Appendix B

Air Quality and Greenhouse Gas Emissions Estimates

Technical Report

AIR QUALITY AND GREENHOUSE GAS TECHNICAL REPORT THE OAKLAND AIRPORT PERIMETER DIKE PROJECT

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Acronyms and Abbreviations

APD	Airport Perimeter Dike
BAAQMD	Bay Area Air Quality Management District
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emission Estimator Model
CARB	California Air Resources Board
CDSM	Cement Deep Soil Mixing
CEQA	California Environmental Quality Act
City	City of Oakland
CCR	California Code of Regulations
CFR	Code of Federal Regulations
CH4	Methane
CO	Carbon Monoxide
CO2	Carbon Dioxide
CO2e	Carbon Dioxide Equivalent
DPM	Diesel Particulate Matter
ECAP	Equitable Climate Action Plan
FEMA	Federal Emergency Management Agency
ft	feet
GHG	Greenhouse Gas
GWP	Global Warming Potential
HAP	Hazardous Air Pollutants
HFC	hydrofluorocarbons
H2S	Hydrogen Sulfide
hr	hour
IPCC	Intergovernmental Panel on Climate Change
lb	pound
m	meter
MMT	Million Metric Tonnes
MND	Mitigated Negative Declaration
Montrose	Montrose Environmental
NAAQS	National Ambient Air Quality Standards

NPORDS	North Port of Oakland Refuse Disposal Site
NOAA	National Oceanic and Atmospheric Administration
N2O	Nitrous oxide
NOx	Oxides of Nitrogen
NO2	Nitrogen Dioxide
O3	Ozone
OAK	Oakland International Airport
Pb	Lead
PFC	perfluorocarbons
PM	Particulate Matter
ppb	parts per billion
ppm	parts per million
Port	Port of Oakland
Project	Oakland Airport Perimeter Dike Project
ROG	Reactive Organic Gases
SF6	Sulfur hexafluoride
SFBAAB	San Francisco Bay Area Air Basin
SO2	Sulfur Dioxide
TAC	Toxic Air Contaminant
tpy	tons per year
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
ZEV	Zero Emission Vehicles
°F	degrees Fahrenheit
µg	microgram

1 Introduction

1.1 Project Overview

The Port of Oakland (Port) is planning for the completion of the Seismic Improvements to the Oakland Airport Perimeter Dike (APD) Project (Project). The primary objective of the Project is to maintain the flood protection of the Oakland airport perimeter dike system following a major earthquake in the San Francisco Bay Area. In 2015, the Port adopted the APD Federal Emergency Management Agency (FEMA) Seismic Improvements Project Mitigated Negative Declaration (MND), to meet the requirements of the California Environmental Quality Act (CEQA) Statute and Guidelines. Following that approval, it was determined that revisions to the project description of the APD Project were needed to meet the project objectives. The revisions to the project description include but are not limited to:

- Change of source material for construction of the APD.
- Change of seismic improvement method to cement deep soil mixing (CDSM).
- Change to material management approach, including hauling of excess soil-cement and other soil generated by the seismic improvement construction to destinations:
    - Disposed of at an offsite landfill; and/or
    - Reused at a former landfill site, the North Port of Oakland Refuse Disposal Site (NPORDS), where the excess material will be placed on the surface and spread to increase cover thickness approximately 3 feet.

This technical report describes the air quality and greenhouse gas (GHG) conditions for the changes in the APD Project and export of material and placement to the NPORDS. This analysis includes a description of existing regulatory framework, an assessment of project construction and operation-period air quality and GHG emissions, and an evaluation of the project's compliance with adopted plans related to the reduction of air quality and GHG emissions.

1.2 Location and Study Area

The Proposed Project site (Oakland International Airport) is owned by the Port of Oakland and located in the City of Oakland in Alameda County, California. Oakland Airport is 2 miles west of Interstate 880, and is adjacent to San Francisco Bay (**Figure 1**). The Oakland Airport is primarily bounded by Doolittle Drive on the northeast and north, Harbor Bay Parkway on the northwest, San Francisco Bay on the southwest, and San Leandro Bay on the northeast. According to the City of Oakland General Plan, the Airport is in the Seaport and Airport/Showcase District, which serves to attract related and compatible commercial and industrial uses. The planned land uses in the area of the Airport are consistent with existing land use patterns, and land use changes in this part of Oakland are not anticipated.

The perimeter dike study area extends approximately 4.5 miles and forms the boundary between the Airport and its facilities and San Francisco Bay. The new reinforcement method is proposed will occur within a ¾ mile stretch at the northern end of the perimeter dike. The NPORDS study area is an approximately 10-acre site located at the southeast corner of Harbor Bay Parkway and Doolittle

Drive in Oakland, California. The parcel is owned by the Port of Oakland and is currently an undeveloped vacant lot. The lot has been subject to historic refuse disposal since approximately 1950. The landfill was closed 1974 and is now regulated by Alameda County Department of Environmental Health. Surrounding land uses include a municipal golf course, opposite of the site entrance, a closed sports field, National Oceanic and Atmospheric Administration (NOAA) Weather Facility, and a former Rolls Royce Engine Testing Facility.

Figure 1: Project Location-Perimeter Dike

Figure 2: Project Location-NPORDS Landfill

2 Regulatory Setting

2.1 Air Quality

Air quality regulation and policies are set at the federal, state, and local levels.

2.1.1 Federal Regulations and Policies

The Clean Air Act is implemented by the United States Environmental Protection Agency (US EPA) and sets ambient emission limits, National Ambient Air Quality Standards (NAAQS), for six criteria air pollutants: coarse particulate matter with a diameter less than 10 micrometers (PM10), fine particulate matter with a diameter less than 2.5 micrometers (PM2.5) , carbon monoxide (CO), nitrogen dioxide (NO2), ozone (O3), and lead. **Table 1** shows the current attainment status for NAAQS and California Ambient Air Quality Standards (CAAQS) in the Proposed Project area's air basin—the San Francisco Bay Area Air Basin (SFBAAB).

The SFBAAB is currently classified as non-attainment for the one-hour state O_3 standard as well as for the federal and state eight-hour standards. Additionally, the SFBAAB is classified as non-attainment for the state 24-hour and annual arithmetic mean PM10 standards, as well as the state annual arithmetic mean and the national 24-hour PM2.5 standards. The SFBAAB is unclassified, or classified as attainment for all other pollutant standards.

USEPA, and in California, California Air Resources Board (CARB) regulate various stationary sources, area sources (e.g., gas stations, dry-cleaners, print shops, cleaners and other solvent use, storage piles), and mobile sources of air pollutant emissions. USEPA has regulations involving performance standards for specific sources that may release pollutants known to cause or suspected of causing cancer or other serious health effects known as toxic air contaminants (TACs) or known at the federal level as hazardous air pollutants (HAPs). In addition, USEPA has regulations involving emission standards for off-road sources such as emergency generators, construction equipment, and vehicles, as well as other releases of toxic chemicals.

Table 1: State and Federal Ambient Air Quality Standards and Bay Area Air Basin Attainment Status

Pollutant	Averaging Time	CAAQS Concentration	CAAQS Attainment Status	NAAQS Concentration	NAAQS Attainment Status
O_3	8-Hour	0.070 ppm	N	0.070 ppm	N
	1-Hour	0.09 ppm	N	N/A	N/A
CO	8-Hour	9.0 ppm	A	9 ppm	A
	1-Hour	20 ppm	A	35 ppm	A
	1-Hour	0.18 ppm	A	0.100 ppm	N/A

NO_2	Annual Arithmetic Mean	0.030 ppm	U	0.053 ppm	A
SO_2	24-Hour	0.04 ppm	A	0.14 ppm	N/A
	1-Hour	0.25 ppm	A	0.075 ppm	N/A
	Annual Arithmetic Mean	N/A	N/A	0.030 ppm	N/A
PM_{10}	Annual Arithmetic Mean	20 µg/m^3	N	N/A	N/A
	24-Hour	50 µg/m^3	N	150 µg/m^3	U
$PM_{2.5}$	Annual Arithmetic Mean	12 µg/m^3	N	9 µg/m^3	U/A
	24-Hour	N/A	N/A	35 µg/m^3	N
Sulfates	24-Hour	25 µg/m^3	A	N/A	N/A
Lead	30-Day Average	1.5 µg/m^3	A	N/A	N/A
	Calendar Quarter	N/A	N/A	1.5 µg/m^3	A
	Rolling 3-Month Average	N/A	N/A	0.15 µg/m^3	N/A
Hydrogen Sulfide	1-Hour	0.03 ppm	U	N/A	N/A
Vinyl Chloride	24-Hour	0.010 ppm	No Information Available	N/A	N/A
Visibility Reducing Particles	8-Hour	Extinction Coefficient of 0.23 kilometer with relative humidity less than 70%	U	N/A	N/A

Notes:

A = Attainment; CAAQS = California Ambient Air Quality Standards; NAAQS = National Ambient Air Quality Standards; N = Non-attainment; U = Unclassified; N/A = Not Applicable, no applicable standard; ppm = parts per g/m = micrograms per cubic meter.

1. CAAQS for O_3, CO (except Lake Tahoe), SO_2 (1-hour and 24-hour), NO_2, PM, and visibility reducing particles are values that are not to be exceeded. All other state standards shown are values not to be equaled or exceeded.
2. NAAQS, other than O_3 and particulates, and those based on annual averages or annual arithmetic means, are not to be exceeded more than once a year. The 1-hour O_3 standard is attained if, during the most recent three-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one. The 8-hour O_3 standard is attained when the 3-year average of the fourth highest daily concentration is 0.070 ppm or less. The 24-hour PM_{10} standard is attained when the 3-year average of the 99th percentile of monitored concentrations is less than the standard. The 24-hour $PM_{2.5}$ standard is attained when the 3-year average of the 98th percentile is less than the standard.
3. The USEPA revoked the national 1-hour O_3 standard on June 15, 2005.
4. This federal 8-hour O_3
5. On October 1, 2015, the national 8-hour O_3 primary and secondary standards were lowered from 0.075 to 0.070 ppm. An area will meet the standard if the fourth-highest maximum daily 8-hour O_3 concentration per year, averaged over three years, is equal to or less than 0.070 ppm. USEPA made recommendations on

attainment designations for California by October 1, 2016, and issued final designations on June 4, 2018, classifying the San Francisco Bay Area Air Basin as being in Nonattainment (Federal Register Vol. 83, No. 107, pp. 25776-25848). Nonattainment areas will have until 2020 to 2037 to meet the health standard, with attainment dates varying based on O_3 level in the area.

6. To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010).
7. On June 2, 2010, the USEPA 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 1-hour daily maximum concentrations. The existing 0.030 ppm annual and 0.14 ppm 24-hour SO_2 NAAQS must, however, continue to be used until one year following USEPA initial designations of the new 1-hour SO_2 NAAQS. USEPA classified the San Francisco Bay Area Air Basin as being in Attainment/Unclassifiable in January 2018 (Federal Register Vol. 83, No. 6, pp. 1098-1172).
8. State standard = annual geometric mean
9. In June 2002, CARB established new annual standards for $PM_{2.5}$ and PM_{10}.
10. National lead standard, rolling three-month average: final rule signed October 15, 2008. Final designations effective December 31, 2011.
11. CARB has identified lead and vinyl chloride as toxic air contaminants, with no threshold level of exposure below which there are no adverse health effects determined.
12. Statewide visibility reducing particle standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.
13. On January 9, 2013, USEPA issued a final rule, determining that SFBAAB has attained the 24-hour $PM_{2.5}$ national standard. This rule suspends key SIP requirements as long as monitoring data continue to show that SFBAAB attains the standard. Despite this USEPA action, SFBAAB will continue to be designated as "nonattainment" for the national 24-hour $PM_{2.5}$ standard until BAAQMD submits a "redesignation request" and a "maintenance plan" to USEPA, and USEPA approves the proposed redesignation.
14. On February 7, 2024 the USEPA strengthened the NAAQS for the annual PM2.5 to 9.0 micrograms per cubic meter. New designations for this standard will be available within two years of issuing the revised NAAQS. It is anticipated that Alameda County would not meet the new standard.

Sources: BAAQMD 2017a; USEPA 2023

Non-road Emission Regulations

USEPA has adopted emission standards for different types of non-road engines, equipment, and vehicles. For non-road diesel engines, USEPA has adopted multiple tiers of emission standards.

USEPA signed a final rule on May 11, 2004, introducing the Tier 4 emission standards, to be phased in between 2008 and 2015 (69 CFR 38957–39273, June 29, 2004). The Tier 4 standards require that emissions of PM and NOx be further reduced by about 90 percent. Such emission reductions can be achieved by using control technologies, including advanced exhaust gas after-treatment. To enable sulfur-sensitive control technologies in Tier 4 engines, USEPA also mandated reductions in sulfur content in non-road diesel fuels. In most cases, federal non-road regulations also apply in California; states have limited authority to set emission standards for new non-road engines.

On-Road Vehicle Emission Regulations and Corporate Average Fuel Economy Standards

The USEPA and National Highway Transportation Safety Administration (NHTSA) have issued rules regarding the national program of fuel economy standards for passenger vehicles and light-duty trucks of model years 2017 through 2025, culminating in fuel economy of 54.5 miles per gallon (mpg) by model year 2025 (USEPA 2012). Similarly, fuel economy standards have been issued for medium- and heavy-duty vehicles of model years 2014-2018, including large pickup trucks and vans, semi-trucks, and all types and sizes of work trucks and buses (USEPA and USDOT 2011).

The NHTSA and the USEPA updated the Corporate Average Fuel Economy (CAFE) and GHG emissions standards for passenger cars and light trucks and established new standards covering model years 2021 through 2026, under the Safer Affordable Fuel Efficient (SAFE) vehicles final rule (SAFE Rule Part Two). This rule, which went into effect on June 29, 2020, rolled back some of the fuel efficiency mandates that had been in effect. In March 2022, CAFE standards were finalized for model years 2024 through 2026. The final rule establishes standards that require an industry-wide fleet average of approximately 49 mpg for passenger cars and light trucks. Current rule-making is under way to establish standards for model years 2027 and beyond for passenger cars and light trucks, standards for model years 2029 and beyond for heavy-duty pickup trucks and vans, and standards for model years 2030 and beyond for medium- and heavy-duty on-highway vehicles and work trucks.

In 2019, the NHTSA and the USEPA also issued a regulation revoking California's Clean Air Act waiver, which had allowed California to set its own emissions standards, asserting that the waiver was preempted by federal law. On December 21, 2021, the NHTSA published its CAFE Preemption rule, which finalizes its repeal of the SAFE Rule Part One. The USEPA rescinded SAFE Rule Part One on March 9, 2022, and reinstated California's authority under the Clean Air Act to implement its own GHG emission standards and zero-emission vehicle (ZEV) sales mandate. Notably, California harmonized its vehicle efficiency standards through 2025 with the federal standards through the Advanced Clean Cars Program.

2.1.2 State Regulations and Policies

Ambient Air Quality Standards

CARB sets standards for criteria pollutants in California that are more stringent than the NAAQS and include the following additional contaminants: visibility-reducing particles, hydrogen sulfide, sulfates, and vinyl chloride. Table 1 provides the CAAQS and their corresponding attainment status for the Proposed Project's air basin. The Proposed Project area is in Alameda County within the SFBAAB. BAAQMD has the responsibility to monitor ambient air pollutant levels throughout the basin, and to develop and implement strategies to attain the applicable federal and state standards.

As shown in Table 1, the SFBAAB is currently classified as non-attainment for the one-hour state O_3 standard as well as for the federal and state eight-hour standards. Additionally, the SFBAAB is classified as non-attainment for the state 24-hour and annual arithmetic mean PM10 standards, as well as the state annual arithmetic mean and the national 24-hour PM2.5 standards. The SFBAAB is unclassified or classified as attainment for all other pollutant standards.

CARB is responsible for setting emission standards for vehicles (on-road and off-road) sold in California and for other emission sources, such as consumer products and certain off-road equipment. CARB also establishes passenger vehicle fuel specifications. CARB has granted authority to the regional air quality management districts and county air pollution control districts to develop stationary source emissions standards, issue air quality permits, and enforce permit conditions.

In-Use Off-Road Diesel Vehicle Regulation

In 2007, CARB adopted a regulation to reduce DPM and NOx emissions from in-use, off-road, heavy-duty diesel vehicles in California. The regulation imposes limits on vehicle idling and requires fleets to reduce emissions by retiring, replacing, repowering, or installing exhaust retrofits to older engines. In December 2011, the regulation was amended to modify the compliance dates for performance standards and establish requirements for compliance with verified diesel emission control strategy technologies that reduce PM and/or NOx emissions. The regulation is in the process of finalizing additional amendments, which would require phase-out of the oldest and highest emitting off-road engines and restrict the addition of vehicles with Tier 3 and Tier 4 interim engines. The rulemaking starting in 2024 would also require contracting entities to obtain and retain a fleet's valid Certificate of Reported Compliance prior to awarding a contract or hiring a fleet; mandate the use of R99 or R100 Renewable Diesel for all fleets, with some limited exceptions; and provide additional requirements to increase enforceability and provide flexibility for permanent low-use vehicles.

