2049	0.0000	1	0.00			
26	1	25-26	2050	0.0000	1	0.00	2050	0.0000	1	0.00			
27	1	26-27	2051	0.0000	1	0.00	2051	0.0000	1	0.00			
28	1	27-28	2052	0.0000	1	0.00	2052	0.0000	1	0.00			
29	1	28-29	2053	0.0000	1	0.00	2053	0.0000	1	0.00			
30	1	29-30	2054	0.0000	1	0.00	2054	0.0000	1	0.00			
Total Increased Cancer Risk						**0.8**				**0.07**			

* Third trimester of pregnancy

Appendix E Report and Appendix Acronyms and Abbreviations

µg/m^3	Micrograms Per Cubic Meter of Air
AB 2588	Air Toxics Hot Spots Program Risk Assessment
Air Basin	San Francisco Bay Area Air Basin
ATCM	Airborne Toxics Control Measure
BAAQMD	Bay Area Air Quality Management District
BACT	Best Available Control Technology
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEPA	California Environmental Protection Agency
CAP	Clean Air Plan
CARB	California Air Resources Board
CCAA	California Clean Air Act
CEQA	California Environmental Quality Act
CH_4	Methane
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
CY	cubic yard
DPM	Diesel Particulate Matter
EBMUD	East Bay Municipal Utility District
EMFAC	Emission FACtors
g	grams
GHG	Greenhouse Gas
GWP	Global Warming Potential

HCH	Hydrofluorocarbons
HDT	Heavy Duty Truck
HHDT	Heavy Duty Diesel Truck
HI	Hazard Index
HRA	Health Risk Assessment
lbs	pounds
LD	Light Duty
LDA	Light Duty Autos
LDT	Light Duty Trucks
MEI	Maximally exposed individual
mg/m^3	Milligram Per Cubic Meter
MGD	million-gallon-per-day
MHDT	Medium Heavy Duty Diesel Truck
MT	Metric Tons
N_2O	Nitrous Oxide
NAAQS	National Ambient Air Quality Standards
NBio-CO_2	Non-biogenic carbon dioxide
NO	Nitric Oxide
NO_2	Nitrogen Dioxide
NOx	Nitrogen Oxide
O_3	Ground-level-ozone
OEHHA	Office of Environmental Health Hazard Assessment
PAH	Polycyclic Aromatic Hydrocarbon
Pb	Lead
PM	Particulate Matter
PP	Pumping Plant

PPM	Parts Per Million
RCEM	Roadway Construction Emissions Model
ROG	Reactive Organic Gases
SF	square feet
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
SOx	Sulfur Oxide
TAC	Toxic Air Contaminant
U.S. EPA	U.S. Environmental Protection Agency
VMT	Vehicle Miles Traveled