AB 1346: Air Pollution: small off-road engines

Assembly Bill 1346 (AB 1346) required CARB to adopt cost-effective and technologically feasible regulations to prohibit engine exhaust and evaporative emissions from new Small Off-Road Engines (SORE) by July 1, 2022 for engines produced on or after January 1, 2024, or as soon as CARB determines is feasible. SORE are spark-ignition engines rated at or below 19 kilowatts, and are typically used in lawn and gardening equipment, outdoor power equipment, and specialty vehicles. In determining technological feasibility, CARB is to consider emissions from SOREs in the state; timeline for zero-emission SORE development; increased electricity demand from charging zero-emission SORE; cases for both commercial and residential users of SOREs; and expected availability of zero-emission generators and emergency response equipment. In addition, CARB is to identify and make funds available for rebates or incentive funding. CARB adopted engine exhaust emission regulations for small off-road engines in compliance with AB 1346, requiring most new small off-road engines to be zero emissions by 2024. The Proposed Project may use SORE engines during construction.

Portable Equipment Registration Program

The statewide Portable Equipment Registration Program (PERP) establishes a system to uniformly regulate portable engines and portable engine–driven equipment units such as generators. After being registered in this program, engines and equipment units may operate throughout the state without the need to obtain permits from individual air districts. Owners or operators of portable engines and certain types of equipment can voluntarily register their units under this program. Operation of registered portable engines may still be subject to certain district requirements for reporting and notification. Engines with less than 50 brake horsepower (hp) are exempt from this program. Some of the engines used for the Proposed Project may operate under PERP.

California Standards for Diesel Fuel Regulations

These regulations require diesel fuel with sulfur content of 15 parts per million (ppm) or less (by weight) to be used for all diesel-fueled vehicles that are operated in California. The standard also applies to non-vehicular diesel fuel, other than diesel fuel used solely in locomotives or marine vessels, which are regulated under federal and international regulations. The regulations also contain standards for the aromatic hydrocarbon content and lubricity of diesel fuels.

Advanced Clean Trucks Regulation

The Advanced Clean Trucks regulation is a manufacturers ZEV sales requirement and a one-time reporting requirement for large entities and fleets. The regulation contains requirements for truck manufacturers to increase the percentage of sales in California that are ZEV over time while allowing for credit generation and credit redemption. Under this rule, every new truck sold in California must be zero emission by 2045. This regulation pairs with the Advanced Clean Fleets Regulation.

Advanced Clean Fleets Regulation

he Advanced Clean Fleets (ACF) regulation is part of the CARB's overall approach to accelerate a large-scale transition to zero-emission medium- and heavy-duty vehicles. This regulation works in conjunction with the Advanced Clean Trucks (ACT) regulation which helps ensure that zero-emission vehicles (ZEV) are brought to market. The ACF regulation applies to fleets performing drayage operations, those owned by State, local, and federal government agencies, and high priority fleets. High priority fleets are entities that own, operate, or direct at least one vehicle in California, and that have either $50 million or more in gross annual revenues, or that own, operate, or have common ownership or control of a total of 50 or more vehicles (excluding light-duty package delivery vehicles). The regulation affects medium- and heavy-duty on-road vehicles with a gross vehicle weight rating greater than 8,500 pounds, off-road yard tractors, and light-duty mail and package delivery vehicles. Manufacturers may sell only zero-emission medium- and heavy-duty vehicles starting in 2036. High priority and federal fleets must comply with the Model Year Schedule or may elect to use the optional ZEV Milestones Option to phase-in ZEVs into their fleets. Model year schedule fleets must purchase only ZEVs beginning 2024 and, starting January 1, 2025, must remove internal combustion engine vehicles at the end of their useful life as specified in the regulation. ZEV Milestones Option allows fleets to elect to meet ZEV targets as a percentage of the total fleet starting with vehicle types that are most suitable for electrification.

State and local government fleets, including city, county, special district, and State agency fleets, are required to ensure 50 percent of vehicle purchases are zero-emission beginning in 2024 and 100 percent of vehicle purchases are zero-emission by 2027. Small government fleets (those with 10 or fewer vehicles) and those in designated counties must start their ZEV purchases beginning in 2027. Alternately, State and local government fleet owners may elect to meet ZEV targets using the ZEV Milestones Option. State and local government fleets may purchase either ZEVs or near-ZEVs, or a combination of ZEVs and near-ZEVs, until 2035. Starting in 2035, only ZEVs will meet the requirements.

The requirements include an exemption for cases in which a ZEV is not available for purchase and is needed to comply. The ZEV Purchase Exemption allows a fleet owner to purchase a new internal combustion engine vehicle and exclude it from the internal combustion engine vehicle removal requirement.

Heavy-Duty On-Board Diagnostic System Regulations

In 2004, CARB adopted regulations requiring on-board diagnostic (OBD) systems on all 2007 and later model year heavy-duty engines and vehicles (i.e., vehicles with a gross vehicle weight rating greater than 14,000 pounds) in California. CARB subsequently adopted a comprehensive OBD regulation for heavy-duty vehicles model years 2010 and beyond. The heavy-duty OBD regulations were updated in 2010, 2013, and 2016, with revisions to enforcement requirements, testing requirements, and implementation schedules. Heavy-duty trucks used during the Proposed Project construction would be required to comply with the heavy-duty OBD regulatory requirements.

Heavy-duty Vehicle Inspection Program

The heavy-duty vehicle inspection program requires heavy-duty trucks and buses to be inspected for excessive smoke and tampering, and for compliance with engine certification labels. Any heavy-duty vehicle (i.e., a vehicle with a gross vehicle weight rating greater than 14,000 pounds) traveling in California, including vehicles registered in other states and foreign countries, may be tested. Tests are performed by CARB inspection teams at border crossings, California Highway Patrol weigh stations, fleet facilities, and randomly selected roadside locations. Owners of trucks and buses found to be in violation are subject to penalties starting at $300 per violation. Heavy-duty trucks used during project construction would be subject to the inspection program.

Advanced Clean Cars Program

The Advanced Clean Cars emissions-control program was approved by CARB in 2012, and is closely associated with the Pavley regulations, which were the first set of regulations for vehicles that addressed GHG emissions. The program requires a greater number of ZEV models for the years 2015 through 2025 to control smog, soot, and GHG emissions. This program includes the Low-Emissions Vehicle (LEV) regulations to reduce criteria pollutants and GHG emissions from light- and medium-duty vehicles, as well as the ZEV regulations requiring manufacturers to produce an increasing number of pure ZEVs (i.e., battery and fuel cell electric vehicles) with the provision to produce plug-in hybrid electric vehicles (PHEV) between 2018 and 2025.

Due to the federal adoption of the Final SAFE Rule, new cars of model years 2021 through 2026 are not currently required to achieve the fuel economy targets set by the Advanced Clean Cars program. The rule was judicially challenged, but the litigation has been placed in abeyance while undergoing review by the Biden administration.

Toxic Air Contaminants

CARB regulates TACs to reduce emissions under the Airborne Toxic Control Measures (ATCMs); the following relevant measures to address sources of TACs:

- ATCM for Diesel Particulate Matter (DPM) from Portable Engines Rated at 50 Horsepower and Greater
- ATCM to Limit Diesel-Fueled Commercial Motor Vehicle Idling
- ATCM to Reduce Particulate Emissions from Diesel-Fueled Engines Standards for Non-vehicular Diesel Fuel
- ATCM for Stationary Compression Ignition Engines
- Asbestos ATCM for Construction, Grading, Quarrying, and Surface Mining Operations

- Asbestos ATCM for Surfacing Applications

In addition to ATCMs, TACs are controlled under several regulations in California, including the Tanner Air Toxics Act, Air Toxics Hot Spots Information Act, and AB 2588: Air Toxics "Hot Spots" Information and Assessment Act. In addition, Proposition 65 (the Safe Water and Toxic Enforcement Act of 1996) requires the state to publish a list of chemicals known to cause cancer or birth defects or other reproductive harm. Proposition 65 requires businesses to notify Californians about substantial amounts of chemicals in the products they purchase or that are released into the environment.

Odors

Odors are commonly regarded as a form of public nuisance, and in the United States, many states have adopted regulations to limit odors generated by odorous operations. In California, odors are regulated through California Health and Safety Code (HSC) Section 41700, which states: "A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, determent, nuisance, or annoyance to any considerable number of people." The regulation does not contain guidance on how to define or determine a violation. As a result, local agencies are typically responsible for establishing enforcement criteria. Many agencies have developed their own criteria based on the acceptable number of complaints reported for a particular incident or facility, and a violation is issued if the criteria are not satisfied. In most cases, each odor complaint is investigated by authorized personnel from the responsible agency to determine the source and cause, as well as to determine the validity of the complaint. If the complaint is verified, then it would be classified as a confirmed complaint; otherwise, the complaint would be classified as unconfirmed.

AB 617 and CARB Community Air Protection Program

AB 617 requires CARB to develop a uniform statewide system for annual reporting of emissions of criteria air pollutants and TACs for use by certain categories of stationary sources and requires the stationary sources to report their annual emissions as specified. The law requires air districts in nonattainment for one or more air pollutants to adopt an expedited schedule for the implementation of best available retrofit control technology. It also requires CARB to establish and maintain a statewide clearing house that identifies the best available control technology or best available retrofit control technology. The law also requires CARB to prepare a statewide strategy to reduce emissions of TACs and criteria pollutants in communities affected by a high cumulative exposure burden.

CARB established the Community Air Protection Program (CAPP) to implement the requirements of AB 617. The CAPP's focus is to reduce exposure in the communities most affected by air pollution. Communities around the state are working together to develop and implement new strategies to measure air pollution and reduce health impacts.

This first-of-its-kind statewide effort includes community air monitoring and community emissions reduction programs. In addition, the California State Legislature appropriated funding to support early actions to address localized air pollution through targeted incentive funding that will deploy cleaner technologies in these communities, as well as grants to support community participation in the AB 617 process. AB 617 also includes new requirements for accelerated retrofit of pollution controls on industrial sources, increased penalty fees, and greater transparency and availability of air quality and emissions data, which will help advance air pollution control efforts throughout the state. East Oakland was recently selected to participate in the CAPP, and to develop a Community Emissions Reduction Plan. Oakland Airport is included in the East Oakland

community footprint and the Port is participating as a steering committee member of the AB 617 East Oakland Steering Committee.

2.1.3 Regional Regulations and Policies

Bay Area Air Quality Management District

The BAAQMD regulates stationary sources of air pollution in the nine San Francisco Bay Area (Bay Area) counties to achieve and maintain air quality standards. The BAAQMD adopts and enforces rules and regulations, issues air quality permits for equipment that emits air pollutants, and monitors air quality and meteorological conditions. BAAQMD has local air quality jurisdiction over the Proposed Project area.

BAAQMD 2017 Clean Air Plan

The BAAQMD has developed the Spare the Air-Cool the Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area Final 2017 Clean Air Plan (2017 Clean Air Plan), which details planned efforts to improve Bay Area air quality, including reducing PM and TAC emissions, and protect public health. In addition, the 2017 Clean Air Plan simultaneously updates the 2010 Clean Air Plan, which is the most recent ozone plan for the Bay Area, to comply with state air quality planning requirements and reduce ozone precursors (BAAQMD 2017b). The 2017 Clean Air Plan contains a control strategy that includes 85 individual control measures to reduce emissions of CAPs and GHGs from the full range of emission sources. The measures include stationary (industrial) sources, transportation, energy, buildings, agriculture, natural and working lands, waste management, and water (BAAQMD 2017b).

Community Air Risk Evaluation (CARE) Program

In 2004, BAAQMD initiated the Community Air Risk Evaluation (CARE) program. This program has helped identify communities in the Bay Area that are disproportionately impacted by local emission sources. The CARE program serves as a foundation for BAAQMD's efforts to reduce human exposure to TACs, including DPM, in communities that experience higher than average pollution levels. These communities are generally located near sources of pollution (e.g., freeways, industrial facilities), and thus have higher levels of risk from TAC exposure. The CARE program goals are as follows: (1) identify areas where air pollution contributes most to health impacts and where populations are most vulnerable to air pollution; (2) apply sound scientific methods and strategies to reduce health impacts in these areas; and (3) engage community groups and other agencies to develop additional actions to reduce local health impacts. BAAQMD-designated CARE communities are located in Concord, Richmond/San Pablo, eastern San Francisco, western Alameda County, Vallejo, San Rafael, Pittsburg/Antioch, and San José. The Airport and its surrounding neighborhoods are located within the CARE area in western Alameda County.

BAAQMD Rules

The BAAQMD supports incentive programs to reduce criteria air pollutant emissions in the district and has established rules and permitting requirements. The Proposed Project would be subject to the following BAAQMD rules, as applicable:

- Regulation 6, Rule 6: Prohibition of Trackout limits the quantity of PM in the atmosphere through control of trackout of solid materials onto paved public roads outside the boundaries of large construction sites.

• Regulation 7: Odorous Substances places general limitations on odorous substances and specific emission limitations on certain odorous compounds.

• Regulation 11, Rule 14: Asbestos-Containing Serpentine limits the use of serpentine material with >5 percent asbestos content for covering roads or paths.

2.2 GHG

This section summarizes federal, state, and local laws, regulations, and policies pertinent to the evaluation of the Proposed Project's impacts on GHG emissions.

2.2.1 Federal Regulations and Policies

At the federal level, the USEPA has developed regulations to reduce GHG emissions from motor vehicles and has developed permitting requirements for large stationary emitters of GHGs. For further information regarding the current USEPA and NHTSA joint rulemaking for vehicle standards, see Section 2.1.1, Air Quality Regulatory Setting. Policies at the federal level focus on energy efficiency, renewable energy, methane and other non-CO2 gases, agricultural practices, and implementation of technologies to achieve GHG reductions.

2.2.2 State Regulations and Policies

California regulates GHG emissions through legislation, rules, and executive orders, as described further below.

State of California Executive Orders

Executive Order S-3-05. In 2005, in recognition of California's vulnerability to the effects of climate change, then-Governor Schwarzenegger issued Executive Order (EO) S-3-05, which set forth a series of target dates by which statewide emissions of GHGs would be progressively reduced, as follows:

• By 2010, reduce GHG emissions to 2000 levels;

• By 2020, reduce GHG emissions to 1990 levels; and

• By 2050, reduce GHG emissions to 80 percent below 1990 levels.

Executive Order S-1-07. EO S-1-07, which was signed by then-Governor Schwarzenegger in 2007, proclaims that the transportation sector is the main source of GHG emissions in California, generating more than 40 percent of statewide emissions. It establishes a goal to reduce the carbon intensity of transportation fuels sold in California by at least 10 percent by 2020 and directed that a Low Carbon Fuel Standard (LCFS) be established for California. CARB approved the proposed regulation to implement the LCFS in 2009.

Executive Order S-13-08. Then-Governor Schwarzenegger signed EO S-13-08 on November 14, 2008. The order called on state agencies to develop California's first strategy to identify and prepare for expected climate impacts. As a result, the 2009 California Climate Adaptation Strategy (CAS) report was developed to summarize the best-known science on climate change impacts in the state, assess vulnerability, and outline possible solutions that can be implemented in and across state agencies to promote resiliency (CNRA 2009), and updated in 2014 (CNRA 2014). The state has also developed an Adaptation Planning Guide (California Emergency Management Agency [CEMA] 2012) to provide a decision-making framework intended for use by local and regional stakeholders to aid

in the interpretation of climate science and develop a systematic rationale for reducing risks caused or exacerbated by climate change. The state's third major assessment (CNRA 2018) on climate change explores local and statewide vulnerabilities to climate change, highlighting opportunities for taking concrete actions to reduce climate-change impacts.

Executive Order B-30-15. Then-Governor Brown signed EO-B-30-15 on April 29, 2015, which directed the following:

- Established a new interim statewide reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030;
- Ordered all state agencies with jurisdiction over sources of GHG emissions to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 (80 percent below 1990 levels) reduction targets; and
- Directed CARB to update the Climate Change Scoping Plan to express the 2030 target in terms of MMTCO2e.

Executive Order B-55-18. On September 10, 2018, then-Governor Brown signed EO B-55-18, committing California to total, economy-wide carbon neutrality by 2045. EO B-55-18 directs CARB to work with relevant State agencies to develop a framework to implement these goals, and accounting that tracks progress toward this goal.

Executive Order N-79-20. In EO N-79-20, Governor Newsom states that "clean renewable fuels play a role as California transitions to a decarbonized transportation sector." EO N-79-20 directs as follows:

"[T]o support the transition away from fossil fuels consistent with the goals established in this Order and California's goal to achieve carbon neutrality by no later than 2045, the California Environmental Protection Agency and the California Natural Resources Agency, in consultation with other State, local and federal agencies, shall expedite regulatory processes to repurpose and transition upstream and downstream oil production facilities...."

The Governor's Order also directs CARB to "develop and propose strategies to continue the State's current efforts to reduce the carbon intensity of fuels beyond 2030 with consideration of the full life cycle of carbon."

State of California Policy and Legislation

Assembly Bill 32 and Senate Bill 32 – California Global Warming Solutions Act

In September 2006, then-Governor Schwarzenegger signed the California Global Warming Solutions Act (Assembly Bill [AB] 32). AB 32 (California Health and Safety Code, Division 25.5) establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on statewide GHG emissions. AB 32 required that statewide GHG emissions be reduced to 1990 levels by 2020. This reduction was intended to be accomplished by enforcing a statewide cap on GHG emissions that was phased in starting in 2012. To effectively implement the cap, AB 32 directed CARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources.

In 2016, Senate Bill (SB) 32 and its companion bill AB 197 amended California Health and Safety Code, Division 25.5 Section 38500 et seq. and established a new GHG reduction target of 40 percent below 1990 levels by 2030. The bills also include provisions to ensure the benefits of state climate policies reach into disadvantaged communities. In 2022, Assembly bill 1279 codified the 2045 carbon

neutrality goal of EO B-55-18 by declaring that it is the policy of the state to achieve net zero GHG emissions no later than 2045, to achieve and maintain net negative GHG emissions thereafter, and to ensure that by 2045 statewide anthropogenic GHG emissions are reduced to at least 85 percent below the 1990 levels.

Scoping Plan

A specific requirement of AB 32 was to prepare a Climate Change Scoping Plan for achieving the maximum technologically feasible and cost-effective GHG emission reduction by 2020. CARB developed and approved the initial Scoping Plan in 2008, outlining the regulations, market-based approaches, voluntary measures, policies, and other emission reduction programs that would be needed to meet the 2020 statewide GHG emission limit and initiate the transformations needed to achieve the state's long-range climate objectives (CARB 2009).

Most recently, CARB approved the 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan) in December 2022. The 2022 Scoping Plan outlines the proposed framework of action for achieving the 2045 GHG target of an 85 percent reduction in GHG emissions relative to 1990 levels; the update also adds carbon neutrality as a science-based guide for California's climate work (CARB 2022). The 2022 Scoping Plan outlines how carbon neutrality can be achieved to reduce GHGs to meet the emission targets by reducing anthropogenic emissions and expanding actions to capture and store carbon. New to the 2022 Scoping Plan is a commitment to incorporate and quantify natural and working lands as a key component to GHG reductions and actions around capture and storage of carbon. The 2022 Scoping Plan strategy for meeting the state's 2030 GHG target incorporates the full range of legislative actions and state-developed plans that have relevance to the year 2030. The 2022 Scoping Plan is heading toward the 2045 target of 85 percent below 1990 levels and carbon neutrality, including the following reductions in key sectors:

- The transportation sector targets reductions based on the technology of vehicles and associated refueling infrastructure for those vehicles; the fuel used as the energy source to power vehicles and the facilities that produce them; and vehicle miles traveled (VMT), which relates to development patterns and available transportation options.
- The electricity grid sector has a target of 38 MMTCO2e in 2030 and 30 MMTCO2e in 2035, which includes a goal of generating 20 gigawatts of offshore wind by 2045 and specifies that the increased demand for electrification occurs without new fossil gas–fired resources.
- The manufacturing and building sector include increased electrification of energy demand for construction equipment, as well as across many manufacturing sectors and buildings.
- CO2 removal and capture include carbon capture and storage facilities and mechanical systems to remove CO2 from the ambient air.
- Short-lived climate pollutants, including non-combustion methane emissions, are reduced with various strategies.
- Natural and working lands sectors include targets to conserve natural working lands and coastal waters, and to implement actions to accelerate natural removal of carbon and improve resilience to climate change.

In the 2022 Scoping Plan, CARB recommends statewide targets of no more 226 MMTCO2e from AB 32 GHG inventory sector emissions and 7 MMTCO2e from natural and working lands, a reduction from carbon capture and sequestration due to avoided GHG emissions from industry and electric sectors of 13 MMTCO2e, and a reduction of 7 MMTCO2e from CO2 removal, including carbon sequestration on natural and working lands, as well as direct air capture and bio-energy with carbon

capture and sequestration. The net 2030 GHG emissions, accounting for emissions and removal or sequestration, is 226 MMTCO2e. For the 2045 scenario in the 2022 Scoping Plan, maximum GHG emissions from AB 32 inventory sector emissions are 65 MMTCO2e, emissions from working lands are 7 MMTCO2e, and reductions from carbon capture and sequestration and CO2 removal are 100 MMTCO2e. This is a net reduction of 3 MMTCO2e by 2045.

Tractor-Trailer Greenhouse Gas Regulation

CARB's Tractor-Trailer Greenhouse Gas regulation reduces the energy consumption of large trucks. CARB developed this regulation to make heavy-duty tractors more fuel efficient. Fuel efficiency is improved by requiring the use of aerodynamic tractors and trailers that are also equipped with tires that have a low rolling resistance. The tractors and trailers subject to this regulation must either use USEPA SmartWay (SmartWay) certified tractors and trailers or retrofit their existing fleet with SmartWay-verified technologies. The SmartWay certification process is part of the broader voluntary program called the SmartWay Transport Partnership Program. The regulation applies primarily to owners of 53-foot or longer box-type trailers and owners of the heavy-duty tractors that pull them on California highways. These owners are responsible for replacing or retrofitting their affected vehicles with compliant aerodynamic technologies and low-rolling-resistance tires. All owners, regardless of where their vehicle is registered, must comply with the regulation when they operate their affected vehicles on California highways. Besides the owners of these vehicles, drivers, motor carriers, California-based brokers, and California-based shippers that operate or use them also share in the responsibility for compliance with the regulation.

Low-Carbon Fuel Standard

The Low-Carbon Fuel Standard (LCFS), established in 2007 through Executive Order S-1-07 and administered by CARB, requires producers of petroleum-based fuels to reduce the carbon intensity of their products that started with a 0.25 percent reduction in 2011, and culminated in a 10 percent total reduction in 2020. In September 2018, CARB extended the LCFS program to 2030, making significant changes to the design and implementation of the program, including a doubling of the carbon intensity reduction to 20 percent by 2030.

Petroleum importers, refiners, and wholesalers can either develop their own low-carbon fuel products or buy LCFS credits from other companies that develop and sell low-carbon alternative fuels, such as biofuels, electricity, natural gas, and hydrogen. The Port started participating in the LCFS program in January 2019 as an opt-in entity, generating credits by providing electricity to vessels through shore power, as well as providing charging infrastructure for battery-electric Class 8 on-road trucks, battery-electric cargo-handling equipment, and battery-electric light-duty vehicles.

Zero-Emission Vehicles

In March 2012, then-Governor Brown issued Executive Order B-16-12, establishing a goal of 1.5 million ZEVs on California roads by 2025. In addition to the ZEV goal, Executive Order B-16-12 stipulated that by 2015, all major cities in California must have adequate infrastructure and be " zero-emission vehicle ready;" by 2020, the state establish adequate infrastructure to support 1 million ZEVs; and by 2050, virtually all personal transportation in the state will be based on ZEVs; and GHG emissions from the transportation sector will be reduced by 80 percent below 1990 levels in 2050.

On January 26, 2018, then-Governor Brown issued Executive Order B-48-18, establishing a goal of 5 million ZEVs on California roads by 2030, and spurred the installation and construction of 250,000 plug-in electric vehicle chargers, including 10,000 direct-current fast chargers, and 200 hydrogen refueling stations by 2025.

In September 2020, Governor Newsom signed Executive Order N-79-20, which sets a new state goal that 100 percent of in-state sales of new passenger cars and trucks will be zero-emission by 2035; that 100 percent of medium- and heavy-duty vehicles in the state be zero-emission by 2045 for all operations where feasible, and by 2035 for drayage trucks; and that 100 percent of off-road vehicles and equipment will be zero emission by 2035 where feasible. This order calls on state agencies, including CARB, the CEC, the CPUC, the Department of Finance, and others to develop and propose regulations and strategies to achieve these goals.

Other State Regulations and Policies

For further information regarding the following regulations and policies, see Section 2.1, Air Quality Regulatory Setting.

- Advanced Clean Cars
- Advanced Clean Fleets
- Advanced Clean Trucks
- AB 617 and Community Air Protection Program

2.2.3 Regional Regulations and Policies

BAAQMD Climate Protection Program

BAAQMD has established a climate protection program to reduce pollutants that contribute to global climate change and affect air quality in the San Francisco Bay Area Air Basin. The climate protection program includes measures that promote energy efficiency, reduce VMT, and develop alternative sources of energy, all of which assist in reducing emissions of GHG and air pollutants that affect the health of residents. BAAQMD also seeks to support and stimulate climate protection programs in the region through public education and outreach, technical assistance to local governments and other interested parties, and promotion of collaborative efforts among stakeholders.

3 Environmental Setting

3.1 Air Quality

3.1.1 Climate and Topography

The Oakland Airport is located in the San Francisco Bay Area Air Basin (SFBAAB), which is under the jurisdiction of the BAAQMD. This region of the SFBAAB is bordered on the east by the Oakland-Berkeley hills and on the west by the San Francisco Bay. In this area, marine air traveling through the Golden Gate, as well as across San Francisco and through the San Bruno Gap, is a dominant weather factor. The Oakland-Berkeley Hills cause the westerly flow of air to split off to the north and south of Oakland, which causes diminished wind speeds. The prevailing winds for most of this subregion are from the west. Temperatures in this subregion have a narrow range due to the proximity of the moderating marine air. Maximum temperatures during summer average in the mid-70's, with minimums in the mid-50's. Winter highs are in the mid- to high-50's, with lows in the low- to mid-40's. The air pollution potential is lowest for the parts of the subregion that are closest to the bay, due largely to good ventilation and less influx of pollutants from upwind sources. The occurrence of light winds in the evenings and early mornings occasionally causes elevated pollutant levels. The air pollution potential at the northern (Richmond) and southern (Oakland, San Leandro) parts of this subregion is marginally higher than communities directly east of the Golden Gate, because of the lower frequency of strong winds. This subregion contains a variety of industrial air pollution sources. Some industries are quite close to residential areas. The subregion is also traversed by frequently congested major freeways (BAAQMD 2017c).

The study area has a Mediterranean climate characterized by cool, wet winters and hot, dry summers. Average temperatures range from a low of 42 degrees Fahrenheit (°F) in January to a high of 74°F in September (NRCS 2023a). Average annual precipitation is approximately 23.3 inches, with the majority of precipitation occurring from November through April (WRCC 2023).

3.1.2 Local Air Quality

BAAQMD operates a regional monitoring network that measures the ambient concentrations of the six criteria air pollutants. Existing levels of air quality in Oakland can generally be inferred from historical ambient air quality data based on measurements conducted by BAAQMD at its nearby monitoring stations. The monitoring station closest to the Proposed Project is the Oakland East station, located approximately three miles northeast of the Airport at 9925 International Boulevard. The Oakland East station measures O3, NO2, CO, and PM2.5. The air monitoring data for calendar years 2020-2022 is shown in **Table 2**.

Table 2: Oakland East Air Monitoring Data for 2020-2002

Pollutant	Averaging Time	Days Exceed Standard 2020	Days Exceed Standard 2021	Days Exceed Standard 2022	Maximum Concentration 2020	Maximum Concentration 2021	Maximum Concentration 2022

O_3	1-hr	0	0	0	0.090 ppm	0.083 ppm	0.069 ppm
O_3	8-hr	0	0	0	0.066 ppm	0.062 ppm	0.056 ppm
PM2.5[a]	24-hr	11	0	0	167.7 µg/m^3	33.0 µg/m^3	25.7 µg/m^3
PM2.5	Annual	0	0	0	11.4 µg/m^3	7.9 µg/m^3	8.2 µg/m^3
NO2	1-hr	0	0	0	59.2 ppb	48.7 ppb	50.8 ppb
CO	1-hr	0	0	0	1.997 ppm	1.261 ppm	1.474 ppm
CO	24-hr	-	-	-	1.577 ppm	0.776 ppm	0.826 ppm

ppb = parts per billion
ppm = parts per million
µg/m^3 = micrograms per cubic meter

- = not an ambient air quality standard so no exceedances shown.

a: The exceedances in 2020 are attributable to wildfires.
Source: CARB 2023a, CARB 2023b.

3.1.3 Air Pollutants

Several air pollutants of concern would be associated with Proposed Project activities. These air pollutants are discussed briefly below. Two main categories of air pollutants are described: criteria air pollutants and TACs. Criteria air pollutants are air pollutants with national and/or state air quality standards that define allowable concentrations of these substances in the ambient (or background) air. TACs are air pollutants that may lead to serious illness or increased mortality, even when present in relatively low concentrations.

Carbon Monoxide

Carbon monoxide (CO) is an odorless, colorless gas that is highly toxic. CO is formed by the incomplete combustion of fuels and is emitted directly into the air. Ambient CO concentrations normally are considered a local effect and typically correspond closely to the spatial and temporal distribution of vehicular traffic. CO concentrations are also influenced by wind speed and atmospheric mixing. Under inversion conditions (when a low layer of warm air, along with its pollutants, is held in place by a higher layer of cool air), CO concentrations may be distributed more uniformly over an area to some distance from vehicular sources. CO binds with hemoglobin, the oxygen-carrying protein in blood, and thereby reduces the blood's capacity to carry oxygen to the heart, brain, and other parts of the body. At high concentrations, CO can cause heart difficulties in people with chronic diseases, impair mental abilities, and cause death.

Ozone

Ozone (O3) is a reactive gas that, in the troposphere (the lowest region of the atmosphere), is a product of the photochemical process involving the sun's energy. It is a secondary pollutant that is formed when nitrogen oxides and reactive organic gases react in the presence of sunlight. O_3 at the

Earth's surface causes numerous adverse health effects and is a criteria pollutant. It is a major component of smog. In the stratosphere, O_3 exists naturally and shields the Earth from harmful incoming ultraviolet radiation. High concentrations of ground-level O_3 can adversely affect the human respiratory system and aggravate cardiovascular disease and many respiratory ailments. O_3 also damages natural ecosystems such as forests and foothill natural communities, agricultural crops, and some human-made materials (e.g., rubber, paint, and plastics).

Nitrogen Oxides

Nitrogen oxides (NOx) are a family of gaseous nitrogen compounds that are precursors to the formation of O_3 and particulate matter. The major component of NOx, nitrogen dioxide (NO2), is a reddish-brown gas that is toxic at high concentrations. NOx results primarily from the combustion of fossil fuels under high temperature and pressure. On-road and off-road motor vehicles and fuel combustion (use of natural gas for heating, cooking, and industrial use) are the major sources of this air pollutant.

Reactive Organic Gases

Reactive organic gases (ROG) consist of hydrocarbon compounds that exist in the ambient air. ROG contributes to the formation of smog and/or may itself be toxic. ROG emissions are a primary precursor to the formation of O_3. Sources of ROG include consumer products, paints, trees that emit ROGs, and the combustion of fossil fuels.

Particulate Matter

Particulate matter (PM) is a complex mixture of extremely small particles and liquid droplets. PM is made up of various components, including acids, organic chemicals, metals, and soil or dust particles. The size of particles is directly linked to the potential for causing health problems. PM particles that are smaller than 10 micrometers in diameter, called PM10, are of most concern because these particles pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. PM10 particles are typically found near roadways and industrial operations that generate dust. PM10 particles are deposited in the thoracic region of the lungs. Fine particles, called PM2.5, are particles less than 2.5 micrometers in diameter and are found in smoke and haze. PM2.5 particles penetrate deeply into the thoracic and alveolar regions of the lungs.

Sulfur Dioxide

Sulfur dioxide (SO2) is a colorless, irritating gas with a "rotten egg" smell formed primarily by the combustion of sulfur-containing fossil fuels. Suspended SO2 particles contribute to poor visibility in the SFBAAB and are a component of PM10.

Lead

Lead is a metal that is a natural constituent of air, water, and the biosphere. Lead is neither created nor destroyed in the environment, so it essentially persists forever. There is no known safe exposure level to lead. The health effects of lead poisoning include loss of appetite, weakness, apathy, and miscarriage. Lead poisoning can also cause lesions of the neuromuscular system, circulatory system, brain, and gastrointestinal tract and can reduce mental capacity.

Gasoline-powered automobile engines were a major source of airborne lead due to the use of leaded fuels. The use of leaded fuel has been mostly phased out since 1996, which has resulted in dramatic

reductions in ambient concentrations of lead. Because lead persists in the environment forever, however, areas near busy highways continue to have high levels of lead in dust and soil.

Hydrogen Sulfide

Hydrogen sulfide (H2S) is associated with geothermal activity, oil and gas production, refining, sewage treatment plant operations, and confined animal feeding operations. H2S is extremely hazardous in high concentrations and can cause death.

Sulfates

Sulfates are the fully oxidized, ionic form of sulfur. Sulfates occur in combination with metal and/or hydrogen ions. In California, emissions of sulfur compounds result primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to SO2 during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO2 to sulfates takes place comparatively rapidly and completely in urban areas of California due to regional meteorological features. CARB's sulfate standard is designed to prevent aggravation of respiratory symptoms. Effects of sulfate exposure at levels above the standard include a decrease in ventilatory function, aggravation of asthmatic symptoms, and an increased risk of cardiopulmonary disease. Sulfates are particularly effective in degrading visibility, and because they are usually acidic, can harm ecosystems and damage materials and property.

Vinyl Chloride

Vinyl chloride is a colorless gas that does not occur naturally. It is formed when other substances, such as trichloroethane, trichloroethylene, and tetrachloroethylene, are broken down. Vinyl chloride is used to make polyvinyl chloride for a variety of plastic products, including pipes, wire and cable coatings, and packaging materials.

Toxic Air Contaminants

Hundreds of different types of toxic air contaminants exist, with varying degrees of toxicity. Many TACs are confirmed or suspected carcinogens, or are known or suspected to cause birth defects or neurological damage. For some chemicals, such as carcinogens, no thresholds exist below which exposure can be considered risk-free. Examples of TAC sources in the Proposed Project area include fossil fuel combustion sources, industrial processes, and gas stations.

Sources of TACs include stationary sources, area-wide sources, and mobile sources. The United States Environmental Protection Agency (USEPA) maintains a list of 187 TACs, also known as hazardous air pollutants. These hazardous air pollutants are also included on CARB's list of TACs. According to the California Almanac of Emissions and Air Quality (CARB 2013), many researchers consider diesel particulate matter (DPM) to be a primary contributor to health risk from TACs because particles in diesel exhaust carry a mixture of many harmful organic compounds and metals, rather than being a single substance as are other TACs. Unlike many TACs, outdoor DPM is not monitored by CARB because no routine measurement method has been identified.31 However, using the CARB emission inventory's PM10 database, ambient PM10 monitoring data, and results from several studies, CARB has made preliminary estimates of DPM concentrations throughout the state (California Office of Environmental Health Hazard Assessment [OEHHA] 2001).

Odors

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

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an odor. Odor intensity depends on the concentration in the air. When an odor sample is progressively diluted, the odor concentration decreases. As this occurs, the odor intensity weakens, and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odor reaches a level that is no longer detectable.

3.2 GHGs

"Global warming" and "climate change" are common terms used to describe the increase in the average temperature of the earth's near-surface air and oceans since the mid-20th century. Natural processes and human actions have been identified as impacting climate. The Intergovernmental Panel on Climate Change (IPCC) has concluded that variations in natural phenomena such as solar radiation and volcanoes produced most of the warming from pre-industrial times to 1950 and had a small cooling effect afterward. Since the 19th century however, increasing greenhouse gas (GHG) concentrations resulting from human activity such as fossil fuel combustion, deforestation, and other activities are believed to be a major factor in climate change. GHGs in the atmosphere naturally trap heat by impeding the exit of solar radiation that has hit the earth and is reflected back into space—a phenomenon sometimes referred to as the "greenhouse effect." Some GHGs occur naturally and are necessary for keeping the earth's surface inhabitable. However, increases in the concentrations of these gases in the atmosphere during the last 100 years have trapped solar radiation and decreased the amount that is reflected back into space, intensifying the natural greenhouse effect and resulting in the increase of global average temperature.

Carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFC), perfluorocarbons (PFC), and sulfur hexafluoride (SF_6) are the principal GHGs. When concentrations of these gases exceed historical concentrations in the atmosphere, the greenhouse effect is intensified. CO_2, CH_4, and N_2O occur naturally and are also generated through human activity. Emissions of CO_2 are largely by-products of fossil fuel combustion, whereas CH_4 results from off-gassing, natural gas leaks from pipelines, and industrial processes and incomplete combustion associated with agricultural practices, landfills, energy providers, and other industrial facilities. Other human-generated GHGs include fluorinated gases such as HFCs, PFCs, and SF_6, which have much higher heat-absorption potential than CO_2, and are byproducts of certain industrial processes.

CO_2 is the reference gas for climate change, as it is the GHG emitted in the highest volume. The effect that each of the GHGs have on global warming is the product of the mass of their emissions and their global warming potential (GWP). GWP indicates how much a gas is predicted to contribute to global warming relative to how much warming would be predicted to be caused by the same mass of CO_2.

For example, CH_4 and N_2O are substantially more potent GHGs than CO_2, with GWPs of approximately 25 and approximately 298 times, respectively, that of CO_2, which has a GWP of 1.

In emissions inventories, GHG emissions are typically reported as metric tons of carbon dioxide equivalent (CO_2e). CO_2e is calculated as the product of the mass emitted of a given GHG and its specific GWP. While CH_4 and N_2O have much higher GWPs than CO_2, CO_2 is emitted in higher quantities and it accounts for the majority of GHG emissions in CO_2e, both from commercial developments and human activity in general.

Existing Site Emissions

The Project site has vegetation and may assist in sequestration of carbon. The capped NPORDS landfill is not a productive landfill anymore and does not emit any substantial amounts of CH_4 but may occasionally still have some residual CH_4 emissions from the decomposition of organic matter in this old landfill although rare. There are some GHG emissions from airport operations vehicles and equipment completing routine maintenance.

3.3 Sensitive Receptors

Schools, hospitals, and convalescent homes are considered to be relatively sensitive to poor air quality because children, elderly people, and the infirm are more susceptible to respiratory distress and other air quality related health problems. Residential areas are considered sensitive to poor air quality, because people usually stay home for extended periods of time increasing the potential exposure to ambient air quality. Recreational land uses are also considered sensitive due to the greater exposure to ambient air quality conditions because vigorous exercise associated with recreation places a high demand on the human respiratory system.

The land surrounding the APD Project Site is primarily open water and airport facilities, along with some office and hotel land uses. The Extended Stay America, Hampton Inn, and Home2 Suites are located 800 – 1,700 feet from portions of the northern end of the project area. The Harbor Bay KinderCare and Bright Horizons daycare facilities are located roughly 3,000 feet north of the project area. The nearest residences are single-family homes located on Bowman Court in the Heritage of Alameda neighborhood, approximately 2,500 feet north of the project site. Coastline Christian School and Tiny Treasures Preschool is located over 2, 000 feet to the north of the APD. Bay Area Chinse Bible Church is also located over 2,000 feet to the north of the APD. There are no hospitals, assisted living facilities in the vicinity of the project site. There are no sensitive receptors within 1,000 feet of the proposed main construction work areas at the APD.

The NPORDS is surrounded primarily by undeveloped/developed parcels and partially bounded by Harbor Bay Parkway, Doolittle Drive, and Old Earhart Road. Spunkmeyer Field, which is closed indefinitely to the public, bounds NPORDS to the north. The NPORDS is also adjacent to Corica Park Golf Course to the west, and other undeveloped Port of Oakland property directly to the south of the study area. There are no sensitive receptors within 1,000 feet of the proposed main construction work area at NPORDS.

4 Criteria Pollutant and GHG Emission Inventory

This section describes the criteria pollutant and GHG emissions associated with the changes to the APD Project with the inclusion of the CDSM and placement of excess material on the NPORDS landfill. It is assumed that the only change in emissions will be associated with this construction activity change and there will be no changes to operations compared to what was previously analyzed.

4.1 Methodology

Emissions generated from grading and APD construction activities resulting from the Proposed Project would be short-term, intermittent, and temporary in nature. Grading and construction activities associated with the Proposed Project would result in the generation of ROG, NOx, PM10, and PM2.5 emissions. PM is generally the direct result of site grading, excavation, road paving, and exhaust associated with construction equipment. PM emissions are largely dependent on the amount of ground disturbance associated with site preparation activities. PM emission also are a result of material such as dirt and aggregate transfer to and from hauling trucks. PM emissions will also result from the concrete batch plant operation. Emissions of NOx and ROG are generally associated with employee vehicle trips, delivery of materials, and construction equipment exhaust.

Construction off-road equipment and on-road vehicles emissions were estimated using the California Emission Estimator Model (CalEEMod) version 2022.1.1.20 using site-specific equipment horsepower if available for construction equipment. The worker trip length was matched to the previous CEQA analysis for the APD Project at 12.4 miles. Material hauled into the site including clean fill for construction of the pads and cement were assumed to be 35 miles away. The distance to the NPORDS site was assumed to be 5 miles. Material hauled offsite for disposal would have a trip length of 20 miles. The CalEEMod average fleet was used for unmitigated emissions and Tier 4 final engines were assumed for off-road construction equipment for mitigated emissions. It was assumed that fugitive dust control measures would be implemented including watering disturbed areas with a water truck, limiting vehicle speeds on the unpaved road to 25 miles per hour, sweeping the paved road near the project site once per month and follow BAAQMD's trackout rule. Appendix A contains the CalEEMod output information which includes all relevant CalEEMod inputs and site-specific information used in the calculation of the emissions inventory. The concrete batch plant PM emissions was estimated using US EPA AP 42 emission estimates.

4.2 Emission Inventory Results

4.2.1 Additional Construction with NPORDS Reuse

Table 3 shows the unmitigated criteria pollutant and GHG emissions compared to the relevant CEQA significance threshold with reuse at NPORDS. The average daily NOx emissions are above the BAAQMD CEQA significance thresholds. All other pollutants are below the BAAQMD CEQA significance thresholds for mass emissions. GHG emissions from this additional construction equipment is 7,466 MTCO2e and if amortized over 30 years would be 248.9 MTCO2e per year.

Table 3: Unmitigated Additional Construction Emissions with NPORDS Reuse

	ROG	NOx	CO	SO_2	PM10 Exhaust	PM10 Dust	PM2.5 Exhaust	PM2.5 Dust	CO_2e
Total Construction Emissions (tons or Metric Tonnes for CO2e)	2.50	20.83	22.12	0.07	0.81	12.81	0.75	1.80	7,466
Average Daily Maximum Emissions (lb/day)	8.26	69.74	72.46	0.24	2.73	45.9	2.51	7.7	27,016
BAAQMD CEQA Mass Emission Threshold	54	54	None	None	84	Best Management Practices	54	Best Management Practices	None
Is the CEQA Threshold Exceeded?	No	Yes	NA	NA	No	NA	No	NA	NA

Table 4 shows the mitigated criteria pollutant and GHG emissions compared to the relevant CEQA significance threshold with reuse at NPORDS. Adding mitigation requiring Tier 4 final equipment for off-road engines unless specialized equipment is not available reduces the NOx emissions to below the BAAQMD CEQA significance threshold for mass emissions.

Table 4: Mitigated Additional Construction Emissions with NPORDS Reuse

	ROG	NOx	CO	SO_2	PM10 Exhaust	PM10 Dust	PM2.5 Exhaust	PM2.5 Dust	CO_2e
Total Construction Emissions (tons or Metric	0.86	5.33	40.46	0.07	0.17	12.97	0.17	1.90	7,466

Tonnes for CO2e)									
Average Daily Maximum Emissions (lb/day)	2.71	17.78	132	0.24	0.56	45.9	0.55	7.7	27,016
BAAQMD CEQA Mass Emission Threshold	54	54	None	None	84	Best Management Practices	54	Best Management Practices	None
Is the CEQA Threshold Exceeded?	No	No	NA	NA	No	NA	No	NA	NA

4.2.2 Additional Construction with Offsite Disposal

Table 5 shows the unmitigated criteria pollutant and GHG emissions compared to the relevant CEQA significance threshold for offsite disposal. The average daily NOx emissions are above the BAAQMD CEQA significance thresholds. All other pollutants are below the BAAQMD CEQA significance thresholds for mass emissions. GHG emissions from this additional construction equipment is 9,929 MTCO2e and if amortized over 30 years would be 331 MTCO2e per year.

Table 5: Unmitigated Additional Construction Emissions with Offsite Disposal

	ROG	NOx	CO	SO_2	PM10 Exhaust	PM10 Dust	PM2.5 Exhaust	PM2.5 Dust	CO_2e
Total Construction Emissions (tons or Metric Tonnes for CO2e)	2.54	23.84	23.13	0.09	0.85	1.71	0.79	0.81	9,929
Average Daily Maximum Emissions (lb/day)	8.39	78.9	75.8	0.29	2.87	15.5	2.66	5.06	35,077

BAAQMD CEQA Mass Emission Threshold	54	54	None	None	84	Best Management Practices	54	Best Management Practices	None
Is the CEQA Threshold Exceeded?	No	Yes	NA	NA	No	NA	No	NA	NA

Table 6 shows the mitigated criteria pollutant and GHG emissions compared to the relevant CEQA significance threshold with offsite disposal. Adding mitigation requiring Tier 4 final equipment for off-road engines unless specialized equipment is not available reduces the NOx emissions to below the BAAQMD CEQA significance threshold for mass emissions.

Table 6: Mitigated Additional Construction Emissions with Offsite Disposal

	ROG	NOx	CO	SO_2	PM10 Exhaust	PM10 Dust	PM2.5 Exhaust	PM2.5 Dust	CO_2e
Total Construction Emissions (tons or Metric Tonnes for CO2e)	0.87	8.38	41.4	0.09	0.22	1.71	0.22	0.81	9,929
Average Daily Maximum Emissions (lb/day)	2.85	19.0	135	0.29	0.49	15.5	0.70	5.06	35,077
BAAQMD CEQA Mass Emission Threshold	54	54	None	None	84	Best Management Practices	54	Best Management Practices	None
Is the CEQA Threshold Exceeded?	No	No	NA	NA	No	NA	No	NA	NA

5 CEQA Thresholds of Significance

Based on Appendix G of the CEQA Guidelines, the below questions (criteria) were analyzed and evaluated to determine whether the Proposed Project's impacts related to air quality are significant. Would the Proposed Project:

A. Conflict with or obstruct implementation of an applicable air quality plan?

B. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard?

C. Expose sensitive receptors to substantial pollutant concentrations?

D. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Based on Appendix G of the CEQA Guidelines, the below questions (criteria) were analyzed and evaluated to determine whether the Proposed Project's impacts related to GHG emissions are significant. Would the Proposed Project:

A. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

B. Conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emission of GHGs?

California Environmental Quality Act (CEQA) Guidelines

In December 1999, the BAAQMD adopted its initial CEQA Guidelines – Assessing the Air Quality Impacts of Projects and Plans, as a guidance document to provide lead government agencies, consultants, and project proponents with uniform procedures for assessing air quality impacts and preparing the air quality sections of environmental documents for projects subject to CEQA. The BAAQMD CEQA Guidelines is an advisory document, and local jurisdictions are not required to use the methodology outlined therein. The document describes the criteria that the BAAQMD uses when reviewing and commenting on the adequacy of environmental documents. It recommends thresholds for use in determining whether projects would have significant adverse environmental impacts, identifies methodologies for predicting project emissions and impacts, and identifies measures that can be used to avoid or reduce air quality impacts.

BAAQMD updated quantitative thresholds of significance for its CEQA Air Quality Guidelines in 2010 and published its latest (as of April 2023) version of its CEQA Guidelines (BAAQMD CEQA Guidelines) in April 2023 (BAAQMD 2023a). The 2023 BAAQMD CEQA Guidelines provide BAAQMD-recommended procedures for evaluating potential air quality impacts during the environmental review process consistent with CEQA requirements.

The guidelines specify recommended thresholds of significance for construction and operational criteria air pollutants (CAPs) and precursor emissions, greenhouse gas (GHG) emissions, and risks and hazards associated with TACs from an individual project and cumulative impacts. These thresholds are outlined below in **Table 7**.

Table 7: BAAQMD CEQA Thresholds of Significance

Pollutant/Impact Area	Construction Related Average Daily Emissions (lb/day)	Operational Related Average Daily Emissions (lb/day)	Operational Related Maximum Annual Emissions (tpy)
ROG	54	54	10
NO_X	54	54	10
PM_{10}	82 (exhaust)	82	15
$PM_{2.5}$	54 (exhaust)	54	10
$PM_{10}/PM_{2.5}$ (fugitive dust)	Best Management Practices	None	
Local CO	None	9.0 ppm as an 8-hour average concentration and 20.0 ppm as a 1-hour average concentration	
Accidental Release of Acutely Hazardous Air Pollutants	None	Storage or use of acutely hazardous materials located near receptors, or new receptors located near stored or used acutely hazardous materials considered significant	
Odors	None	Five confirmed complaints per year averaged over three years	
Risk and Hazards (Project Impact)	An excess lifetime cancer risk level of more than 10 in one million; A non-cancer chronic HI greater than 1.0; and An incremental increase in the annual average $PM_{2.5}$ concentration of greater than 0.3 µg/m^3.		
Risk and Hazards (Cumulative Impact)	An excess lifetime cancer risk level of more than 100 in one million; A non-cancer chronic HI greater than 10.0; and An annual average $PM_{2.5}$ concentration of greater than 0.8 µg/m^3.		

Notes:

BAAQMD = Bay Area Air Quality Management District CEQA = California Environmental Quality Act

CO = carbon monoxide

DPM = diesel particulate matter HI = Hazard Index

lb/day = pounds per day

µg/m^3 = micrograms per cubic meter NO_X = oxides of nitrogen

PM_{10} = particulate matter 10 microns in diameter or less $PM_{2.5}$ = particulate matter 2.5 microns in diameter or less ppm = parts per million

ROG = reactive organic gases

SO_X = sulfur oxide tpy = tons per year

Source: BAAQMD 2023a.

BAAQMD's CEQA Guidelines state that CO emissions would not be expected to exceed the concentration thresholds of 9.0 ppm over an eight-hour average and 20.0 ppm over a one-hour average threshold of significance if the project is consistent with congestion management programs, and that project-generated traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour, or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway). Therefore, this vehicles per hour is used as a screening threshold to determine if more detailed CO concentration modeling is required. As discussed in Section 3.14, Transportation, the maximum trips at intersections only approach these values on a daily basis, and do not come close to these levels on an hourly basis. Therefore, CO emissions are screened out from further CO concentration modeling because they would be less than significant and are not discussed further.

In June 2010, the BAAQMD Board of Directors adopted CEQA thresholds of significance and an update of the CEQA Air Quality Guidelines, which included significance thresholds for GHG emissions based on the emission reduction goals for 2020 articulated by the California State Legislature in AB 32. These thresholds were revised in 2022 for land use projects,[66] shifting from a "Brightline" threshold, which is a level of emissions not to exceed regardless of the size or scope of the project, to a threshold requiring either compliance with a prescriptive list of project design elements for buildings and transportation or consistency with a local GHG reduction strategy that meets the criteria cited in CEQA Guidelines Section 15183.5(b).

The BAAQMD CEQA Air Quality Guidelines do not contain any quantitative significance thresholds for construction-related GHG emissions or prescriptive measures for infrastructure projects. Rather, BAAQMD recommends that lead agencies quantify and disclose GHG emissions that would occur during construction and operation of infrastructure projects. BAAQMD states that, even though the significance of construction-related GHG emissions is not determined, to minimize GHG emissions and emissions of other air quality pollutants, projects should incorporate the best management practices for reducing GHG emissions listed in the agency's CEQA guidance (BAAQMD 2023). See section 6 for a list of applicable best management practices that the Proposed Project will implement. BAAQMD does not have any guidance for projects that are not land use projects, stationary sources, or under a local GHG reduction strategy. BAAQMD notes that these guidelines are nonbinding recommendations intended to assist lead agencies, and they may be updated as needed in the future; any updates will likewise be nonbinding and advisory.

The impact analysis evaluates whether implementation of the Proposed Project would result in significant impacts related to GHG levels based on the anticipated construction, operation, and maintenance activities required for the Proposed Project. For purposes of significance determination, the GHG emissions are tied back to the goals set forth in SB 32 and applicable strategies outlined in the latest Scoping Plan.

6 CEQA Environmental Impacts

6.1 Consistency with Plans and Policies

6.1.1 Air Quality

A project is deemed inconsistent with air quality plans if it would result in population and/or employment growth that exceeds growth estimates included in the applicable air quality plan, which,

in turn, would generate emissions not accounted for in the applicable air quality plan emissions budget. Therefore, projects need to be evaluated to determine whether they would generate population and employment growth and, if so, whether that growth would exceed the growth rates included in the relevant air quality plans. BAAQMD's Clean Air Plan 2017 addresses O_3, particulate matter, TACs, and GHGs. This plan focuses on protecting public health and protecting the climate. The Proposed Project would not lead to a permanent increase in jobs, therefore the Proposed Project is consistent with air quality plans. BAAQMD also considers if a project would exceed any of its CEQA thresholds of significance as being inconsistent with their air quality plans. As discussed in Section 5.2. below, the Proposed Project does not exceed any of the thresholds of significance for emissions or health impacts with implementation of mitigation measures.

The Proposed Project would follow all federal, state, and local regulations related to stationary and area sources of air pollutants. In addition, construction will follow local air district regulations and best management practices described above for fugitive dust. In addition, mitigation measures to reduce NOx from offroad equipment would be implemented. Therefore, because the Proposed Project would comply with all applicable regulations for sources of air pollutants, the Proposed Project would have a **less-than-significant impact with mitigation** and would not obstruct or conflict with applicable air quality plans.

6.1.2 GHGs

Implementation of the Proposed Project would result in GHG emissions, but these would not impede the achievement of statewide GHG goals and policies specifically outlined in AB 32 and SB 32, which codify the goals of EOs S-3-05 and B-30-15. GHG emissions from construction equipment use are one-time emissions and would cease once construction of the Proposed Project is complete. As shown in Table 3, GHG emissions from the Proposed Project's construction would be 7,458 metric tonnes CO2e. Therefore, the Proposed Project would not conflict with the state goal of reducing GHG emissions and would not conflict with the updated Scoping Plan. Transportation sector regulations and future measures designed to achieve the emission reductions assumed as part of the Scoping Plan are applicable to the Proposed Project operations, as described above, including truck efficiency, low-carbon fuel standard, transition to ZEV, and decarbonization of the electricity supply. These measures would result in reduction of GHG emissions associated with the Proposed Project. These regulations would reduce GHG emissions for the Proposed Project. Therefore, the Proposed Project would not conflict with any applicable plan, policy, or regulation for the purpose of reducing GHG emissions. The impact is **less than significant**.

6.2 Emissions

6.2.1 Air Quality

As shown in Table 1, the project site is in a region that is designated in non-attainment for O_3, PM10, and PM2.5. Emissions generated from grading and APD construction activities resulting from the Proposed Project would be short-term, intermittent, and temporary in nature. During construction of the Proposed Project, the combustion of fossil fuels for operation of fossil fueled construction equipment, material hauling, and worker trips would result in construction-related criteria air pollutant emissions. These emissions were estimated using the California Emissions Estimator Model (CalEEMod) version 2022.1.1.20 using information from the Project Description. The Proposed Project's criteria air pollutant emissions during construction are shown in **Table 3** through **Table 6**. CalEEMod modeling results for the Proposed Project are provided in **Appendix A**. BMPs to control

fugitive dust will be implemented. Mass emissions from construction would be higher than the NOx average daily threshold without implementation of a mitigation measure. The implementation of a mitigation measure to require Tier 4 final engines during construction would lower the emissions below the mass emission level significance thresholds. Therefore, the impact of emissions during construction would be considered **less than significant with mitigation** and the proposed project would not contribute substantially to an air quality violation.

6.2.2 GHGs

Emissions generated from grading and APD construction activities resulting from the Proposed Project would be short-term, intermittent, and temporary in nature. Construction-related GHG emissions would result from the combustion of fossil-fueled construction equipment, material hauling, and worker trips. These emissions were estimated using CalEEMod version 2022.1.1.20, with default assumptions and site-specific estimate of equipment and construction days. The Proposed Project's construction-related GHG emissions with reuse at NPORDS are estimated at 7,466 metric tons of carbon dioxide equivalents (MTCO2e). The Proposed Project's construction-related GHG emissions with offsite disposal are estimated at 9,929 MTCO2e. The net project emissions when amortized construction emissions are included would be less than 331 MTCO2e/yr, which would not be anticipated to result in a significant impact to global climate change or impede the goals of AB 32 or SB 32. Since the Proposed Project's emissions would not conflict or impede the progress of AB32 or SB32 or any other plans or policies, the impact would be **less than significant**.

6.3 Exposure of Sensitive Receptors to Air Pollutants

During project construction, diesel particulate matter (DPM) and gasoline fuel combustion emissions that are classified as TACs could be emitted from construction equipment. Due to the variable nature of construction activity, the generation of TAC emissions in most cases would be temporary, especially considering the short amount of time such equipment is typically operating within an influential distance that would result in the exposure of sensitive receptors to substantial concentrations. Chronic and cancer-related health effects estimated over short periods are uncertain. Cancer potency factors are based on animal lifetime studies or worker studies with long-term exposure to the carcinogenic agent. There is considerable uncertainty in trying to evaluate the cancer risk from exposure that would last only a small fraction of a lifetime. Some studies indicate that the dose rate may change the potency of a given dose of a carcinogenic chemical. In others words, a dose delivered over a short period may have a different potency than the same dose delivered over a lifetime (California Office of Environmental Health Hazard Assessment [OEHHA] 2015). Furthermore, construction impacts are most severe adjacent to the construction area and decrease rapidly with increasing distance. Concentrations of mobile-source DPM emissions are typically reduced by 70 percent at a distance of approximately 500 feet (CARB 2005) and the nearest residences are 2,400 feet from the project area. There are no sensitive receptors located within 1,000 feet of the construction work areas.

Given the short duration of construction, the fact that TAC concentrations would quickly be reduced away from the active construction site, the relatively large distances to sensitive receptors, and the uncertainties in modeling such emissions, the Proposed Project's effect on nearby sensitive receptors due to construction-related air pollutant emissions would be **less than significant**.

6.4 Exposure to other Substances

Diesel exhaust from construction activities and oxidation/decomposition of organic material in newly exposed sediment may temporarily generate odors while construction of the Proposed Project is underway. Once construction activities have been completed and exposed sediment has dried out or become vegetated, these odors would cease. Vehicle idling at the site would be minimized to the extent feasible and so would not be likely to cause odor issues for nearby sensitive receptors. Impacts related to potential generation of objectionable odors are thus expected to be **less than significant**.

6.5 Cumulative Impacts

6.5.1 Air Quality

Past, present, and future development projects contribute to a region's air quality conditions on a cumulative basis; therefore, by its very nature, air pollution is largely a cumulative impact. If a project's individual emissions contribute toward exceedance of the NAAQS or the CAAQS, then the project's cumulative impact on air quality would be significant. In developing attainment designations for criteria pollutants, the USEPA considers the region's past, present, and future emission levels.

BAAQMD determines suitable significance thresholds based on the area's designated nonattainment status. These thresholds provide a tool by which the districts can achieve attainment for a particular criteria pollutant that is designated as nonattainment. Therefore, the BAAQMD's significance thresholds consider the region's past, present, and future emissions levels.

Implementation of the Proposed Project combined with future development within the project area could lead to cumulative impacts to air quality. Construction of the Proposed Project would result in the generation of criteria air pollutants that when combined with future growth within the Proposed Project area could lead to cumulative impacts to air quality. As discussed in detail above, emissions resulting from the Proposed Project would not exceed the BAAQMD's thresholds with BMP's and mitigation measure implemented, and construction would be in conformance with the applicable SIP developed to address cumulative emissions of CAPs in the SFBAAB. Therefore, the Proposed Project would have a **less-than-significant** cumulative impact on local and regional air quality.

6.5.2 GHGs

Climate change is a global issue that is inherently cumulative in nature, as anthropogenic GHG emissions are generally believed to be one of the primary drivers. As described above the APD Project would emit some GHGs during construction; however, these emissions would be below applicable thresholds of significance established by BAAQMD and not impede the progress of AB32 and SB 32.

Virtually all development projects contribute some level of GHG emissions because, at a minimum, such projects require operation of heavy equipment in their construction. Therefore, all of the reasonably foreseeable project nearby the Project site would contribute GHG emissions. While any level of GHG emissions can be considered to contribute to global climate change, given that the Proposed Project's emissions would be below BAAQMD significance thresholds, its contribution to cumulatively significant impacts is considered less than considerable. Therefore, this impact would **less than significant.**

7 Mitigation Measures and Best Management Practices

Recommended measures to avoid and minimize impacts to air quality and GHG emissions are described below. BAAQMD has changed its list of suggested best management practices in its 2022 CEQA guidelines. Applicable best management practices for air quality and GHG emissions are included below. The previous IS/MND listed the fugitive dust measures as mitigation measure AQ-1. These are being replaced with updated fugitive dust BMPs. For transparency the new mitigation measure is being listed as Mitigation Measure AQ-2.

Measure 2: Construction Mitigation

MM AQ-2: Construction Air Quality Mitigation

The Port shall require contractors to implement construction-related emission reduction measures. All requirements shall be included in applicable bid documents, purchase orders, and constructs, with the contractors demonstrating the ability to supply the compliant on-road and off-road construction equipment for use prior to any ground-disturbing and construction activities. The mitigation measures to include are as follows:

- Require all diesel-fueled off-road construction equipment used on land to be equipped with USEPA Tier 4 final compliant engines or better as a condition of contract unless a unique piece of equipment is not available as a Tier 4 engine.

Best Management Practices

The Port shall require contractors to implement construction-related best management practices. All requirements shall be included in applicable bid documents, purchase orders, and constructs, with the contractors demonstrating the ability to supply the compliant on-road and off-road construction equipment for use prior to any ground-disturbing and construction activities. The best management practices to include are as follows:

- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to no more than two minutes. Provide clear signage that posts this requirement for workers at the entrances to the site, and the Port will conduct random monthly surveys to check for compliance with idling times to ensure compliance with this measure.
- Use CARB-approved renewable diesel fuel R99 or R100 in off-road construction equipment and on-road trucks.
- Require all construction equipment be maintained and properly tuned in accordance with manufacturer's specifications. Equipment should be checked by a certified mechanic in accordance with the manufacturer's specifications, and determined to be running in proper condition prior to operation.
- Encourage and provide carpools, shuttle vans, transit passes, and/or secure bicycle parking to construction workers, and offer meal options on site or shuttles to nearby meal destinations for construction employees.
- Recycle or salvage nonhazardous construction and demolition debris.

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- All visible mud or dirt trackout onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day, or other suitable practices to remove dirt from tire mechanisms shall be employed to minimize occurrences of trackout. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 25 mph.
- All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph in a given hour.
- All trucks and equipment, including their tires, shall be washed off prior to leaving the site unless only traveling between the APD and NPORDS sites.
- Publicly visible signs shall be posted near truck entrances and publicly accessible fences near the project work areas with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's General Air Pollution Complaints number shall also be posted on a publicly visible sign to ensure compliance with applicable regulations.

8 Summary

This report summarizes air quality and GHG emissions that would occur from the revised APD Project. The implementation of the mitigation measure provided in Section 6 would avoid and minimize potential impacts on air quality due to the construction activities of the APD Project.

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Appendix A
CalEEMod Output and Concrete Batch Plant Emissions

Alt 2: offsite Custom Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Alt 2: offsite
Construction Start Date	1/1/2024
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.90
Precipitation (days)	39.0
Location	37.72042296900747, -122.24552592095685
County	Alameda
City	Oakland
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1482
EDFZ	1
Electric Utility	Port of Oakland
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.20

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	1.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	15.5	12.5	116	114	0.44	4.23	7.17	9.97	3.91	2.67	5.27	—	51,497	51,497	2.19	2.30	29.2	52,266
Mit.	5.06	4.36	40.0	206	0.44	1.07	7.17	7.82	1.06	2.67	3.32	—	51,497	51,497	2.19	2.30	29.2	52,266
% Reduced	67%	65%	65%	-80%	—	75%	—	22%	73%	—	37%	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	15.5	12.5	116	114	0.44	4.23	7.15	10.2	3.91	2.67	5.52	—	51,482	51,482	2.19	2.30	0.77	52,223
Mit.	5.04	4.35	40.8	206	0.44	1.07	7.15	7.81	1.06	2.67	3.32	—	51,482	51,482	2.19	2.30	0.77	52,223
% Reduced	67%	65%	65%	-80%	—	75%	—	24%	73%	—	40%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	10.4	8.39	78.9	75.8	0.29	2.87	3.00	5.87	2.66	0.92	3.57	—	34,545	34,545	1.47	1.63	9.00	35,077
Mit.	3.34	2.85	26.9	135	0.29	0.70	3.00	3.70	0.70	0.92	1.62	—	34,545	34,545	1.47	1.63	9.00	35,077
% Reduced	68%	66%	66%	-79%	—	75%	—	37%	74%	—	55%	—	—	—	—	—	—	—

Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.90	1.53	14.4	13.8	0.05	0.52	0.55	1.07	0.48	0.17	0.65	—	5,719	5,719	0.24	0.27	1.49	5,807
Mit.	0.61	0.52	4.92	24.7	0.05	0.13	0.55	0.68	0.13	0.17	0.30	—	5,719	5,719	0.24	0.27	1.49	5,807
% Reduced	68%	66%	66%	-79%	—	75%	—	37%	74%	—	55%	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	15.5	12.5	116	114	0.44	4.23	3.52	7.75	3.91	0.95	4.87	—	51,497	51,497	2.19	2.30	28.9	52,266
2025	14.9	12.0	107	113	0.44	3.84	7.17	9.97	3.56	2.67	5.27	—	51,268	51,268	2.18	2.30	29.2	52,036
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	15.5	12.5	116	114	0.44	4.23	7.15	10.2	3.91	2.67	5.52	—	51,482	51,482	2.19	2.30	0.77	52,223
2025	14.9	12.0	108	113	0.44	3.84	3.52	7.36	3.56	0.95	4.51	—	51,253	51,253	2.19	2.30	0.74	51,994
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	10.4	8.39	78.9	75.8	0.29	2.87	3.00	5.87	2.66	0.92	3.57	—	34,545	34,545	1.47	1.63	9.00	35,077
2025	6.90	5.52	51.7	51.1	0.21	1.82	2.53	4.35	1.69	0.79	2.47	—	24,475	24,475	1.05	1.31	7.32	24,899
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	1.90	1.53	14.4	13.8	0.05	0.52	0.55	1.07	0.48	0.17	0.65	—	5,719	5,719	0.24	0.27	1.49	5,807
2025	1.26	1.01	9.44	9.33	0.04	0.33	0.46	0.79	0.31	0.14	0.45	—	4,052	4,052	0.17	0.22	1.21	4,122

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	5.06	4.36	40.0	206	0.44	1.07	3.52	4.58	1.06	0.95	2.01	—	51,497	51,497	2.19	2.30	28.9	52,266
2025	5.04	4.35	39.5	206	0.44	1.06	7.17	7.82	1.05	2.67	3.32	—	51,268	51,268	2.18	2.30	29.2	52,036
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	5.04	4.35	40.8	206	0.44	1.07	7.15	7.81	1.06	2.67	3.32	—	51,482	51,482	2.19	2.30	0.77	52,223
2025	5.03	4.34	40.3	205	0.44	1.06	3.52	4.58	1.05	0.95	2.01	—	51,253	51,253	2.19	2.30	0.74	51,994
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	3.34	2.85	26.9	135	0.29	0.70	3.00	3.70	0.70	0.92	1.62	—	34,545	34,545	1.47	1.63	9.00	35,077
2025	2.31	1.92	19.0	91.6	0.21	0.49	2.53	3.02	0.49	0.79	1.27	—	24,475	24,475	1.05	1.31	7.32	24,899
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.61	0.52	4.92	24.7	0.05	0.13	0.55	0.68	0.13	0.17	0.30	—	5,719	5,719	0.24	0.27	1.49	5,807
2025	0.42	0.35	3.46	16.7	0.04	0.09	0.46	0.55	0.09	0.14	0.23	—	4,052	4,052	0.17	0.22	1.21	4,122

3. Construction Emissions Details

3.1. General (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	5.12	4.30	40.7	38.3	0.12	1.58	—	1.58	1.45	—	1.45	—	13,417	13,417	0.54	0.11	—	13,463
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	5.12	4.30	40.7	38.3	0.12	1.58	—	1.58	1.45	—	1.45	—	13,417	13,417	0.54	0.11	—	13,463
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.67	3.08	29.2	27.4	0.09	1.13	—	1.13	1.04	—	1.04	—	9,610	9,610	0.39	0.08	—	9,643
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.67	0.56	5.32	5.00	0.02	0.21	—	0.21	0.19	—	0.19	—	1,591	1,591	0.06	0.01	—	1,596
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.07	1.20	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	257	257	< 0.005	0.01	1.10	261
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.84	0.23	14.4	5.35	0.08	0.23	3.28	3.51	0.23	0.90	1.13	—	12,480	12,480	0.61	1.98	27.8	13,112
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.10	0.09	1.05	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	238	238	0.01	0.01	0.03	242
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.83	0.22	15.2	5.39	0.08	0.23	3.28	3.51	0.23	0.90	1.13	—	12,484	12,484	0.61	1.98	0.72	13,089
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.06	0.73	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	172	172	< 0.005	0.01	0.34	175
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.60	0.16	10.7	3.84	0.06	0.17	2.30	2.47	0.17	0.63	0.80	—	8,940	8,940	0.44	1.42	8.62	9,381
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.13	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	28.5	28.5	< 0.005	< 0.005	0.06	28.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.11	0.03	1.94	0.70	0.01	0.03	0.42	0.45	0.03	0.12	0.15	—	1,480	1,480	0.07	0.23	1.43	1,553

3.2. General (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.27	1.27	6.60	68.8	0.12	0.25	—	0.25	0.25	—	0.25	—	13,417	13,417	0.54	0.11	—	13,463
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.27	1.27	6.60	68.8	0.12	0.25	—	0.25	0.25	—	0.25	—	13,417	13,417	0.54	0.11	—	13,463
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.91	0.91	4.73	49.3	0.09	0.18	—	0.18	0.18	—	0.18	—	9,610	9,610	0.39	0.08	—	9,643
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.17	0.86	9.00	0.02	0.03	—	0.03	0.03	—	0.03	—	1,591	1,591	0.06	0.01	—	1,596

Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.07	1.20	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	257	257	< 0.005	0.01	1.10	261
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.84	0.23	14.4	5.35	0.08	0.23	3.28	3.51	0.23	0.90	1.13	—	12,480	12,480	0.61	1.98	27.8	13,112
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.10	0.09	1.05	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	238	238	0.01	0.01	0.03	242
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.83	0.22	15.2	5.39	0.08	0.23	3.28	3.51	0.23	0.90	1.13	—	12,484	12,484	0.61	1.98	0.72	13,089
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.06	0.73	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	172	172	< 0.005	0.01	0.34	175
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.60	0.16	10.7	3.84	0.06	0.17	2.30	2.47	0.17	0.63	0.80	—	8,940	8,940	0.44	1.42	8.62	9,381
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.13	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	28.5	28.5	< 0.005	< 0.005	0.06	28.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.11	0.03	1.94	0.70	0.01	0.03	0.42	0.45	0.03	0.12	0.15	—	1,480	1,480	0.07	0.23	1.43	1,553

3.3. General (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.87	4.09	36.8	37.4	0.12	1.42	—	1.42	1.31	—	1.31	—	13,422	13,422	0.54	0.11	—	13,468
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.87	4.09	36.8	37.4	0.12	1.42	—	1.42	1.31	—	1.31	—	13,422	13,422	0.54	0.11	—	13,468
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.87	2.41	21.7	22.1	0.07	0.84	—	0.84	0.77	—	0.77	—	7,906	7,906	0.32	0.06	—	7,933
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.52	0.44	3.95	4.02	0.01	0.15	—	0.15	0.14	—	0.14	—	1,309	1,309	0.05	0.01	—	1,313
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.06	1.11	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	252	252	< 0.005	0.01	1.00	256
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.84	0.23	13.9	5.20	0.08	0.23	3.28	3.51	0.23	0.90	1.13	—	12,261	12,261	0.61	1.98	27.5	12,893
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.09	0.09	0.97	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	234	234	0.01	0.01	0.03	237
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.83	0.22	14.7	5.23	0.08	0.23	3.28	3.51	0.23	0.90	1.13	—	12,265	12,265	0.61	1.98	0.72	12,870
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.05	0.56	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	139	139	< 0.005	0.01	0.26	141
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.49	0.13	8.48	3.07	0.05	0.14	1.89	2.03	0.14	0.52	0.66	—	7,223	7,223	0.36	1.16	7.02	7,586
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	23.0	23.0	< 0.005	< 0.005	0.04	23.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.09	0.02	1.55	0.56	0.01	0.03	0.35	0.37	0.03	0.09	0.12	—	1,196	1,196	0.06	0.19	1.16	1,256

3.4. General (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.27	1.27	6.60	68.8	0.12	0.25	—	0.25	0.25	—	0.25	—	13,422	13,422	0.54	0.11	—	13,468
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.27	1.27	6.60	68.8	0.12	0.25	—	0.25	0.25	—	0.25	—	13,422	13,422	0.54	0.11	—	13,468
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.75	0.75	3.89	40.5	0.07	0.15	—	0.15	0.15	—	0.15	—	7,906	7,906	0.32	0.06	—	7,933
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.14	0.71	7.40	0.01	0.03	—	0.03	0.03	—	0.03	—	1,309	1,309	0.05	0.01	—	1,313
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.06	1.11	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	252	252	< 0.005	0.01	1.00	256
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.84	0.23	13.9	5.20	0.08	0.23	3.28	3.51	0.23	0.90	1.13	—	12,261	12,261	0.61	1.98	27.5	12,893
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.09	0.09	0.97	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	234	234	0.01	0.01	0.03	237
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.83	0.22	14.7	5.23	0.08	0.23	3.28	3.51	0.23	0.90	1.13	—	12,265	12,265	0.61	1.98	0.72	12,870
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.05	0.56	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	139	139	< 0.005	0.01	0.26	141
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.49	0.13	8.48	3.07	0.05	0.14	1.89	2.03	0.14	0.52	0.66	—	7,223	7,223	0.36	1.16	7.02	7,586
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	23.0	23.0	< 0.005	< 0.005	0.04	23.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.09	0.02	1.55	0.56	0.01	0.03	0.35	0.37	0.03	0.09	0.12	—	1,196	1,196	0.06	0.19	1.16	1,256

3.5. Temp Platform and Dike (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.38	3.68	29.9	25.7	0.08	1.27	—	1.27	1.17	—	1.17	—	8,725	8,725	0.35	0.07	—	8,755
Dust From Material Movement	—	—	—	—	—	—	3.46	3.46	—	1.67	1.67	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.64	0.53	4.35	3.73	0.01	0.19	—	0.19	0.17	—	0.17	—	1,267	1,267	0.05	0.01	—	1,271
Dust From Material Movement	—	—	—	—	—	—	0.50	0.50	—	0.24	0.24	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.79	0.68	< 0.005	0.03	—	0.03	0.03	—	0.03	—	210	210	0.01	< 0.005	—	210

Dust From Material Movement	—	—	—	—	—	—	0.09	0.09	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.07	0.76	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	173	173	< 0.005	0.01	0.02	176
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.11	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	25.4	25.4	< 0.005	< 0.005	0.05	25.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.20	4.20	< 0.005	< 0.005	0.01	4.26
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.6. Temp Platform and Dike (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.83	0.83	4.30	45.9	0.08	0.17	—	0.17	0.17	—	0.17	—	8,725	8,725	0.35	0.07	—	8,755
Dust From Material Movement	—	—	—	—	—	—	3.46	3.46	—	1.67	1.67	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.12	0.62	6.67	0.01	0.02	—	0.02	0.02	—	0.02	—	1,267	1,267	0.05	0.01	—	1,271
Dust From Material Movement	—	—	—	—	—	—	0.50	0.50	—	0.24	0.24	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.11	1.22	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	210	210	0.01	< 0.005	—	210
Dust From Material Movement	—	—	—	—	—	—	0.09	0.09	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.07	0.76	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	173	173	< 0.005	0.01	0.02	176
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.11	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	25.4	25.4	< 0.005	< 0.005	0.05	25.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.20	4.20	< 0.005	< 0.005	0.01	4.26
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Restoration (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.45	3.73	27.8	25.6	0.08	1.15	—	1.15	1.06	—	1.06	—	8,772	8,772	0.36	0.07	—	8,802

Dust From Material Movement	—	—	—	—	—	—	3.48	3.48	—	1.67	1.67	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.61	0.51	3.80	3.50	0.01	0.16	—	0.16	0.14	—	0.14	—	1,202	1,202	0.05	0.01	—	1,206
Dust From Material Movement	—	—	—	—	—	—	0.48	0.48	—	0.23	0.23	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.69	0.64	< 0.005	0.03	—	0.03	0.03	—	0.03	—	199	199	0.01	< 0.005	—	200
Dust From Material Movement	—	—	—	—	—	—	0.09	0.09	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.05	0.81	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	183	183	< 0.005	0.01	0.73	186
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	23.5	23.5	< 0.005	< 0.005	0.04	23.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.88	3.88	< 0.005	< 0.005	0.01	3.94
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.8. Restoration (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.83	0.83	4.30	45.9	0.08	0.17	—	0.17	0.17	—	0.17	—	8,772	8,772	0.36	0.07	—	8,802
Dust From Material Movement	—	—	—	—	—	—	3.48	3.48	—	1.67	1.67	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.11	0.59	6.29	0.01	0.02	—	0.02	0.02	—	0.02	—	1,202	1,202	0.05	0.01	—	1,206
Dust From Material Movement	—	—	—	—	—	—	0.48	0.48	—	0.23	0.23	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.11	1.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	199	199	0.01	< 0.005	—	200
Dust From Material Movement	—	—	—	—	—	—	0.09	0.09	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.05	0.81	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	183	183	< 0.005	0.01	0.73	186
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	23.5	23.5	< 0.005	< 0.005	0.04	23.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.88	3.88	< 0.005	< 0.005	0.01	3.94
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. CDSM (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	9.44	7.92	60.5	69.7	0.24	2.42	—	2.42	2.23	—	2.23	—	25,342	25,342	1.03	0.21	—	25,429
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	9.44	7.92	60.5	69.7	0.24	2.42	—	2.42	2.23	—	2.23	—	25,342	25,342	1.03	0.21	—	25,429
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	5.41	4.54	34.7	39.9	0.14	1.39	—	1.39	1.28	—	1.28	—	14,531	14,531	0.59	0.12	—	14,581
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.99	0.83	6.33	7.29	0.02	0.25	—	0.25	0.23	—	0.23	—	2,406	2,406	0.10	0.02	—	2,414
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.10. CDSM (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.84	2.76	18.9	130	0.24	0.58	—	0.58	0.57	—	0.57	—	25,342	25,342	1.03	0.21	—	25,429
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.84	2.76	18.9	130	0.24	0.58	—	0.58	0.57	—	0.57	—	25,342	25,342	1.03	0.21	—	25,429
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.63	1.58	10.9	74.8	0.14	0.33	—	0.33	0.33	—	0.33	—	14,531	14,531	0.59	0.12	—	14,581
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.30	0.29	1.98	13.6	0.02	0.06	—	0.06	0.06	—	0.06	—	2,406	2,406	0.10	0.02	—	2,414
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. CDSM (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	9.09	7.62	56.2	69.3	0.24	2.19	—	2.19	2.01	—	2.01	—	25,333	25,333	1.03	0.21	—	25,420
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	9.09	7.62	56.2	69.3	0.24	2.19	—	2.19	2.01	—	2.01	—	25,333	25,333	1.03	0.21	—	25,420
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.86	2.40	17.7	21.8	0.07	0.69	—	0.69	0.63	—	0.63	—	7,982	7,982	0.32	0.06	—	8,009
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.52	0.44	3.23	3.99	0.01	0.13	—	0.13	0.12	—	0.12	—	1,321	1,321	0.05	0.01	—	1,326
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.12. CDSM (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.84	2.76	18.9	130	0.24	0.58	—	0.58	0.57	—	0.57	—	25,333	25,333	1.03	0.21	—	25,420
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.84	2.76	18.9	130	0.24	0.58	—	0.58	0.57	—	0.57	—	25,333	25,333	1.03	0.21	—	25,420
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.89	0.87	5.96	41.1	0.07	0.18	—	0.18	0.18	—	0.18	—	7,982	7,982	0.32	0.06	—	8,009
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.16	0.16	1.09	7.50	0.01	0.03	—	0.03	0.03	—	0.03	—	1,321	1,321	0.05	0.01	—	1,326
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
General	Site Preparation	1/1/2024	10/28/2025	5.00	477	—
Temp Platform and Dike	Grading	1/1/2024	3/13/2024	5.00	53.0	—
Restoration	Grading	6/11/2025	8/19/2025	5.00	50.0	—
CDSM	Building Construction	3/14/2024	6/10/2025	5.00	324	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
General	Forklifts	Diesel	Average	2.00	10.0	134	0.20
General	Tractors/Loaders/Backhoes	Diesel	Average	2.00	11.0	76.0	0.37
General	Other Construction Equipment	Diesel	Average	6.00	10.0	400	0.42
General	Off-Highway Trucks	Diesel	Average	1.00	2.00	376	0.38
Temp Platform and Dike	Excavators	Diesel	Average	1.00	10.0	268	0.38
Temp Platform and Dike	Forklifts	Diesel	Average	1.00	10.0	134	0.20
Temp Platform and Dike	Other Construction Equipment	Diesel	Average	1.00	10.0	100	0.43
Temp Platform and Dike	Graders	Diesel	Average	1.00	10.0	238	0.41
Temp Platform and Dike	Rubber Tired Dozers	Diesel	Average	1.00	10.0	130	0.40
Temp Platform and Dike	Off-Highway Trucks	Diesel	Average	3.00	10.0	376	0.38
Restoration	Excavators	Diesel	Average	1.00	10.0	268	0.38
Restoration	Forklifts	Diesel	Average	1.00	10.0	134	0.20
Restoration	Plate Compactors	Diesel	Average	1.00	10.0	100	0.43
Restoration	Graders	Diesel	Average	1.00	10.0	238	0.41
Restoration	Rubber Tired Dozers	Diesel	Average	1.00	10.0	130	0.40

Restoration	Off-Highway Trucks	Diesel	Average	3.00	10.0	376	0.38
CDSM	Other General Industrial Equipment	Diesel	Average	2.00	10.0	165	0.48
CDSM	Other Construction Equipment	Diesel	Average	2.00	10.0	24.0	0.42
CDSM	Other Construction Equipment	Diesel	Average	2.00	10.0	75.0	0.42
CDSM	Other General Industrial Equipment	Diesel	Average	2.00	10.0	50.0	0.74
CDSM	Bore/Drill Rigs	Diesel	Average	2.00	10.0	580	0.50
CDSM	Excavators	Diesel	Average	2.00	10.0	268	0.38
CDSM	Pumps	Diesel	Average	2.00	10.0	11.0	0.74
CDSM	Tractors/Loaders/Backhoes	Diesel	Average	2.00	10.0	217	0.37
CDSM	Other General Industrial Equipment	Diesel	Average	2.00	10.0	402	0.74
CDSM	Off-Highway Trucks	Diesel	Average	2.00	10.0	376	0.38
CDSM	Dumpers/Tenders	Diesel	Average	2.00	10.0	16.0	0.38

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
General	Forklifts	Diesel	Tier 4 Final	2.00	10.0	134	0.20
General	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	11.0	76.0	0.37
General	Other Construction Equipment	Diesel	Tier 4 Final	6.00	10.0	400	0.42
General	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	2.00	376	0.38
Temp Platform and Dike	Excavators	Diesel	Tier 4 Final	1.00	10.0	268	0.38
Temp Platform and Dike	Forklifts	Diesel	Tier 4 Final	1.00	10.0	134	0.20

Temp Platform and Dike	Other Construction Equipment	Diesel	Tier 4 Final	1.00	10.0	100	0.43
Temp Platform and Dike	Graders	Diesel	Tier 4 Final	1.00	10.0	238	0.41
Temp Platform and Dike	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	10.0	130	0.40
Temp Platform and Dike	Off-Highway Trucks	Diesel	Tier 4 Final	3.00	10.0	376	0.38
Restoration	Excavators	Diesel	Tier 4 Final	1.00	10.0	268	0.38
Restoration	Forklifts	Diesel	Tier 4 Final	1.00	10.0	134	0.20
Restoration	Plate Compactors	Diesel	Tier 4 Final	1.00	10.0	100	0.43
Restoration	Graders	Diesel	Tier 4 Final	1.00	10.0	238	0.41
Restoration	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	10.0	130	0.40
Restoration	Off-Highway Trucks	Diesel	Tier 4 Final	3.00	10.0	376	0.38
CDSM	Other General Industrial Equipment	Diesel	Tier 4 Final	2.00	10.0	165	0.48
CDSM	Other Construction Equipment	Diesel	Tier 4 Final	2.00	10.0	24.0	0.42
CDSM	Other Construction Equipment	Diesel	Tier 4 Final	2.00	10.0	75.0	0.42
CDSM	Other General Industrial Equipment	Diesel	Tier 4 Final	2.00	10.0	50.0	0.74
CDSM	Bore/Drill Rigs	Diesel	Tier 4 Final	2.00	10.0	580	0.50
CDSM	Excavators	Diesel	Tier 4 Final	2.00	10.0	268	0.38
CDSM	Pumps	Diesel	Average	2.00	10.0	11.0	0.74
CDSM	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	10.0	217	0.37
CDSM	Other General Industrial Equipment	Diesel	Tier 4 Final	2.00	10.0	402	0.74
CDSM	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	10.0	376	0.38
CDSM	Dumpers/Tenders	Diesel	Average	2.00	10.0	16.0	0.38

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
General	—	—	—	—
General	Worker	27.5	12.4	LDA,LDT1,LDT2
General	Vendor	—	8.40	HHDT,MHDT
General	Hauling	101	35.0	HHDT
General	Onsite truck	0.00	1.00	HHDT
Temp Platform and Dike	—	—	—	—
Temp Platform and Dike	Worker	20.0	12.4	LDA,LDT1,LDT2
Temp Platform and Dike	Vendor	—	8.40	HHDT,MHDT
Temp Platform and Dike	Hauling	0.00	20.0	HHDT
Temp Platform and Dike	Onsite truck	—	—	HHDT
CDSM	—	—	—	—
CDSM	Worker	0.00	12.4	LDA,LDT1,LDT2
CDSM	Vendor	0.00	8.40	HHDT,MHDT
CDSM	Hauling	0.00	20.0	HHDT
CDSM	Onsite truck	—	—	HHDT
Restoration	—	—	—	—
Restoration	Worker	20.0	12.4	LDA,LDT1,LDT2
Restoration	Vendor	—	8.40	HHDT,MHDT
Restoration	Hauling	0.00	20.0	HHDT
Restoration	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
General	—	—	—	—

General	Worker	27.5	12.4	LDA,LDT1,LDT2
General	Vendor	—	8.40	HHDT,MHDT
General	Hauling	101	35.0	HHDT
General	Onsite truck	0.00	1.00	HHDT
Temp Platform and Dike	—	—	—	—
Temp Platform and Dike	Worker	20.0	12.4	LDA,LDT1,LDT2
Temp Platform and Dike	Vendor	—	8.40	HHDT,MHDT
Temp Platform and Dike	Hauling	0.00	20.0	HHDT
Temp Platform and Dike	Onsite truck	—	—	HHDT
CDSM	—	—	—	—
CDSM	Worker	0.00	12.4	LDA,LDT1,LDT2
CDSM	Vendor	0.00	8.40	HHDT,MHDT
CDSM	Hauling	0.00	20.0	HHDT
CDSM	Onsite truck	—	—	HHDT
Restoration	—	—	—	—
Restoration	Worker	20.0	12.4	LDA,LDT1,LDT2
Restoration	Vendor	—	8.40	HHDT,MHDT
Restoration	Hauling	0.00	20.0	HHDT
Restoration	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
General	—	—	0.00	0.00	—
Temp Platform and Dike	12,973	—	66.3	0.00	—
Restoration	—	37,557	62.5	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
User Defined Industrial	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	453	0.03	< 0.005
2025	0.00	453	0.03	< 0.005

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	site specific construction schedule

Construction: Off-Road Equipment	Site specific construction list
Construction: Trips and VMT	site specific information

Alt 3: offsite to Landfill Custom Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Alt 3: offsite to Landfill
Construction Start Date	1/1/2024
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.90
Precipitation (days)	39.0
Location	37.72042296900747, -122.24552592095685
County	Alameda
City	Oakland
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1482
EDFZ	1
Electric Utility	Port of Oakland
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.20

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	1.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers
Construction	C-10-C	Water Unpaved Construction Roads
Construction	C-11	Limit Vehicle Speeds on Unpaved Roads
Construction	C-12	Sweep Paved Roads

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	14.8	12.3	103	110	0.37	4.02	212	215	3.70	22.6	25.2	—	40,253	40,253	1.64	0.52	4.95	40,453
Mit.	4.30	4.16	27.0	201	0.37	0.85	212	213	0.85	22.6	23.1	—	40,253	40,253	1.64	0.52	4.95	40,453
% Reduced	71%	66%	74%	-83%	—	79%	—	1%	77%	—	8%	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	14.7	12.3	103	110	0.37	4.02	83.7	86.6	3.70	9.90	12.6	—	40,235	40,235	1.64	0.80	0.27	40,431
Mit.	4.29	4.15	27.1	201	0.37	0.85	83.7	84.1	0.85	9.90	10.4	—	40,235	40,235	1.64	0.80	0.27	40,431
% Reduced	71%	66%	74%	-83%	—	79%	—	3%	77%	—	18%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	9.88	8.26	69.7	72.5	0.24	2.73	33.4	35.1	2.51	3.56	5.22	—	26,864	26,864	1.10	0.41	1.60	27,016
Mit.	2.82	2.71	17.8	132	0.24	0.56	33.4	33.8	0.56	3.56	3.93	—	26,864	26,864	1.10	0.41	1.60	27,016
% Reduced	71%	67%	74%	-82%	—	79%	—	4%	78%	—	25%	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.80	1.51	12.7	13.2	0.04	0.50	6.10	6.41	0.46	0.65	0.95	—	4,448	4,448	0.18	0.07	0.27	4,473
Mit.	0.51	0.50	3.25	24.1	0.04	0.10	6.10	6.17	0.10	0.65	0.72	—	4,448	4,448	0.18	0.07	0.27	4,473
% Reduced	71%	67%	74%	-82%	—	79%	—	4%	78%	—	25%	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	14.8	12.3	103	110	0.37	4.02	26.3	30.3	3.70	2.71	6.42	—	40,253	40,253	1.64	0.52	3.86	40,453
2025	14.1	11.8	94.4	108	0.37	3.63	212	215	3.35	22.6	25.2	—	40,221	40,221	1.64	0.52	4.95	40,421
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	14.7	12.3	103	110	0.37	4.02	83.7	86.6	3.70	9.90	12.6	—	40,235	40,235	1.64	0.80	0.27	40,431
2025	14.1	11.8	94.5	108	0.37	3.63	26.3	29.9	3.35	2.71	6.06	—	40,203	40,203	1.64	0.52	0.10	40,399
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	9.88	8.26	69.7	72.5	0.24	2.73	24.4	27.1	2.51	2.71	5.22	—	26,864	26,864	1.10	0.41	1.60	27,016
2025	6.52	5.45	44.4	48.8	0.16	1.71	33.4	35.1	1.57	3.56	5.13	—	17,948	17,948	0.74	0.23	0.82	18,037
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	1.80	1.51	12.7	13.2	0.04	0.50	4.46	4.95	0.46	0.49	0.95	—	4,448	4,448	0.18	0.07	0.27	4,473

2025	1.19	1.00	8.10	8.90	0.03	0.31	6.10	6.41	0.29	0.65	0.94	—	2,971	2,971	0.12	0.04	0.14	2,986

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	4.30	4.16	27.0	201	0.37	0.85	26.3	27.2	0.85	2.71	3.56	—	40,253	40,253	1.64	0.52	3.86	40,453
2025	4.29	4.15	27.0	201	0.37	0.85	212	213	0.84	22.6	23.1	—	40,221	40,221	1.64	0.52	4.95	40,421
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	4.29	4.15	27.1	201	0.37	0.85	83.7	84.1	0.85	9.90	10.4	—	40,235	40,235	1.64	0.80	0.27	40,431
2025	4.28	4.14	27.1	201	0.37	0.85	26.3	27.2	0.84	2.71	3.56	—	40,203	40,203	1.64	0.52	0.10	40,399
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	2.82	2.71	17.8	132	0.24	0.56	24.4	25.0	0.56	2.71	3.27	—	26,864	26,864	1.10	0.41	1.60	27,016
2025	1.90	1.84	11.4	89.6	0.16	0.37	33.4	33.8	0.36	3.56	3.93	—	17,948	17,948	0.74	0.23	0.82	18,037
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.51	0.50	3.25	24.1	0.04	0.10	4.46	4.56	0.10	0.49	0.60	—	4,448	4,448	0.18	0.07	0.27	4,473
2025	0.35	0.33	2.08	16.3	0.03	0.07	6.10	6.17	0.07	0.65	0.72	—	2,971	2,971	0.12	0.04	0.14	2,986

3. Construction Emissions Details

3.1. General (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	5.12	4.30	40.7	38.3	0.12	1.58	—	1.58	1.45	—	1.45	—	13,417	13,417	0.54	0.11	—	13,463
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	5.12	4.30	40.7	38.3	0.12	1.58	—	1.58	1.45	—	1.45	—	13,417	13,417	0.54	0.11	—	13,463
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.67	3.08	29.2	27.4	0.09	1.13	—	1.13	1.04	—	1.04	—	9,610	9,610	0.39	0.08	—	9,643
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.67	0.56	5.32	5.00	0.02	0.21	—	0.21	0.19	—	0.19	—	1,591	1,591	0.06	0.01	—	1,596

Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.07	1.20	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	257	257	< 0.005	0.01	1.10	261
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.10	0.09	1.05	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	238	238	0.01	0.01	0.03	242
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.06	0.73	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	172	172	< 0.005	0.01	0.34	175
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.13	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	28.5	28.5	< 0.005	< 0.005	0.06	28.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.2. General (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.27	1.27	6.60	68.8	0.12	0.25	—	0.25	0.25	—	0.25	—	13,417	13,417	0.54	0.11	—	13,463
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.27	1.27	6.60	68.8	0.12	0.25	—	0.25	0.25	—	0.25	—	13,417	13,417	0.54	0.11	—	13,463
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.91	0.91	4.73	49.3	0.09	0.18	—	0.18	0.18	—	0.18	—	9,610	9,610	0.39	0.08	—	9,643
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.17	0.86	9.00	0.02	0.03	—	0.03	0.03	—	0.03	—	1,591	1,591	0.06	0.01	—	1,596
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.07	1.20	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	257	257	< 0.005	0.01	1.10	261
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.10	0.09	1.05	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	238	238	0.01	0.01	0.03	242
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.06	0.73	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	172	172	< 0.005	0.01	0.34	175
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.13	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	28.5	28.5	< 0.005	< 0.005	0.06	28.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.3. General (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.87	4.09	36.8	37.4	0.12	1.42	—	1.42	1.31	—	1.31	—	13,422	13,422	0.54	0.11	—	13,468
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.87	4.09	36.8	37.4	0.12	1.42	—	1.42	1.31	—	1.31	—	13,422	13,422	0.54	0.11	—	13,468
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.87	2.41	21.7	22.1	0.07	0.84	—	0.84	0.77	—	0.77	—	7,906	7,906	0.32	0.06	—	7,933
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.52	0.44	3.95	4.02	0.01	0.15	—	0.15	0.14	—	0.14	—	1,309	1,309	0.05	0.01	—	1,313
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.06	1.11	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	252	252	< 0.005	0.01	1.00	256
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.09	0.09	0.97	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	234	234	0.01	0.01	0.03	237
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.05	0.56	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	139	139	< 0.005	0.01	0.26	141
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	23.0	23.0	< 0.005	< 0.005	0.04	23.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.4. General (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.27	1.27	6.60	68.8	0.12	0.25	—	0.25	0.25	—	0.25	—	13,422	13,422	0.54	0.11	—	13,468
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.27	1.27	6.60	68.8	0.12	0.25	—	0.25	0.25	—	0.25	—	13,422	13,422	0.54	0.11	—	13,468
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.75	0.75	3.89	40.5	0.07	0.15	—	0.15	0.15	—	0.15	—	7,906	7,906	0.32	0.06	—	7,933

Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.14	0.71	7.40	0.01	0.03	—	0.03	0.03	—	0.03	—	1,309	1,309	0.05	0.01	—	1,313
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.06	1.11	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	252	252	< 0.005	0.01	1.00	256
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.09	0.09	0.97	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	234	234	0.01	0.01	0.03	237
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.05	0.56	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	139	139	< 0.005	0.01	0.26	141
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	23.0	23.0	< 0.005	< 0.005	0.04	23.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Temp Platform and Dike (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.38	3.68	29.9	25.7	0.08	1.27	—	1.27	1.17	—	1.17	—	8,725	8,725	0.35	0.07	—	8,755
Dust From Material Movement	—	—	—	—	—	—	3.46	3.46	—	1.67	1.67	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.64	0.53	4.35	3.73	0.01	0.19	—	0.19	0.17	—	0.17	—	1,267	1,267	0.05	0.01	—	1,271
Dust From Material Movement	—	—	—	—	—	—	0.50	0.50	—	0.24	0.24	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.79	0.68	< 0.005	0.03	—	0.03	0.03	—	0.03	—	210	210	0.01	< 0.005	—	210
Dust From Material Movement	—	—	—	—	—	—	0.09	0.09	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.07	0.76	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	173	173	< 0.005	0.01	0.02	176
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.25	0.07	4.59	1.63	0.02	0.07	79.8	79.9	0.07	8.13	8.20	—	3,785	3,785	0.18	0.60	0.22	3,968
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.11	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	25.4	25.4	< 0.005	< 0.005	0.05	25.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.04	0.01	0.65	0.24	< 0.005	0.01	10.4	10.4	0.01	1.06	1.07	—	549	549	0.03	0.09	0.53	577
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.20	4.20	< 0.005	< 0.005	0.01	4.26
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.12	0.04	< 0.005	< 0.005	1.89	1.89	< 0.005	0.19	0.19	—	91.0	91.0	< 0.005	0.01	0.09	95.5

3.6. Temp Platform and Dike (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.83	0.83	4.30	45.9	0.08	0.17	—	0.17	0.17	—	0.17	—	8,725	8,725	0.35	0.07	—	8,755
Dust From Material Movement	—	—	—	—	—	—	3.46	3.46	—	1.67	1.67	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.12	0.62	6.67	0.01	0.02	—	0.02	0.02	—	0.02	—	1,267	1,267	0.05	0.01	—	1,271
Dust From Material Movement	—	—	—	—	—	—	0.50	0.50	—	0.24	0.24	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.11	1.22	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	210	210	0.01	< 0.005	—	210
Dust From Material Movement	—	—	—	—	—	—	0.09	0.09	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.07	0.76	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	173	173	< 0.005	0.01	0.02	176
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.25	0.07	4.59	1.63	0.02	0.07	79.8	79.9	0.07	8.13	8.20	—	3,785	3,785	0.18	0.60	0.22	3,968
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.11	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	25.4	25.4	< 0.005	< 0.005	0.05	25.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.04	0.01	0.65	0.24	< 0.005	0.01	10.4	10.4	0.01	1.06	1.07	—	549	549	0.03	0.09	0.53	577
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.20	4.20	< 0.005	< 0.005	0.01	4.26
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.12	0.04	< 0.005	< 0.005	1.89	1.89	< 0.005	0.19	0.19	—	91.0	91.0	< 0.005	0.01	0.09	95.5

3.7. Restoration (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.45	3.73	27.8	25.6	0.08	1.15	—	1.15	1.06	—	1.06	—	8,772	8,772	0.36	0.07	—	8,802

Dust From Material Movement	—	—	—	—	—	—	3.48	3.48	—	1.67	1.67	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.61	0.51	3.80	3.50	0.01	0.16	—	0.16	0.14	—	0.14	—	1,202	1,202	0.05	0.01	—	1,206
Dust From Material Movement	—	—	—	—	—	—	0.48	0.48	—	0.23	0.23	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.69	0.64	< 0.005	0.03	—	0.03	0.03	—	0.03	—	199	199	0.01	< 0.005	—	200
Dust From Material Movement	—	—	—	—	—	—	0.09	0.09	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.05	0.81	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	183	183	< 0.005	0.01	0.73	186
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.19	0.08	2.33	1.32	0.01	0.02	208	208	0.02	20.8	20.8	—	1,125	1,125	0.10	0.18	2.20	1,184

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	23.5	23.5	< 0.005	< 0.005	0.04	23.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	0.01	0.33	0.18	< 0.005	< 0.005	25.4	25.4	< 0.005	2.54	2.54	—	154	154	0.01	0.02	0.13	162
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.88	3.88	< 0.005	< 0.005	0.01	3.94
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.06	0.03	< 0.005	< 0.005	4.64	4.64	< 0.005	0.46	0.46	—	25.5	25.5	< 0.005	< 0.005	0.02	26.8

3.8. Restoration (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.83	0.83	4.30	45.9	0.08	0.17	—	0.17	0.17	—	0.17	—	8,772	8,772	0.36	0.07	—	8,802
Dust From Material Movement	—	—	—	—	—	—	3.48	3.48	—	1.67	1.67	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.11	0.59	6.29	0.01	0.02	—	0.02	0.02	—	0.02	—	1,202	1,202	0.05	0.01	—	1,206
Dust From Material Movement	—	—	—	—	—	—	0.48	0.48	—	0.23	0.23	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.11	1.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	199	199	0.01	< 0.005	—	200
Dust From Material Movement	—	—	—	—	—	—	0.09	0.09	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.05	0.81	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	183	183	< 0.005	0.01	0.73	186
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.19	0.08	2.33	1.32	0.01	0.02	208	208	0.02	20.8	20.8	—	1,125	1,125	0.10	0.18	2.20	1,184
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	23.5	23.5	< 0.005	< 0.005	0.04	23.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.02	0.01	0.33	0.18	< 0.005	< 0.005	25.4	25.4	< 0.005	2.54	2.54	—	154	154	0.01	0.02	0.13	162
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.88	3.88	< 0.005	< 0.005	0.01	3.94
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.06	0.03	< 0.005	< 0.005	4.64	4.64	< 0.005	0.46	0.46	—	25.5	25.5	< 0.005	< 0.005	0.02	26.8

3.9. Landfill Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.01	0.85	6.62	5.81	0.02	0.23	—	0.23	0.21	—	0.21	—	2,669	2,669	0.11	0.02	—	2,678
Dust From Material Movement	—	—	—	—	—	—	0.20	0.20	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.36	0.32	< 0.005	0.01	—	0.01	0.01	—	0.01	—	146	146	0.01	< 0.005	—	147
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	24.2	24.2	< 0.005	< 0.005	—	24.3
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.10	0.06	1.13	0.00	0.00	0.25	0.25	0.00	0.06	0.06	—	257	257	< 0.005	0.01	1.02	261
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	13.1	13.1	< 0.005	< 0.005	0.02	13.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.17	2.17	< 0.005	< 0.005	< 0.005	2.21
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.10. Landfill Grading (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.39	0.36	2.04	10.7	0.02	0.07	—	0.07	0.07	—	0.07	—	2,669	2,669	0.11	0.02	—	2,678
Dust From Material Movement	—	—	—	—	—	—	0.20	0.20	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.11	0.58	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	146	146	0.01	< 0.005	—	147
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	24.2	24.2	< 0.005	< 0.005	—	24.3

Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.10	0.06	1.13	0.00	0.00	0.25	0.25	0.00	0.06	0.06	—	257	257	< 0.005	0.01	1.02	261
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	13.1	13.1	< 0.005	< 0.005	0.02	13.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.17	2.17	< 0.005	< 0.005	< 0.005	2.21
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. CDSM (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	9.44	7.92	60.5	69.7	0.24	2.42	—	2.42	2.23	—	2.23	—	25,342	25,342	1.03	0.21	—	25,429
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	9.44	7.92	60.5	69.7	0.24	2.42	—	2.42	2.23	—	2.23	—	25,342	25,342	1.03	0.21	—	25,429
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	5.41	4.54	34.7	39.9	0.14	1.39	—	1.39	1.28	—	1.28	—	14,531	14,531	0.59	0.12	—	14,581
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.99	0.83	6.33	7.29	0.02	0.25	—	0.25	0.23	—	0.23	—	2,406	2,406	0.10	0.02	—	2,414
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.08	0.02	1.42	0.53	0.01	0.02	26.1	26.1	0.02	2.66	2.68	—	1,236	1,236	0.06	0.20	2.76	1,299

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.08	0.02	1.50	0.53	0.01	0.02	26.1	26.1	0.02	2.66	2.68	—	1,237	1,237	0.06	0.20	0.07	1,297
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.05	0.01	0.84	0.30	< 0.005	0.01	13.4	13.4	0.01	1.36	1.38	—	709	709	0.03	0.11	0.68	744
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.15	0.06	< 0.005	< 0.005	2.44	2.44	< 0.005	0.25	0.25	—	117	117	0.01	0.02	0.11	123

3.12. CDSM (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.84	2.76	18.9	130	0.24	0.58	—	0.58	0.57	—	0.57	—	25,342	25,342	1.03	0.21	—	25,429
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	2.84	2.76	18.9	130	0.24	0.58	—	0.58	0.57	—	0.57	—	25,342	25,342	1.03	0.21	—	25,429
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.63	1.58	10.9	74.8	0.14	0.33	—	0.33	0.33	—	0.33	—	14,531	14,531	0.59	0.12	—	14,581
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.30	0.29	1.98	13.6	0.02	0.06	—	0.06	0.06	—	0.06	—	2,406	2,406	0.10	0.02	—	2,414
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.08	0.02	1.42	0.53	0.01	0.02	26.1	26.1	0.02	2.66	2.68	—	1,236	1,236	0.06	0.20	2.76	1,299
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.08	0.02	1.50	0.53	0.01	0.02	26.1	26.1	0.02	2.66	2.68	—	1,237	1,237	0.06	0.20	0.07	1,297
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.05	0.01	0.84	0.30	< 0.005	0.01	13.4	13.4	0.01	1.36	1.38	—	709	709	0.03	0.11	0.68	744
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.15	0.06	< 0.005	< 0.005	2.44	2.44	< 0.005	0.25	0.25	—	117	117	0.01	0.02	0.11	123

3.13. CDSM (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	9.09	7.62	56.2	69.3	0.24	2.19	—	2.19	2.01	—	2.01	—	25,333	25,333	1.03	0.21	—	25,420
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	9.09	7.62	56.2	69.3	0.24	2.19	—	2.19	2.01	—	2.01	—	25,333	25,333	1.03	0.21	—	25,420
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.86	2.40	17.7	21.8	0.07	0.69	—	0.69	0.63	—	0.63	—	7,982	7,982	0.32	0.06	—	8,009
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.52	0.44	3.23	3.99	0.01	0.13	—	0.13	0.12	—	0.12	—	1,321	1,321	0.05	0.01	—	1,326
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.08	0.02	1.38	0.51	0.01	0.02	26.1	26.1	0.02	2.66	2.68	—	1,215	1,215	0.06	0.20	2.73	1,277
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.08	0.02	1.45	0.52	0.01	0.02	26.1	26.1	0.02	2.66	2.68	—	1,215	1,215	0.06	0.20	0.07	1,275
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.03	0.01	0.45	0.16	< 0.005	0.01	7.34	7.35	0.01	0.75	0.76	—	383	383	0.02	0.06	0.37	402
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.08	0.03	< 0.005	< 0.005	1.34	1.34	< 0.005	0.14	0.14	—	63.4	63.4	< 0.005	0.01	0.06	66.6

3.14. CDSM (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.84	2.76	18.9	130	0.24	0.58	—	0.58	0.57	—	0.57	—	25,333	25,333	1.03	0.21	—	25,420
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.84	2.76	18.9	130	0.24	0.58	—	0.58	0.57	—	0.57	—	25,333	25,333	1.03	0.21	—	25,420
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.89	0.87	5.96	41.1	0.07	0.18	—	0.18	0.18	—	0.18	—	7,982	7,982	0.32	0.06	—	8,009
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.16	1.09	7.50	0.01	0.03	—	0.03	0.03	—	0.03	—	1,321	1,321	0.05	0.01	—	1,326
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.08	0.02	1.38	0.51	0.01	0.02	26.1	26.1	0.02	2.66	2.68	—	1,215	1,215	0.06	0.20	2.73	1,277

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.08	0.02	1.45	0.52	0.01	0.02	26.1	26.1	0.02	2.66	2.68	—	1,215	1,215	0.06	0.20	0.07	1,275
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.03	0.01	0.45	0.16	< 0.005	0.01	7.34	7.35	0.01	0.75	0.76	—	383	383	0.02	0.06	0.37	402
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.08	0.03	< 0.005	< 0.005	1.34	1.34	< 0.005	0.14	0.14	—	63.4	63.4	< 0.005	0.01	0.06	66.6

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
General	Site Preparation	1/1/2024	10/28/2025	5.00	477	—
Temp Platform and Dike	Grading	1/1/2024	3/13/2024	5.00	53.0	—
Restoration	Grading	6/11/2025	8/19/2025	5.00	50.0	—
Landfill Grading	Grading	6/11/2025	7/8/2025	5.00	20.0	—
CDSM	Building Construction	3/14/2024	6/10/2025	5.00	324	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
General	Forklifts	Diesel	Average	2.00	10.0	134	0.20
General	Tractors/Loaders/Backhoes	Diesel	Average	2.00	11.0	76.0	0.37
General	Other Construction Equipment	Diesel	Average	6.00	10.0	400	0.42
General	Off-Highway Trucks	Diesel	Average	1.00	2.00	376	0.38
Temp Platform and Dike	Excavators	Diesel	Average	1.00	10.0	268	0.38
Temp Platform and Dike	Forklifts	Diesel	Average	1.00	10.0	134	0.20
Temp Platform and Dike	Other Construction Equipment	Diesel	Average	1.00	10.0	100	0.43
Temp Platform and Dike	Graders	Diesel	Average	1.00	10.0	238	0.41
Temp Platform and Dike	Rubber Tired Dozers	Diesel	Average	1.00	10.0	130	0.40
Temp Platform and Dike	Off-Highway Trucks	Diesel	Average	3.00	10.0	376	0.38
Restoration	Excavators	Diesel	Average	1.00	10.0	268	0.38
Restoration	Forklifts	Diesel	Average	1.00	10.0	134	0.20
Restoration	Plate Compactors	Diesel	Average	1.00	10.0	100	0.43
Restoration	Graders	Diesel	Average	1.00	10.0	238	0.41
Restoration	Rubber Tired Dozers	Diesel	Average	1.00	10.0	130	0.40
Restoration	Off-Highway Trucks	Diesel	Average	3.00	10.0	376	0.38
Landfill Grading	Graders	Diesel	Average	1.00	5.00	238	0.41
Landfill Grading	Tractors/Loaders/Backhoes	Diesel	Average	1.00	5.00	200	0.37
Landfill Grading	Excavators	Diesel	Average	1.00	5.00	380	0.38
Landfill Grading	Off-Highway Trucks	Diesel	Average	1.00	5.00	376	0.38
CDSM	Other General Industrial Equipment	Diesel	Average	2.00	10.0	165	0.48

CDSM	Other Construction Equipment	Diesel	Average	2.00	10.0	24.0	0.42
CDSM	Other Construction Equipment	Diesel	Average	2.00	10.0	75.0	0.42
CDSM	Other General Industrial Equipment	Diesel	Average	2.00	10.0	50.0	0.74
CDSM	Bore/Drill Rigs	Diesel	Average	2.00	10.0	580	0.50
CDSM	Excavators	Diesel	Average	2.00	10.0	268	0.38
CDSM	Pumps	Diesel	Average	2.00	10.0	11.0	0.74
CDSM	Tractors/Loaders/Backhoes	Diesel	Average	2.00	10.0	217	0.37
CDSM	Other General Industrial Equipment	Diesel	Average	2.00	10.0	402	0.74
CDSM	Off-Highway Trucks	Diesel	Average	2.00	10.0	376	0.38
CDSM	Dumpers/Tenders	Diesel	Average	2.00	10.0	16.0	0.38

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
General	Forklifts	Diesel	Tier 4 Final	2.00	10.0	134	0.20
General	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	11.0	76.0	0.37
General	Other Construction Equipment	Diesel	Tier 4 Final	6.00	10.0	400	0.42
General	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	2.00	376	0.38
Temp Platform and Dike	Excavators	Diesel	Tier 4 Final	1.00	10.0	268	0.38
Temp Platform and Dike	Forklifts	Diesel	Tier 4 Final	1.00	10.0	134	0.20
Temp Platform and Dike	Other Construction Equipment	Diesel	Tier 4 Final	1.00	10.0	100	0.43
Temp Platform and Dike	Graders	Diesel	Tier 4 Final	1.00	10.0	238	0.41
Temp Platform and Dike	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	10.0	130	0.40

Temp Platform and Dike	Off-Highway Trucks	Diesel	Tier 4 Final	3.00	10.0	376	0.38
Restoration	Excavators	Diesel	Tier 4 Final	1.00	10.0	268	0.38
Restoration	Forklifts	Diesel	Tier 4 Final	1.00	10.0	134	0.20
Restoration	Plate Compactors	Diesel	Tier 4 Final	1.00	10.0	100	0.43
Restoration	Graders	Diesel	Tier 4 Final	1.00	10.0	238	0.41
Restoration	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	10.0	130	0.40
Restoration	Off-Highway Trucks	Diesel	Tier 4 Final	3.00	10.0	376	0.38
Landfill Grading	Graders	Diesel	Tier 4 Final	1.00	5.00	238	0.41
Landfill Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	5.00	200	0.37
Landfill Grading	Excavators	Diesel	Average	1.00	5.00	380	0.38
Landfill Grading	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	5.00	376	0.38
CDSM	Other General Industrial Equipment	Diesel	Tier 4 Final	2.00	10.0	165	0.48
CDSM	Other Construction Equipment	Diesel	Tier 4 Final	2.00	10.0	24.0	0.42
CDSM	Other Construction Equipment	Diesel	Tier 4 Final	2.00	10.0	75.0	0.42
CDSM	Other General Industrial Equipment	Diesel	Tier 4 Final	2.00	10.0	50.0	0.74
CDSM	Bore/Drill Rigs	Diesel	Tier 4 Final	2.00	10.0	580	0.50
CDSM	Excavators	Diesel	Tier 4 Final	2.00	10.0	268	0.38
CDSM	Pumps	Diesel	Average	2.00	10.0	11.0	0.74
CDSM	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	10.0	217	0.37
CDSM	Other General Industrial Equipment	Diesel	Tier 4 Final	2.00	10.0	402	0.74
CDSM	Off-Highway Trucks	Diesel	Tier 4 Final	2.00	10.0	376	0.38
CDSM	Dumpers/Tenders	Diesel	Average	2.00	10.0	16.0	0.38

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
General	—	—	—	—
General	Worker	27.5	12.4	LDA,LDT1,LDT2
General	Vendor	—	8.40	HHDT,MHDT
General	Hauling	0.00	35.0	HHDT
General	Onsite truck	0.00	1.00	HHDT
Temp Platform and Dike	—	—	—	—
Temp Platform and Dike	Worker	20.0	12.4	LDA,LDT1,LDT2
Temp Platform and Dike	Vendor	—	8.40	HHDT,MHDT
Temp Platform and Dike	Hauling	30.6	35.0	HHDT
Temp Platform and Dike	Onsite truck	—	—	HHDT
CDSM	—	—	—	—
CDSM	Worker	0.00	12.4	LDA,LDT1,LDT2
CDSM	Vendor	0.00	8.40	HHDT,MHDT
CDSM	Hauling	10.0	35.0	HHDT
CDSM	Onsite truck	—	—	HHDT
Restoration	—	—	—	—
Restoration	Worker	20.0	12.4	LDA,LDT1,LDT2
Restoration	Vendor	—	8.40	HHDT,MHDT
Restoration	Hauling	94.0	3.00	HHDT
Restoration	Onsite truck	—	—	HHDT
Landfill Grading	—	—	—	—
Landfill Grading	Worker	28.0	12.4	LDA,LDT1,LDT2
Landfill Grading	Vendor	—	8.40	HHDT,MHDT

Landfill Grading	Hauling	0.00	0.00	HHDT
Landfill Grading	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
General	—	—	—	—
General	Worker	27.5	12.4	LDA,LDT1,LDT2
General	Vendor	—	8.40	HHDT,MHDT
General	Hauling	0.00	35.0	HHDT
General	Onsite truck	0.00	1.00	HHDT
Temp Platform and Dike	—	—	—	—
Temp Platform and Dike	Worker	20.0	12.4	LDA,LDT1,LDT2
Temp Platform and Dike	Vendor	—	8.40	HHDT,MHDT
Temp Platform and Dike	Hauling	30.6	35.0	HHDT
Temp Platform and Dike	Onsite truck	—	—	HHDT
CDSM	—	—	—	—
CDSM	Worker	0.00	12.4	LDA,LDT1,LDT2
CDSM	Vendor	0.00	8.40	HHDT,MHDT
CDSM	Hauling	10.0	35.0	HHDT
CDSM	Onsite truck	—	—	HHDT
Restoration	—	—	—	—
Restoration	Worker	20.0	12.4	LDA,LDT1,LDT2
Restoration	Vendor	—	8.40	HHDT,MHDT
Restoration	Hauling	94.0	3.00	HHDT
Restoration	Onsite truck	—	—	HHDT
Landfill Grading	—	—	—	—
Landfill Grading	Worker	28.0	12.4	LDA,LDT1,LDT2

Landfill Grading	Vendor	—	8.40	HHDT,MHDT
Landfill Grading	Hauling	0.00	0.00	HHDT
Landfill Grading	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%
Sweep paved roads once per month	9%	9%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
General	—	—	0.00	0.00	—
Temp Platform and Dike	12,973	—	66.3	0.00	—
Restoration	—	37,557	62.5	0.00	—
Landfill Grading	37,557	—	6.25	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
User Defined Industrial	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	453	0.03	< 0.005
2025	0.00	453	0.03	< 0.005

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	site specific construction schedule
Construction: Off-Road Equipment	Site specific construction list
Construction: Trips and VMT	site specific information
Construction: On-Road Fugitive Dust	part of trip on temporary unpaved roads.

Concrete Batch Plant Emissions for Oaklnad Airport Perimeter Dike Project

Concrete Batch Plant Emissions	AP-42 Emission Factor (lb/cubic yard concrete)	Emissions	
	PM10	PM10 (lb)	PM2.5(lb)
Aggregate Delivery	0.0031	40.3	32.2
Sand Delivery	0.0007	9.1	7.3
Aggregate Transfer to Conveyor	0.0031	40.3	32.2
Sand Transfer to Conveyor	0.0007	9.1	7.3
Aggregate Transfer to Elevated Storage	0.0031	40.3	32.2
Sand Transfer to Elevated Storage	0.0007	9.1	7.3
Cement Delivery Silo	0.0001	1.3	1.0
Weigh hopper Loading	0.0038	49.4	39.5
Truck Mix Loading	0.08742	1136.5	909.2
PM10 Total (lb)		1335.4	1068.3
PM 10 Total (ton)		0.7	0.5

1. It is estimated that there will be 13,000 cubic yards of concrete.
2. PM2.5 is assumed to be 80% of PM10 emissions.